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	<p align="center">General Statement of Policy</p>	

I. Purpose:

It is the policy of M & D Coatings, Inc. that employee safety is considered the most vital aspect of our operations. Above all, safety is the primary consideration in all stages of planning and execution of any work performed. Compliance with the Occupational Safety and Health Act (OSHA) of 1970 as amended and supplemented, is the mandatory minimum for all employees. State, local and/or plant policies may be more stringent, and when applicable, must be adhered to.

II. Scope

In order to ensure that this program is properly implemented, the Health & Safety Administrator has been designated as Policy Administrator. This procedure applies to all affected employees and to subcontractors where another policy is not already in place.

III. General

The supervisor is responsible for the safe conduct of all employees under his/her direction. All employees are to report any unsafe condition or potential hazard directly to the supervisor.

No work requiring safety equipment or apparatus is to be performed unless the proper equipment or apparatus is available, in good working condition, and is used in the proper manner. All employees shall be trained in the proper use of safety equipment. Manufacturer's recommendations and instructions shall be followed.

IV. Safety Guidelines

The following safety guidelines, while not comprehensive, highlight rules, which can prevent some of the most common accidents found in industry. If you have any questions concerning this program or its rules and regulations, please inform your supervisor.

Remember, the responsibility for personal safety, as well as the safety of others shall take precedence over all other activities. M & D Coatings, Inc. follows an "Open Door Policy". We encourage employees to bring up new ideas, constructive criticism, suggestion forms, etc. M & D Coatings, Inc. will consider all such information as a means to make your work place a safer one.

By signing the acknowledgement page of this program, you indicate that you understand this program and intend to comply with its provisions. Failure to comply with the rules contained herein can be adequate reason for dismissal. Because this brief program outline encompasses only certain safety aspects, M & D Coatings, Inc. cannot assure safety through compliance with the data contained herein.

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First Aid Kits

A first aid kit shall be provided in each area for every 25 persons employed. The supervisor shall post the telephone numbers of the local hospital, ambulance, fire department, and local law enforcement agency.

In the event of an accident, notify the supervisor immediately.

Personal Protective Equipment

- 1.) Hard hats must be worn where applicable and as required.
- 2.) Safety glasses and, at times, safety goggles and/or face shields are compulsory when drilling, burning, chipping, grinding, sawing, grouting, and while otherwise required by your supervisor. Welding helmets are mandatory for all welders. Respiratory equipment, earplugs, full body harnesses, and lifelines shall be worn as required.
- 3.) Gloves are to be worn when handling material with sharp edges and as directed by your supervisor. Finger rings and wristwatches are a constant hazard and all workers are required to remove them while working.
- 4.) Shirts that cover the mid-section are to be worn by all personnel with a minimum of a four-inch sleeve while on company time. No ties or loose or baggy clothing are permitted.
- 5.) Know where fire extinguishers, telephones, first aid kits, and other emergency equipment is located and know how to use this equipment in the event of an emergency.

Tools, Equipment, and Materials

- 1.) Check all vehicles and equipment before use to assure that they are in proper operating condition. The pre-operational inspection shall be documented.
- 2.) Hand tools such as hammers, punches, picks, and chisels shall be inspected for faulty handles or mushroomed heads prior to the start of each job and shall be re-inspected before each use.
- 3.) Cables, ropes, sheaves, shackles, booms, lifting equipment, etc., shall be checked every day. Worn or frayed items are to be replaced or repaired immediately.
- 4.) All electrical equipment must be grounded. Three pronged plugs and receptacles are required on extension and equipment cords. GFCI's may be required in certain situations, ask your supervisor.
- 5.) Use safety guards provided. The source of power must be disconnected whenever it is necessary to repair or adjust a piece of electrical equipment. It is not sufficient to merely turn off the operating control for the equipment. NOTE: Only qualified and authorized persons are to repair electrical equipment.
- 6.) All electrical wires within ten feet of the apex, roof, sides or corners of a proposed building or a fully extended crane or aerial work platform must be moved or shielded until such time as the building is completely erected. NOTE: Minimum clearance distance of 10 ft. for any work performed near electrical lines carrying 50KV or less. Above 50KV distance increases.

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- 7.) Gasoline may be handled or stored only in approved safety cans. All internal combustion engines must be shut off and cooled before fueling, oiling, cleaning or adjusting. Check oil when refueling. Do not use gas for cleaning parts or tools.
- 8.) Oxygen and acetylene equipment can be extremely dangerous. Unless you are qualified and authorized to use this equipment, leave it alone. Cylinders shall be secured upright at all times and capped when in storage. Watch out for nearby combustibles and keep bottles shielded or a safe distance from welding or cutting operations. NOTE: Cylinders must be separated from combustible materials by 20 feet minimum when in storage.
- 9.) Compressed air hoses should never be pointed at yourself or anyone else. Compressed air must be used for the prescribed operations only, with pressure kept as low as possible for doing the job adequately.
- 10.) Riding—No more passengers than factory seating allows may ride in the cab of a truck at one time. Seat belts provided must be worn. Riding material hoists, crane loads, balls, hooks or excavation equipment is not permitted. PIT (forklifts) must have a seatbelt, which is to be worn when operating the lift.
- 11.) Material or Equipment being transported by truck must be loaded cinched and flagged in a manner consistent with good loading and transporting practice and only authorized employees holding valid licenses of the proper class shall drive the truck.
- 12.) Stay out from under and in front of loads on cranes, etc. Do not cause or permit a load to be carried over a work person who is unaware of it or cannot get clear. NOTE: There should always be 2 ft. minimum clearance distance between the counterweight of a crane and any structure. If less than 2ft. the area must be barricaded to prevent a person from being crushed.
- 13.) Do not attempt to lift objects that are too heavy for you to lift alone (75 lb. weight limit); ask for help. Use proper lifting technique at all times.

Ladders, scaffolding and openings

- 1.) All ladders must be inspected prior to the start of each job, and equipped with safety feet. Ladders should never be painted.
- 2.) Ladders must be on a firm foundation, lashed or hooked to the structure (can be cleated or held securely by another employee) and extended 36" above the landing.
- 3.) Never climb or descend a ladder with anything in your hands or pockets. Use a hand line for tools and equipment to be raised or lowered.
- 4.) Wood scaffolds must be of good sound lumber, generally two planks wide, of not less than 2" x 8" material adequately supported. Wheels on metal scaffolds must be provided with locks. Guardrails and toe boards must be used on all scaffolding.
- 5.) Openings in the floor or ground must be railed off and have 4" toe boards or covered. Open sided floors must be railed including toe boards. Excavations must be guarded by barriers with warning lights at night.

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General

- 1.) Smoking is permitted in authorized areas only.
- 2.) Running is prohibited in work areas.
- 3.) Sunglasses or dark safety glasses are not to be worn when working inside a building or facility. Indoor/outdoor safety glasses are permitted with supervisor approval.
- 4.) Fire aisles and exits are to be kept clear of material and/or debris at all times.
- 5.) Know and understand evacuation procedures in the event of emergency evacuation.
- 6.) Observe parking restrictions.
- 7.) Observe restrictions on use of cameras.
- 8.) Observe all requirements for hearing protection, dust masks or respirators.
- 9.) When necessary, observe locations of eye wash fountains and safety showers.
- 10.) Safety precautions must be strictly adhered to when any flammable material is to be stored.

NOTE: All employees are subject to random drug testing.

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ACKNOWLEDGEMENT

Name: _____

I hereby acknowledge that I have received a copy of M & D Coatings, Inc. Safety Guidelines.

I further understand that by accepting employment with M & D Coatings, Inc. at any location that I will be expected to abide by the rules contained in this program. Also, I understand that I am to abide by any other rules and regulations pertaining to the particular job that I may be assigned.

I understand that by my failure to work in a safe and orderly manner may lead to termination.

Signature: _____ Date: _____

I acknowledge that I have delivered the M & D Coatings, Inc. Safety Orientation on the date indicated to the person whose signature appears above. Also, I acknowledge that this person has been given any other rules or regulations that may pertain to the particular job or project.

Signature: _____ Date: _____

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 002 Page 1 of 1 Revision No:</p>
	<p align="center">First Aid & CPR Procedure</p>	

I. Purpose:

M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health & safety process. In the event an accident does occur, M & D Coatings, Inc.'s objective is to provide employees with the best medical attention available.

II. Scope

In order to ensure that this program is properly implemented, M & D Coatings, Inc.'s Health & Safety Administrator has been designated as policy coordinator. This procedure applies to all employees.

III. First Aid Kits and Medical Facilities

Basic First Aid kits are to be available. The first aid materials shall be in a weatherproof container with individual sealed packages for each type of item. The supervisor or his/her designee will replace used materials as soon as possible.

Where the eyes or body of any person may be exposed to injurious chemicals and/or materials, suitable facilities for quick drenching or flushing of the eyes and body are provided with the work area for immediate emergency use. Injured employees will be taken to the local occupational medicine clinic/physician or emergency room.

No First Responders have been designated at M & D due to the fact that all locations are near a medical facility.

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	<p align="center">Hazard Communication Program</p>	

I. Purpose:

This procedure gives the requirements for compliance with the Hazard Communication Standard as set forth by OSHA 1910.1200.

II. Scope

This procedure applies to all M & D Coatings, Inc. employees and subcontractors.

III. Background

This written hazard communication program not only meets OSHA requirements, but also ensures that M & D Coatings, Inc. employees are effectively informed concerning potential and existing chemical hazards. Hazard Communication is one important aspect of M & D Coatings, Inc. Occupational Safety and Health Program, which includes:

- Management commitment and active support.
- Engineering controls for safety and health hazards.
- Enforcement of safety rules and programs.
- Recognition, evaluation and control of occupational safety and health hazards.
- Medical surveillance.
- Assigned safety and health responsibility and accountability.

IV. Approach

The method used to inform employees include:

- Container labeling and other forms of warning.
- Material Safety Data Sheets (MSDS).
- Employee education and training.

V. Application

This hazard communication program applies to:

- Known occupational safety and health hazards.
- Chemicals known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

VI. Determining Chemical Hazards

The Office Staff is responsible for identifying chemical hazards from material safety data sheets (MSDS) provided by chemical manufacturers and distributors.

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VII. Requirements

Each M & D Coatings, Inc. facility is responsible for maintaining the MSDS/chemical inventory, and all labeling of primary containers. Copies of MSDSs shall be maintained at each M & D Coatings, Inc. facility. For this policy, the program administrator is M & D Coatings, Inc.'s Health & Safety Administrator.

The M & D Coatings, Inc. Hazard Communication Program applies to all hazardous chemicals stored or used in the workplace, except:

- 1) Hazardous waste as defined by the Solid Waste Disposal Act and the Resource Conservation and Recovery Act.
- 2) Tobacco and Tobacco products.
- 3) Food, drugs, and cosmetics intended for personal consumption.

All M & D Coatings, Inc. employees and subcontractors will follow all procedures relating to Hazard Communication to meet the intent of OSHA Standard CFR 1910.1200. M & D Coatings, Inc. and subcontractors will follow all plant procedures regarding Hazard Communication while performing work at other plant sites.

VIII. Material Labeling

Chemical manufacturers, importers, and distributors provide labels, tags, or other markings for containers of hazardous chemicals. This identification includes the following information:

- Identity of the hazardous material.
- Appropriate hazards warnings.
- Name and address of the chemical manufacturer, distributor, or other responsible parties.

M & D Coatings, Inc. requires that containers of hazardous materials in the work place are labeled, tagged or marked with the identity of the hazardous chemical and appropriate hazard warning. Occasionally, signs, placards, process sheets, batch tickets, operating procedures, or similar accessible written materials are used, instead of affixing labels to individual containers.

Portable containers of hazardous chemicals do not have to be labeled if they contain chemicals transferred from labeled containers, which are intended only for the immediate use of the employee who performs the transfer.

M & D Coatings, Inc. will not remove the labels from containers in which materials arrive. All labels on incoming containers must not be defaced in any way. Missing or defaced labels must be immediately reported so appropriate labels can be reapplied immediately.

M & D Coatings, Inc. will ensure that all labels are legible and in English. However for non-English speaking employees the information will be presented in their language as well.

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Portable containers will be labeled with a labeling system that includes the name of the material, the health and physical hazards, and the personal protective equipment to be used or any special precautions.

IX. Description of the use of MSDS

M & D Coatings, Inc. will rely on the manufacturer or distributor to conduct a hazard determination on products purchased for use. This information can be obtained from material safety data sheets (MSDS).

The MSDS file will be available and readily accessible to all employees at all times during the work shift. Copies of Material Safety Data Sheets may be obtained by contacting the Facility Warehouse Manager or the Health & Safety Administrator.

A hazardous material is one that is either a physical hazard (i.e., flammable, oxidizer, etc.) or a health hazard (i.e., causes acute or chronic health effects).

MSDSs are in English and contain the following information:

- The identity of the chemical.
- The physical and chemical characteristics.
- The physical and health hazards.
- Primary routes of entry.
- Exposure limits.
- Precautions for safe handling.
- Controls to limit exposure.
- Emergency and first aid procedures.
- Name of manufacturer or distributor.

MSDS Availability

M & D Coatings, Inc. maintains copies of all MSDSs for each hazardous material in the workplace and makes them readily accessible during each work-shift to employees when they are in their work area(s). Employees may review the MSDSs for the materials they work with at the time, while they are in their work area. They also may request a copy of an MSDS if they wish. Upon request, the National Institute for Occupational Safety and Health (NIOSH) and OSHA have access to our MSDSs.

X. Chemical Inventory

The list of hazardous chemicals, (chemical inventory) will be updated periodically by the Health and Safety Administrator as needed.

XI. Non-routine tasks

Prior to conducting a non-routine task, the Supervisor shall initiate a hazard assessment. The supervisor and the work crew shall discuss the hazards (including chemical and physical hazards) identified in the assessment and the protective measures required. (See hazard assessment survey form at end of PPE section).

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XII. Providing Chemical Information to Other Employers

If there are several-employers working under the auspices of M & D Coatings, Inc. on the job site, the contractor will take the necessary precautions to instruct their employees of the hazard communication system that is provided by facility.

XIII. Training

M & D Coatings, Inc. employees will be provided general Hazard Communication Training in accordance with the M & D Coatings, Inc.'s Hazard Communication Procedure prior to beginning work. Training shall include proper labeling, using the Hazardous Material Identification System (HMIS) or NFPA, accessing an MSDS, chemical detection methods, PPE selection, fire fighting instructions, chemical routes of entry, etc.. As additional hazards are identified or non-routine tasks are initiated, follow-up training will be provided to ensure employees are aware of the hazards and associated protective measures. This training program will involve a classroom training session conducted during the orientation program. M & D Coatings, Inc. attends the Basic Orientation Plus training given by Tennessee Valley Training Center for initial Hazard Communication Training.

As additional hazards are identified, the training will be continued through safety meetings, toolbox safety topics, and small group discussions prior to conducting non-routine tasks.

XIV. Hygiene and Health

When working with hazardous materials such as paints and thinners:

- Wear gloves.
- Keep your face and hands away from the mixing operations.
- When spraying, wear eye protection, cartridge respirators, spray hood and gloves.
- Wash thoroughly before eating, drinking or smoking.
- Always clean work clothing after each use.
- Use a lanolin based cream to protect any skin which cannot be covered.
- Keep portable drinking water containers tightly covered and separate from the work area.
- Do not eat, drink or smoke in the work area where vapors or mists are present in the atmosphere.
- Use the proper toilet facilities.

XV. Recordkeeping

Documentation will be completed and maintained in accordance with the OSHA Hazard Communication Standard. The written program and training documentation will be maintained by the Health & Safety Administrator.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 004 Page 1 of 16 Revision No:</p>
	<p align="center">Respiratory Protection Program</p>	

I. Purpose:

In accordance with OSHA 1910.134, the following program has been developed to ensure the health and safety of employees and subcontractors working in conditions when respiratory protection is required.

M & D Coatings, Inc. will follow all plant procedures regarding Respiratory Protection. M & D Coatings, Inc. does not normally have employees who use respiratory protection, but will evaluate employee exposure on a case by case basis and will follow all rules and regulations as set forth by OSHA Standard 1910.134

M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health and safety process.

II. Scope

This plan applies to all M & D Coatings, Inc. employees and subcontractors that require the use of respiratory protective equipment.

III. Controls

Every consideration will be given to the use of effective engineering controls to eliminate or reduce exposure to respiratory hazards to the point where respirators are not required. Examples of engineering controls include local exhaust ventilation systems or changes in the process to reduce the level of contaminants. However, when feasible engineering controls are not effective in controlling toxic substances, M & D Coatings, Inc. will provide appropriate respiratory protective equipment at no charge to the employee.

Employees required to use respiratory protective devices because of exposure to toxic substances will do so as a condition of employment. Employees required to use respirators will be medically screened, appropriately tested, properly fitted and thoroughly trained in their use.

M & D Coatings, Inc. employees shall follow requirements contained in this respiratory protection procedure and the requirements contained in 29 CFR Part 1910.134.

IV. Program Administration

M & D Coatings, Inc.'s Health & Safety Administrator is the respiratory protection program administrator and has the authority to act on any and all matters relating to the administration of the program.

Supervisors are responsible for attending respiratory protection training and assuring that the employees are using, storing, maintaining, and inspecting respirators in accordance with the requirements of this plan.

It is the responsibility of each respirator user to wear their respirator when and where it is required, inspect the respirator when and where it is required, inspect the respirator before and

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after each use, maintain the respirator in a clean and sanitary condition, and to store the respirator properly.

V. Acceptable Respiratory Protective Equipment

M & D Coatings, Inc. will only purchase respiratory protective equipment that carries the NIOSH approval.

VI. Selection of Proper Respirator and Cartridge

Respirator face piece and cartridge selection involves reviewing each operation to:

- Determine what hazards may be present (hazard determination)
- Select which type or class of respirator can offer adequate protection

VII. Use of Air-Supplied Respirators

Breathing air shall meet at least the requirements for Grade breathing air as described by the Compressed Gas Association.

Airline couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of airline respirators with non-respirable gases or oxygen.

Breathing air may be supplied to respirators from cylinders or air compressors:

- Each cylinder must be monitored to ensure that it contains Grade D breathing air.

- The compressor for supplying air shall be equipped with necessary safety and standby devices described in 1910.134(l) (6).

VIII. Determining Comfort of Respirator

Each employee will be given the opportunity to select a respirator that provides the most comfortable fit. The employee will be shown how to assess a comfortable device and should eliminate those, which are obviously ill fitting.

An assessment of comfort will include the following points:

- 1) Chin properly placed
- 2) Fit across Nose Bridge
- 3) Positioning of mask on nose
- 4) Strap tension
- 5) Distance from nose to chin
- 6) Room to talk
- 7) Tendency to slip
- 8) Cheeks filled out
- 9) Hindrance to movement

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IX. Assessment of Respirator Fit

After the employee has been shown how to assess a respirator, he/she will be shown how to put on a respirator, how to position it on the face, how to set strap tension, and how to determine a proper fit.

The employee should hold each face piece up to the face and eliminate those that obviously do not give a comfortable or proper fit.

Familiarization

Once the proper fitting respirator has been selected, the employee should put on the device and adjust the face piece and the tension of the straps. The employee should wear the mask for a few minutes before taking it off and putting it on several times, adjusting the straps each time to become familiar with the respirator and adapt at setting the proper tension on the straps.

Fit Checks

There are two tests that are used in the field to check the seal of the respirator. These are known as the positive and negative fit checks. Each of these two tests must be performed every time a respirator is put on and prior to entering a contaminated area.

NOTE: Although both the positive and negative fit checks are considered essential to a good respiratory protection program and should always be used prior to entering an area of exposure, they are recognized solely as a field check and will not be substituted for the fit test.

Positive Fit Check

This test only applies to those respirators, which have an exhalation valve, which can be blocked. The exhalation valve cover may have to be removed for the test.

Close or "block off" the exhalation valve.

Exhale gently into the face piece.

If a slight positive pressure is built up with no apparent outward leakage around the seal, then the face piece-to-face seal is satisfactory.

Negative Fit Check

Close the inlet opening or hose of the respirator face piece with the hand(s), or other means.

Inhale gently so that the face piece collapses slightly and hold the breath for ten seconds.

If the face piece remains slightly collapsed and no inward leakage occurs, then the face piece-to-face seal is deemed to be satisfactory.

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Fit Testing

Fit testing shall be conducted by: M & D Coatings, Inc. Health & Safety Administrator or his/her duly appointed representative.

Fit Testing Procedures – General Requirements

M & D Coatings, Inc. will conduct fit testing using the following procedures. The requirements apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject’s formal training on respirator use, because it is only a review.

The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

The test subject shall be instructed to hold each chosen face piece up to the face and eliminate those that obviously do not give an acceptable fit.

Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

- 1) Position of the mask on the nose.
- 2) Position of mask on face and cheeks
- 3) Room to talk

The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in this procedure. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece shall be selected and retested if the test subject fails the user seal check tests.

The test shall not be conducted if there is **any** hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel (i.e., glasses), which interferes with a satisfactory, fit, shall be altered or removed.

If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

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Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure.

The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use, which could interfere with respirator fit.

Test Exercises. The test subject shall perform exercises in the test environment in the following manner:

Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage:

"When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow."

Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)

Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for these exercises in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

Normal breathing. Same as exercise (1)

NOTE: Each test exercise shall be performed for one minute except for the grimace exercise, which shall be performed for 20 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be

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adjusted once the fit test exercise begins. Any adjustment voids the test, and the fit test must be repeated.

Qualitative Fit Test (QLFT) Protocol

M & D Coatings, Inc. will ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform test properly, recognize invalid tests, and ensure that test equipment is in proper working order.

M & D Coatings, Inc. will ensure that QLFT fit-test protocols and/or guidelines by manufacturers are followed during fit testing and that Appendix A of 1910.134 requirements is met. The person performing the fit test will review protocols of each to determine adequacy.

X. Issuance of respiratory protective equipment

The issuance of respirators to employees will be based on the following considerations:

A person must have received appropriate medical clearance and documented training must have been received prior to being issued a respirator.

A person who has hair (e.g., beard growth, mustache, sideburns, stubble, low hairline, bangs), which passes between the face and the sealing surface of the respirator face piece, shall not be permitted to wear such a respirator. The job supervisor and the individual who issues the respirators shall ensure that employees comply with this requirement.

In certain circumstances, depending on the employer’s specifications, a Powered Air Purifying Respirator (PAPR) can be used on a person who has facial hair. The policies and procedures of the employer must be reviewed prior to initiating the use of a PAPR. In all circumstances, the use of an Air-Purifying respirator (APR) with facial hair is not permitted.

A corrective vision spectacle (inserts are available) which has temple bars or straps which pass between the sealing surface of a full face piece and the wearer’s face shall not be permitted.

A head covering which passes between the sealing surface of a respirator face piece and the wearer’s face shall not be permitted.

The wearing of a spectacle, goggle, a face shield, a welding helmet, or other eye and face protective device, which interferes with the seal of a respirator to the wearer, shall not be permitted.

If scars, hollow temples, excessively protruding cheekbones, deep creases in facial skin, the absence of teeth or dentures, or unusual facial configurations prevent a seal of a respirator face piece to a wearer’s face, the person shall not be permitted to wear the respirator.

Where practical, and where the above considerations are deemed acceptable, respirators should be assigned to individual employees for their exclusive use and labeled for identification in such a way as not to affect the performance of the respirator.

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XI. Obtaining Medical Approval for Respirator Use

Using a respirator may place a physiological burden on employees that vary with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, **M & D Coatings, Inc.** requires that employees must meet the minimum requirements of this section to determine the employee's ability to use a respirator.

M & D Coatings, Inc. will arrange a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.

Medical evaluation procedures.

M & D Coatings, Inc. will ensure that a PLHCP performs a medical evaluation in compliance with 29 CFR 1910.134 and will be provided a copy of this program. The PLHCP will determine if the medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire needs to be performed. At a minimum the medical questionnaire will be completed.

M & D Coatings, Inc. will ensure that employees understand the medical questionnaire or will have the PLHCP available to answer questions or explain the contents of the questionnaire to the employee. In any case, a PLHCP will be available to answer employee questions.

Supplemental information for the PLHCP.

The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:

- 1) The type and weight of the respirator to be used by the employee
- 2) The duration and frequency of respirator use (including use for rescue and escape)
- 3) The expected physical work effort
- 4) Additional protective clothing and equipment to be worn
- 5) Temperature and humidity extremes that may be encountered
- 6) Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information and the PLHCP remain the same.
- 7) **M & D Coatings, Inc.** shall provide the PLHCP with a copy of the written respiratory protection program and a copy of 29 CFR 1910.134 (e).

Medical Determination

A written recommendation regarding the employee's ability to use the respirator will be obtained from the PLHCP. The recommendation shall provide only the following information:

Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator. The need, if any, for follow-up medical evaluations

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A statement that the PLHCP has provided the employee with a copy of the written recommendation

XII. Training

The extent and frequency of employee training depends primarily on the nature and extent of the hazard. As a minimum, all affected employees and supervisory personnel will be trained in basic respirator practices through the Basic Orientation Plus given by Tennessee Valley Training Center.

The respirator-training program must include:

- 1) A discussion of the nature of airborne contaminants against which the employee must be protected, and why engineering controls have not been effective in controlling exposure to the point where respirators are not required.
- 2) A discussion of why the respirator has been selected for this job is the proper device for this particular purpose.
- 3) An explanation of the differences between air-purifying and supplied air respirators and how their use is controlled by the amount of exposure.
- 4) Instruction on the respirator's limitations emphasizing such things as oxygen deficiency; toxic contaminants which are immediately dangerous to life or health; particulates, such as asbestos, which are not immediately dangerous to life or health; and the need to change filter cartridges when indicated to do so by testing or smelling the contaminant.
- 5) Instructions to inspect the respirator and ensure it is in proper working condition.
- 6) Instructions on how to put on the respirator, how it should be positioned on the face, how to set strap tension, and how to wear the respirator comfortably.
- 7) Instructions on the method of fit testing used and the proper way to conduct positive and negative fit checks each time the respirator is put on. During this instruction, the wearer will be made to understand that the respirator cannot be used when conditions prevent a satisfactory face piece-to-face seal.
- 8) Instructions in the proper care, maintenance and storage of the respirator.

XIII. Care and Maintenance

Personnel involved in respirator maintenance will be thoroughly trained. Substitution of parts from different brands or types of respirators invalidates approval of the device. Repairs and adjustments shall never be made beyond the manufacturer's recommendations.

Simple cleaning, such as using a towelette, or wiping off the respirator with a wet towel may be performed by the respirator user. Simple cleaning should also be conducted after a respirator is

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“tried on” and rejected. This simple cleaning should be done before another employee tries the respirator on.

More comprehensive cleaning will be performed, such as “Dunking” the respirator in biocide, if the face piece is used for any length of time (more than one hour) by more than one person.

Storing the Respirator

When they are not being used, respirators shall be individually sealed in plastic bags and stored in order to protect them against dust, sunlight, extreme temperatures, excessive moisture, or damaging chemicals. They shall be stored in such a way, that the face piece and exhalation valve is not distorted.

Inspecting the Respirator

The individual shall inspect all respirators before and after each use, to ensure that they are in satisfactory working condition.

XIV. Change of Cartridge Schedule

A change of cartridge schedule shall be implemented following manufacturer’s suggestions if no “End-of-Service-Life-Indicator” (ESLI) is present on the individual cartridge. If no information can be obtained from the cartridge manufacturer, cartridges will be changed in accordance with the employer requirements or daily.

XV. Record Keeping

M & D Coatings, Inc. will maintain records as described in the respiratory protection procedure throughout the project duration.

M & D Coatings, Inc. will maintain all medical and exposure records for the duration of employment plus 30 years.

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Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care profession who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

Today's Date: _____

Your name: _____

Your age (to nearest year): _____

Sex (circle one): Male Female

Your height: _____ ft _____ in

Your job title: _____

A phone number where you can be reached by the health care professional who reviews this questionnaire (include the area code): _____

The best time to reach you at this number: _____

Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes No

Check the type of respirator you will use (you can check more than one category):

____ N, R, or P disposable respirator (filter mask, non-cartridge type only)

____ Other (half- or full-face piece type, powered air purifying, supplied air, self-contained breathing apparatus)

Have you worn a respirator (circle one): Yes No

If "yes" what type(s): _____

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Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes or no").

Do you currently smoke tobacco, or have you smoke tobacco in the last month?	Yes	No
Have you ever had any of the following conditions?		
Seizures (fits)	Yes	No
Diabetes (sugar disease)	Yes	No
Allergic reactions that interfere with your breathing	Yes	No
Claustrophobia (Fear of closed-in places)	Yes	No
Trouble Smelling Odors	Yes	No
Have you ever had any of the following pulmonary or lung problems?		
Asbestosis	Yes	No
Asthma	Yes	No
Chronic Bronchitis	Yes	No
Emphysema	Yes	No
Pneumonia	Yes	No
Tuberculosis	Yes	No
Silicosis	Yes	No
Pneumothorax (collapsed lung)	Yes	No
Lung Cancer	Yes	No
Broken ribs	Yes	No
Any chest injury or surgery	Yes	No
Any other lung problem that you've been told about	Yes	No
Do you currently have any of the following symptoms of pulmonary or lung illness?		
Shortness of breath	Yes	No
Shortness of breath when walking fast on level ground or walking up a slight hill or incline	Yes	No
Shortness of breath when walking with other people at an ordinary pace on level ground	Yes	No
Have to stop for breath when walking at your own pace on level ground	Yes	No
Shortness of breath when washing or dressing yourself	Yes	No
Shortness of breath that interferes with your job	Yes	No
Coughing that produces phlegm (thick sputum)	Yes	No
Coughing that wakes you early in the morning	Yes	No
Coughing that occurs mostly when you are lying down	Yes	No
Coughing up blood in the last month	Yes	No
Wheezing	Yes	No
Wheezing that interferes with your job	Yes	No
Chest pain when you breathe deeply	Yes	No
Any other symptoms that you think may be related to lung problems	Yes	No
Have you ever had any of the following cardiovascular or heart problems?		
Heart attack	Yes	No
Stroke	Yes	No
Angina	Yes	No
Heart failure	Yes	No
Swelling in your legs or feet (not caused by walking)	Yes	No
Hear arrhythmia (heart beating irregularly)	Yes	No
High blood pressure	Yes	No
Any other heart problem that you've been told about	Yes	No
Have you ever had any of the following cardiovascular or heart symptoms?		
Frequent pain or tightness in your chest	Yes	No
Pain or tightness in your chest during physical activity	Yes	No
Pain or tightness in your chest that interferes with your job	Yes	No



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In the past two years, have you noticed your heart skipping or missing a beat	Yes	No
Heartburn or indigestion that is not related to eating	Yes	No
Any other symptoms that you think may be related to heart or circulation problems	Yes	No
Do you currently take medication for any of the following problems?		
Breathing or lung problems	Yes	No
Heart trouble	Yes	No
Blood pressure	Yes	No
Seizures	Yes	No
If you've used a respirator, have you ever had any of the following problems: (If you have never used a respirator, check the following section and go to next section)		
Eye irritation	Yes	No
Skin allergies or rashes	Yes	No
Anxiety	Yes	No
General weakness or fatigue	Yes	No
Any other problem that interferes with your use of a respirator	Yes	No
Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?		
Yes	Yes	No
The next section of questions below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.		
Have you ever lost vision in either eye (temporarily or permanently)	Yes	No
Do you currently have any of the following vision problems?		
Wear contact lenses	Yes	No
Wear glasses	Yes	No
Color blind	Yes	No
Any other eye or vision problem	Yes	No
Have you ever had an injury to your ears, including a broken ear drum	Yes	No
Do you currently have any of the following hearing problems?		
Difficulty hearing	Yes	No
Wear an hearing aid	Yes	No
Any other hearing or ear problem	Yes	No
Have you ever had a back injury	Yes	No
Do you currently have any of the following musculoskeletal problems?		
Weakness in any of your arms, hands, legs, or feet	Yes	No
Back pain	Yes	No
Difficulty fully moving your arms and legs	Yes	No
Pain or stiffness when you lean forward or backward at the waist	Yes	No
Difficulty fully moving your head up or down	Yes	No
Difficulty fully moving your head side to side	Yes	No
Difficulty bending at your knees	Yes	No
Difficulty squatting to the ground	Yes	No
Climbing a flight of stair or ladder carrying more than 25 lbs	Yes	No
Any other muscle or skeletal problem that interferes with using a respirator	Yes	No
Part B any of the following questions, and other questions not listed may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.		
In your present job, are you working at high altitudes (over 5000 feet) or in a place that has lower than normal amounts of oxygen	Yes	No
If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions	Yes	No
At home or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with	Yes	No



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hazardous chemicals		
If "yes," name the chemicals if you know them		
Have you ever worked with any of the materials, or under any of the conditions, listed below?		
Asbestos	Yes	No
Silica (e.g., in sandblasting)	Yes	No
Tungsten/Cobalt	Yes	No
Beryllium	Yes	No
Aluminum	Yes	No
Coal (for example mining)	Yes	No
Iron	Yes	No
Tin	Yes	No
Dusty environments	Yes	No
Any other hazardous exposures	Yes	No
If "yes," describe these exposures		
List any second jobs or side businesses you have		
List your previous occupations		
List your current and previous hobbies		
Have you been in the military services?	Yes	No
If "yes," were you exposed to biological or chemical agents (either in training or combat)	Yes	No
Have you ever worked on a HAZMAT team?	Yes	No
Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)	Yes	No
If "yes," name the medications if you know them		
Will you be using any of the following items with your respirator?		
HEPA filters	Yes	No
Canisters (for example, gas mask)	Yes	No
Cartridges	Yes	No
How often are you expected to use the respirator(s) (circle yes or no for all answers that apply to you)?		
Escape only (no rescue)	Yes	No
Emergency rescue only	Yes	No
Less than 5 hours per week	Yes	No
Less than 2 hours per day	Yes	No
2 to 4 hours per day	Yes	No
Over 4 hours per day	Yes	No
During the period you are using the respirator(s), is your work effort		
Light	Yes	No
If "yes," how long does this period last during the average shift: Hours Minutes		
Examples of light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines		
Moderate	Yes	No
If "yes," how long does this period last during the average shift: Hours Minutes		
Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in		



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urban traffic; standing while drilling, milling, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs) on a level surface.		
Heavy (above 350 kcal per hour)	Yes	No
If "yes," how long does this period last during the average shift: Hours Minutes		
Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 miles per hour; climbing stairs with a heavy load (50 lbs.).		
Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator?	Yes	No
Will you be working under hot conditions (temperatures exceeding 77 degrees F)?	Yes	No
Will you be working under humid conditions?	Yes	No
Describe the work you'll be doing while you're using your respirator(s)		
Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined space, life-threatening gases)		
Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s)		
Name of the first toxin		
Estimated maximum exposure level per shift		
Duration of exposure per shift		
Name of second toxic substance		
Estimated maximum level per shift		
Duration of exposure per shift		
Name of third toxic substance		
Estimated maximum level per shift		
Duration of exposure per shift		
The name of any other toxic substances that you'll be exposed to while using your respirator		

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Information on Medical Evaluations Provided to the Health Care Provider (PLHCP)

29 CFR 1910.134 (e)

Medical evaluation. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement to determine the employee ability to use a respirator.

(e)(1)

General. The employer shall provide a medical evaluation to determine the employee/student's ability to use a respirator, before the employee/student is fit tested or required to use the respirator in the workplace. The employer may discontinue an employee/student's medical evaluations when the employee/student is no longer required to use a respirator.

(e)(2)

Medical evaluation procedures

(e)(2)(i)

The employer shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.

(e)(2)(ii)

The medical evaluation shall obtain the information requested by the questionnaire in Section 1 and 2, Part A of Appendix C of this section

(e)(3)

Follow-up medical care

(e)(3)(i)

The employer shall ensure that a follow-up medical examination is provided for an employee/student who gives a positive response to any question among questions 1-8 in Section 2 Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination.

(e)(3)(ii)

The follow-up medical examination shall include any medical tests, consultations or diagnostic procedures that the PLHCP deems necessary to make a final determination.

(e)(4)

Administration of the medical questionnaire and examinations.

(e)(4)(i)

The medical questionnaire and examinations shall be administered confidentially during the employee/student's normal working hours or at a time and place convenient to the employee/student. The medical questionnaire shall be administered in a manner that ensures that the employee/student understands its content.

(e) (4) (ii)

The employer shall provide the employee/student with an opportunity to discuss the questionnaire and examination results with the PLHCP.

(e)(5)

Supplemental information for the PLHCP

(e)(5)(i)

The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee/student's ability to use a respirator:

(e)(5)(i)(A)

The type and weight of the respirator to be used by the employee/student;

(e)(5)(i)(B)

The duration and frequency of respirator use (including use for rescue and escape);

(e)(5)(i)(C)

The expected physical work effort;

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(e)(5)(i)(D)

Additional protective clothing and equipment to be worn; and

(e)(5)(i)(E)

Temperature and humidity extremes that may be encountered.

(e)(5)(ii)

Any supplemental information provided previously to the PLHCP regarding an employee/student need not be provided for a subsequent medical evaluation if the information and the PLHCP remain the same.

(e)(5)(iii)

The employer shall provide the PLHCP with a copy of the written respiratory protection program and a copy of this section.

Note to Paragraph (e)(5)(iii): When the employer replaces a PLHCP, the employer must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. However, OSHA does not expect employers to have employee/students medically reevaluated solely because a new PLHCP has been selected.

(e)(6)

Medical determination. In determining the employee/student's ability to use a respirator, the employer shall:

(e)(6)(i)

Obtain a written recommendation regarding the employee/students ability to use the respirator from the PLHCP. The recommendation shall provide only the following information:

(e)(6)(i)(A)

Any limitations on respirator use related to the medical condition of the employee/student, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee/student is medically able to use the respirator;

(e)(6)(i)(B)

The need, if any, for follow-up evaluations; and

(e)(6)(C)

A statement that the PLHCP has provided the employee/student with a copy of the PLHCP's written recommendations.

(e)(6)(ii)

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee/student's health at increased risk if the respirator is used, the employer shall provide a PAPR if the PLHCP's medical evaluation finds that the employee/student can use such a respirator; if a subsequent medical evaluation finds that the employee/student is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.

(e)(7)

Additional medical evaluations. At a minimum, the employer shall provide additional medical evaluations that comply with the requirements of this section if:

(e)(7)(i)

An employee/student reports medical signs or symptoms that are related to ability to use a respirator;

(e)(7)(ii)

A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee/student needs to be reevaluated;

(e)(7)(iii)

Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee/student reevaluation; or

(e)(7)(iv)

A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee/student.

	Health & Safety Manual	M & D Procedure No. 005 Page 1 of 4 Revision No:
	Hearing Conservation Program	

I. Purpose:

To establish a uniform policy, together with procedures that indicate specific requirements for operations sustaining 85 decibels or higher. To meet the requirements of OSHA 1910.95.

II. Policy

It is the policy of M & D Company, Inc. to ensure the safety and well being of its employees and subcontractors working in areas exceeding noise levels recommended by governmental standards.

Most M & D Company, Inc. employees and subcontractors provide work that requires intermittent exposure in a plant environment. Employees and subcontractors generally are not exposed to operations sustaining 85 decibels or higher on a daily basis. However, in the event that employees and subcontractors do sustain exposures on a daily and continuous basis, M & D Company, Inc. shall administer the Hearing Conservation Program.

All M & D Company employees and subcontractors will follow all plant procedures concerning Hearing Conservation when performing work on plant sites.

III. Responsibility

In order to ensure this policy is appropriately applied, the Health and Safety Administrator has been designated as Policy Coordinator.

IV. General Requirements

Hearing Conservation Programs

M & D Company, Inc. shall administer a continuing effective Hearing Conservation Program whenever employee noise exposures equal to or exceed an 8-hour time weighted average (TWA) of 85 decibels measured on the "A" scale.

Action Level

Whenever measured noise levels reach 85 decibels TWA in any work area, Hearing Conservation policies and procedures will be enacted.

Monitoring

Whenever sampling indicates that any employee's exposure may equal or exceed action levels outlined by this program, personal and area monitoring will be coordinated by supervision to ensure OSHA compliance.

Employee Notification

Each employee subjected to noise at or above the action level, will be notified of all results of monitoring.

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Audiometric Testing

Management shall establish and maintain an audiometric program and will make audiometric testing available to all employees affected by this policy prior to initial assignment and on an annual basis.

Hearing Protectors

Hearing protectors will be made available to all employees exposed to action levels or higher, adequate hearing protection will be replaced as necessary at no cost to the employee.

Hearing Protector Attenuation

Hearing protector Noise Reduction Ratings (NRR) will be evaluated for the specific noise environments in which the protectors will be utilized.

Training

Training will be made available to all employees affected and plant management will ensure employee participation in the program. Employees attend the Basic Orientation Plus training at Tennessee Valley Training Center, this training includes Hearing Conservation.

Recordkeeping

Accurate records shall be maintained of all employee exposure measurements required by this policy.

V. Specific Requirements

Monitoring:

Sampling Strategy

Because of worker mobility, if possible both area sampling (the stationary measurement of an area, usually for two or more hours) and personal sampling (the person wears the testing device) techniques will be utilized to obtain an accurate measure of sound in a given area. The following procedures will be utilized during sampling:

1) **Area Sampling**

Testing will be conducted during peak noise levels (full normal operation) for a representative area noise level.

2) **Personal Sampling**

The affected employee will physically wear the testing device to develop a representative employee TWA or Dose during times of peak noise levels. Personal testing will be conducted no less than 7 hours.

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Instrument

- 1) Calibration – Sampling devices will be calibrated annually to ensure measurement accuracy.
- 2) Measurement Scale – The sampling device will have the capability of measuring noise levels on the “A” scale (slow response).

Areas to be tested

There are no work areas at M & D Company, Inc. that exceed the OSHA limits.

Audiometric Testing Program

An audiometric testing program will be offered to affected employees whenever noise levels reach the Action Level. The following requirements are set forth for program implementation:

- 1) Provided at no cost to the employee.
- 2) A certified or licensed audiologist will conduct the audiogram.
- 3) A baseline audiogram will be obtained before an employee enters the workplace.
- 4) Annual audiograms will be required of all affected employees.

Audiogram Evaluation

- 1) Each employee audiogram shall be compared to that employee’s baseline audiogram to determine if a Standard Threshold shift of 10 decibels or more at the 2000, 3000, 4000 Hz range has occurred. This comparison shall be done by the testing agency.
- 2) If a standard threshold shift has occurred, a retest may be obtained within 30 days and the results can be considered as the annual audiogram.

Follow-up Procedures

If a comparison of the annual audiogram indicates a standard threshold shift and unless a physician determines the threshold shift is not work related, the following steps shall be taken:

- 1) The employee shall be refitted and retrained in the use of hearing protectors.

Revised Baseline Audiogram

An annual audiogram shall be substituted for the baseline audiogram when, in the judgment of the audiologist:

- 1) The standard threshold shift is persistent.

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- 2) The hearing threshold indicates significant improvement over the baseline audiogram.

Training

General Training on Hearing Conservation is received in the Basic Orientation Plus given by Tennessee Valley Training Center.

The following topical areas will be trained upon annually with all affected personnel:

- 1) Effects of noise on hearing
- 2) The purpose of hearing protectors
- 3) The advantages and disadvantages of hearing protection
- 4) Instructions on fitting, use, and care
- 5) The purpose of audiometric testing and explanations of the test procedures.

Recordkeeping

The following records will be maintained by M & D Company, Inc. Management:

- 1) All exposure measurements and representative measurements for each employee affected by the program.
- 2) Audiometric Test Data
- 3) Record Retention – All records will be retained at least for the following periods:
 - a) Exposure Measurements – two years
 - b) Audiometric Testing – Duration of employment

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 006 Page 1 of 3 Revision No:</p>
	<p align="center">Disciplinary Program</p>	

I. Purpose:

The following program has been developed to ensure fairness to all employees of M & D Coatings, Inc. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our success as an employer.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees of M & D Coatings, Inc.

III. General Requirements

First Written Warning

This is a warning issued to an employee for misconduct or poor work performance. The supervisor issuing the warning shall meet with the employee in private with the Director of Health and Safety to discuss the inappropriate behavior or performance. The supervisor shall make sure the employee fully understands policies and procedures. During this meeting, the employee and supervisor shall set objectives for improving the employee's work behaviors and performance. This first written warning will be documented on the employees personnel file for one year. After a period of one year, the warning will be marked as inactive but shall remain in the employee's personnel file.

Final Written Warning

If a problem persists, the supervisor with the consent of the Director of Health and Safety shall issue a final written warning. This warning further defines the problem and specifies the improvement that is required for correction. Failure to improve shall result in further disciplinary action, termination of employment. A copy of the final warning shall be given to the employee and a copy shall be placed in the employee's personnel file. After a period of one year, the warning will be marked inactive and will not be used for grounds of termination. However, the final warning will remain in the employee's file for the duration of employment.

Note: Some violations are severe enough to warrant a final warning without first issuing a first written warning. The following charts are examples but are not all-inclusive.

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Violation	Action 1 st offense	Action 2 nd offense	Action 3 rd offense
Work Quality	First Warning	Final Warning	Termination
Work Quantity	First Warning	Final Warning	Termination
Safety Rule Violation, Minor	First Warning	Final Warning	Termination
Leaving Job before shift end without permission	First Warning	Final Warning	Termination
Defacing Company Property	First Warning	Final Warning	Termination
Loitering	First Warning	Final Warning	Termination
Poor Attendance & Absenteeism	First Warning	Final Warning	Termination
Insubordination	Final Warning	Termination	NA
Sexual Harassment	Final Warning	Termination	NA
Fighting	Termination	NA	NA
Assault	Termination	NA	NA
Horseplay	Termination	NA	NA
Falsifying Time Cards/ Company Records	Termination	NA	NA
Theft	Termination	NA	NA
Gross Negligence	Termination	NA	NA
Sleeping during work hours	Termination	NA	NA
Violation of Substance Abuse policy	Termination	NA	NA
Safety Rule Violation, Major	Termination	NA	NA
Gambling	Termination	NA	NA
Carrying Firearms on the job	Termination	NA	NA

Suspension

An employee cannot be suspended as a disciplinary action. The employee can be suspended pending an investigation of the allegation that the employee has violated on the Immediate Termination items listed in the above chart. If the employee is cleared in the investigation, the employee may return to work with pay. If the employee is found to have committed the violation, termination is required.



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First Name	Middle Int.	Last Name	Job Title	Social Security Number
Disciplinary Action Taken	<input type="checkbox"/> First Warning <input type="checkbox"/> Termination <input type="checkbox"/> Final Warning <input type="checkbox"/> Suspension Pending Investigation Starting Date _____ Ending Date _____			
Reason For Discipline	<input type="checkbox"/> Absenteeism <input type="checkbox"/> Work Rules Violation <input type="checkbox"/> Safety Rule Violation <input type="checkbox"/> Tardiness <input type="checkbox"/> Failure to obey orders <input type="checkbox"/> Improper job attitude <input type="checkbox"/> Poor Work Performance <input type="checkbox"/> Dishonesty/Theft <input type="checkbox"/> Other _____			
Facts Or Events	Briefly state facts or events leading to the disciplinary action taken			
Required Improvement	Briefly state what employee must do to improve actions			
Time Allowed	<input type="checkbox"/> 30 days <input type="checkbox"/> 60 days <input type="checkbox"/> 90 days <input type="checkbox"/> _____ days <input type="checkbox"/> Not applicable			
Previous Warnings	<input type="checkbox"/> Yes <input type="checkbox"/> No If so, how long ago? _____ Is this warning documented? _____			
Employee Comments	Briefly state your comments			
Signatures	Employee _____ Site Manager _____ Supervisor _____ Health and Safety Administrator _____			

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 007 Page 1 of 5 Revision No:</p>
	<p align="center">Control of Hazardous Energy Program</p>	

I. Purpose:

M & D Coatings, Inc. Control of Hazardous Energy program establishes minimum requirements for the installation of energy-isolating devices. M & D Coatings, Inc will follow all lockout/tag out procedures for all of the plants with which the company conducts business. Lock out devices shall be used to ensure that the machine and/or equipment shall be locked out, tagged, and tried (L-T-T) before employees perform any servicing or maintenance activities on the machinery or equipment. Lock out will prevent unexpected energized, start-up, or release of stored energy that may result in personal injury. Any deviation from this procedure shall result in appropriate disciplinary procedures.

II. Scope:

All machinery and/or equipment shall be locked out, tagged, and tried (LTT) prior to performing any repair and maintenance work; to prevent accidental or inadvertent operation (start-up), when such operation could result in injury to personnel. Do not attempt to operate any switch, valve, or other energy-activating device when it has been locked out.

A multiple lockout device (hasp/scissors) will be used when the Lock Out/Tag Out – Try (LTT) procedure is used. The last hole in a multiple lockout device shall be reserved for another multiple lockout device.

These Procedures DO NOT Apply When:

Work is being performed on electrical extension cords and plugs when the plugs (cords) are disconnected. The employee performing the repair and maintenance to the electric plug, cord, or equipment (i.e. electric drill), for which exposure to unexpected energization or start-up is controlled by the unplugging of the equipment from the energy source; and by the plug's being under the exclusive control of the employee performing the servicing or maintenance.

III. Inspection:

The Supervisor, or designee, shall conduct periodic inspection to ensure that the LTT procedure and the requirements of the OSHA standard are being complied with. This shall be documented and forwarded to the Director of Health and Safety.

IV. Application:

When to Lock Out/Tag Out – Try

Whenever any equipment (electrical or mechanical) is shut down for maintenance, repair, cleaning, and/or inspection, it shall be locked out, tagged, and tried by the employee involved with the equipment to prevent exposure to electrical and/or mechanical hazards. Each lock placed must have a lockout tag indicating the name of the employee installing the lock and tag and the reason the lock is being installed.

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If more than one individual is required to lock out/tag out machinery and/or equipment, each employee shall install a lock. Each person who works on an electrical and/or mechanical system shall hang a lock and tag and remove them when they finish the work or leave for the day (at the end of their work shift). The lock and tag must be removed daily, at the end of each work shift, or the completion of the job.

What to Lock Out/Tag Out – Try

Any piece of mechanical and/or electrical equipment, piping, vessel, tank, etc. being worked on (repair, routine maintenance, etc.) in order to prevent accidental injury to employees.

A typical, but not all inclusive, list of items which should be locked out in order to be worked on would include: pumps, valves, motors, tanks, conveyors, gear trains, lathes, pullers, air systems, steam systems, hydraulic systems, and any other piece of equipment which, if started up or filled up, could cause injury to anyone working on the equipment. Types of energy to isolate include, but are not limited to, electrical, steam, gravity, hydraulic, spring, and pneumatic, pressure, etc.

IV. Sequence of Lock Out/Tag Out – Try Procedure:

Notification:

All people affected by the lockout must be trained to the awareness level and be notified. This includes the person on the machine, as well as anybody in the immediate area.

Those who Lock Out/Tag Out – Try must know the proper energy isolation points of lockout and the proper way to relieve all types of stored energy.

Machine or Equipment Shutdown:

The Plant Manager or his/her designee shall be responsible for verification that all hazardous energy is controlled. Equipment and Machinery shut down shall be performed or coordinated by plant maintenance in conjunction with the operator of the equipment/machinery.

Machine or Equipment Isolation:

The equipment/ machine operator shall operate the switch, valve, or other energy-isolating device(s), so that the machinery and/or equipment are isolated from its energy source(s).

Lockout Device Placement:

The authorized and trained person will lock out the energy isolation device with their issued lock. Locks and tags will be issued to affected employees and each lock and tag will be specific to each employee. No employee shall install and/or remove another employee's lock and/or tag. Employees may only remove their own lock and tag. Each lock has only one key available. A master key that unlocks all locks is strictly prohibited.

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Stored Energy:

Following the application of the Lock Out/Tag Out – Try procedure to energy-isolating devices, all potentially hazardous electrically or mechanically stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

Final Check:

After ensuring that no employees are exposed and, as a check to ensure that energy sources have been disconnected, operate (push) the start button or other operating control(s) to make certain the equipment will not operate (start). The equipment/machine operator shall complete this process.

V. Going Off Shift or the Completion of Work:

If the equipment is not left in operating condition at the end of the employee's work assignment (shift), each employee shall remove their lock and have it replaced with a M & D Coatings, Inc. Supervisor's lock and caution tag that indicates date, name of the employee and the reason why equipment shall not be operated.

VI. Restoring Machinery or Equipment to Normal Operation:

Machine or Equipment:

After the service or maintenance is done and before release from lockout, the employee shall check around the area, machine and/or equipment to ensure the components are operationally intact (walk the system down to ensure that nothing will hamper start-up and/or operation).

Employees:

- 1) The work area shall be checked to ensure that all employees have been safely positioned or removed from the area before start-up is begun.
- 2) Prior to starting up and prior to re-energizing machinery and/or equipment, all affected employees shall be notified.

Personal Lock Removal:

Only the employee who installed the lock will do LOCK AND TAG REMOVAL. Each employee is personally responsible for his or her own lock, tag, and key. When the employee's part of the job is completed, he/she is responsible for the prompt removal of his or her lock and tag. The employee who removed the last lock will then notify the supervisor/operator that the equipment is ready for operation.

VII. Emergency Lock and Tag Removal Procedure:

When an employee has left the job-site, or is no longer employed by M & D Coatings, Inc., or an emergency condition exists, the M & D Coatings, Inc. Project Manager or his/her designee shall walk the system to ensure that it is safe to remove the lock.

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The following procedure will be used when a lock is removed:

- 1) If the employee is on the job-site, the employee shall be located and shall remove the lock.
- 2) If it is verified that the employee has left the job-site, then the employee shall be called in to remove the lock.
- 3) If the employee cannot be located, the employee's Supervisor shall:
 - a) Check the work area to ensure that the job the employee was working on is complete.
 - b) Warn other employees in the area that the equipment involved will be put back into operation.
 - c) Secure the area to prevent entry of employees before starting equipment.
 - d) Complete the M & D Coatings, Inc. Lock Removal form & remove lock.

VIII. Lock Out/Tag Out – Try Violations:

The following Lock Out/Tag Out – Try violations will be subject to established disciplinary procedures:

- 1) Working on equipment that has not been properly locked out.
- 2) Putting on, or taking off, another employee's lock or tag.
- 3) Using lockout locks and tags for any purpose other than lock out.

IX. Training

M & D Coatings, Inc. employees will be provided general Lock Out/Tag out Training in accordance with the M & D Coatings, Inc. Control of Hazardous Energy Procedure prior to beginning work and as a specific job necessitates the need. Training shall include proper lock out/tag out procedure and machine specific procedure.

As additional hazards are identified or non-routine tasks are initiated, follow-up training will be provided to ensure employees are aware of the hazards and associated protective measures to control completely hazardous energies. This training program will involve a general classroom training session conducted during the orientation program and later detailed job specific training.

As additional hazards are identified, the training will be continued through safety meetings, toolbox safety topics, and small group discussions prior to conducting non-routine tasks.

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LOCK REMOVAL FORM

Whenever any safety lock is removed by any method other than by "normal means with a key under normal circumstances by the employee assigned to the lock", this form shall be completed and sent to the plant Health & Safety Department:

Individual Employee's Lock(s) and Tag(s) Removed:

Item(s) Locked Out:

Date Removed: _____ Time Removed: _____

Reason for Removing Lock(s):

Employee's Name and Title with Reference to lock being removed:

(List people and phone numbers called, by whom, etc.)

Method used to remove lock(s)

Method used and by whom to notify employee of removal of his/her lock(s)

Supervisor: _____

Date: _____

	<p style="text-align: center;">Health & Safety Manual</p>	<p>M & D Procedure No. 008 Page 1 of 7 Revision No:</p>
	<p style="text-align: center;">Confined Space Program</p>	

I. Purpose:

To establish a uniform policy, together with procedures that indicate the specific requirements for entry into confined spaces, and the development of control measures and procedures for control of the program.

II. Policy:

It is the policy of M & D Coatings, Inc. to avoid confined space entry. M & D Coatings, Inc. employees will be trained to recognize and avoid confined spaces. Confined space entry work should be engaged with M & D Coatings, Inc. management approval.

III. Scope:

This program sets the guidelines for confined space entry requirements for all employees when working in permit and non-permit required confined spaces.

IV. Definitions:

Air – The mixture of gases near the earth’s surface; its major constituents are 78 percent nitrogen, 21 percent oxygen, with the remaining percentages being traces of other gases and water vapor.

Administrative Controls – Any administrative measures taken to reduce or to control the exposure to hazards for employees entering confined spaces.

Atmospheric monitoring – The sampling for and measuring of atmospheric constituents within the confined space.

Asphyxia – suffocation from the lack of oxygen

Confined Space – any spaces large enough to bodily enter and perform work, any space that has a restricted means of entry/exit, and any space not designed for continuous employee occupancy.

Contaminant – A harmful, irritating, or nuisance material that is foreign to normal atmosphere.

Hazardous Environment – An environment in which airborne contaminants exceed permissible exposure limits, contain flammable or explosive mixtures above 10 percent of lower explosive limit, or in which oxygen deficient or oxygen enriched atmospheres exists.

Hot work – Any work involving burning, welding, riveting, or similar fire producing operations, as well as work, which produces a source of ignition such as drilling, abrasive blasting, and space heating.

Immediately Dangerous to Life or Health (IDLH) – A condition that can be reasonably assumed to cause death or irreversible health effects immediately upon exposure.

Inerting – Displacement of the atmosphere by a non-reactive gas (such as nitrogen) to such an extent that the resulting atmosphere is non-combustible.

Isolation – A process whereby the confined space is removed from service and completely protected against the inadvertent release of material by the following: blanking off, electrical lockout of all sources of power, and blocking or disconnecting all mechanical linkages.

Lower Explosive Limit – The concentration of flammable vapor or gas in air below which propagation of flame does not occur on contact with a source of ignition.

Oxygen Deficiency – An atmosphere where oxygen content is less than 19.5 percent by volume.

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Oxygen-Enriched Atmosphere – An atmosphere where the oxygen content is greater than 23.5 percent by volume.

Purging – The method by which gases, vapors, and other airborne impurities are displaced from a confined space.

Qualified person – One who is capable by reason of formal training and/or experience to perform specific tasks including: (a) objectively measuring and evaluating potential employee exposure to hazardous substances and/or conditions, and (b) identifying and taking the protective actions to correct and/or avoid such hazards.

Respirator – A piece of personal protective equipment designed to reduce the wearers' exposure to atmospheric contaminants.

Rescue Person – A person trained in emergency rescue procedures. This person is always required to be present at the IDLH concentration.

Confined Space Attendant – A person briefed in emergency rescue procedures assigned to remain on the outside of the confined space and to be in communication with those working inside the confined area. The attendant will have no other function but to ensure the safety and well being of personnel in confined space, and under no circumstance will enter the confined space unless or until he/she is relieved of his/her duty by someone equally qualified to take his/her place.

Permissible Exposure Limits – Established concentrations of airborne contaminants to which nearly all employees may normally be repeatedly exposed without suffering any adverse effects or illnesses.

Upper Explosive Limit – The concentration of flammable vapor or gas in air above which propagation of flame does not occur on contact with a source of ignition.

IV. Instructions and Requirements

General Requirements for Confined Space Entry

Entry into a confined space is carefully planned by creating a JSA/JHA prior to entry to establish adequate methods for system isolation, support equipment requirements, ventilation, entry and work techniques, emergency and rescue procedures, and availability of required personal protective equipment. The scope of the work to be performed, as well as protective measures that must be implemented to provide a safe work environment are identified and documented on a Confined Space Entry Permit by the responsible qualified person.

Pre-Entry Requirements

Before personnel are permitted to enter any confined space, a qualified person using appropriate instruments to determine the presence of concentrations of oxygen, toxic gases, and vapors tests the atmosphere within the space. This testing is to be performed by trained and qualified personnel who have completed training on the equipment he/she will be required to use in the testing for hazardous atmospheres. The testing device will be under current calibration and meet a "Field Calibration" using test gases prior to each daily use. If any type of hazardous atmosphere exists, steps will be taken to render the space safe for entry. Conditions will be maintained as near as possible to normal atmosphere. If this is not feasible, appropriate safety precautions shall be taken.

Emergency Entry

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M & D Coatings, Inc. employees shall not make entry into a confined space for rescue purposes unless properly trained, equipped, and designated as a member of the CSE Rescue Team.

Measurements, Evaluations, and Controls in Confined spaces

Appropriate control measures, such as SCBA, personal protective equipment, elimination of source of ignition, ventilation, and administrative control are taken when an evaluation indicates that the atmosphere in the confined space to be entered contains any of the following:

- A. A concentration of oxygen less than 19.5 percent or greater than 23.5 percent.
- B. Any measurable concentration of flammable vapor or gas.
- C. A concentration of toxic contaminants greater than 10 percent of the permissible exposure limit.
- D. Hazardous physical agents i.e., heat.
- E. Concentrations of combustible dusts.

Continuous and/or frequent testing or monitoring of the confined space atmosphere is carried out if hazardous environmental conditions could develop during the work period. Test results are noted on the Confined Space Entry Permit. The determination of whether the monitoring is continuous or frequent is made by a qualified person and specified on the permit. If oxygen deficiency is a potential hazard, the space is continuously monitored for oxygen deficient atmosphere unless a positive pressure breathing apparatus (SCBA) is utilized. If SCBA is used, see section of this procedure on "Entry into IDLH Areas." Tests of the confined space atmosphere are repeated as necessary or upon change in the conditions in the confined space.

Specific Requirements for Working in Confined Spaces

- A. Changes in configuration of any device set in place for the safety of the occupants of a confined space will not be removed for any reason until all persons within the confined space have been extracted, informed of the changes, and properly equipped.
- B. All sources containing the capability of releasing hazardous energy will be properly locked out, tagged out and tried before entry.
- C. Drains or overflow lines will be disconnected or isolated from any other system from which harmful materials could be transmitted back into the confined space.
- D. Warning signs or devices will be posted as needed near the entrance to confined spaces where work is being performed to keep unauthorized personnel out and to ensure that potentially hazardous independent operations are not started nearby.
- E. Fuel burning equipment is not used in confined spaces because of the risk of Carbon Monoxide Poisoning.

V. Ventilation

Ventilation is used to maintain flammable gases below 10% LEL, reduce environmental contaminants below PEL's, and to maintain oxygen levels between 19.5 and 23.5 percent. Where the use of ventilation is not practical, other equivalent means of protection is provided. Where flammable gases or vapors may be present, explosion-proof ventilation is used. Ambient air, not oxygen will be used to ventilate confined spaces.

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VI. Tools and Equipment

- A. Electrically operated tools, equipment, and atmospheric monitor used in environments where the possibility exists of flammable vapors, gases, or dusts, are of explosion-proof construction and listed and approved by a recognized testing laboratory for use in the environment considered. Non-sparking hand tools are used in these environments.
- B. Welding and cutting torches are not taken into confined spaces until it has been determined by test that flammable gases, vapors, liquids, or dusts are not present or that the concentration of these is not greater than 10% of the LFL of that material. Torches are removed immediately after use, during lunch, breaks, and at the end of shift. Compressed gas cylinders other than SCBA cylinders, are not taken into confined spaces.
- C. All combustibles in the vicinity of welding or cutting are removed or covered with fire retardant blankets. A fire watch will be provided.

VII. Entry into areas Immediately Dangerous to Life or Health

The only M & D Coatings, Inc. employee(s) that may enter an IDLH are CSE Rescue Team members for the purpose of rescue. The following precautions will always be taken by any person employed, contracted, or professional emergency personnel. Plant requirements must be met and approved of before entry can be made into an IDLH atmosphere.

- 1) Each person entering a confined space uses SCBA.
- 2) Each person entering a confined space wears a body harness and a lifeline secured to a fixed object. All products used for this step will meet if not exceed ANSI Standards for use of this equipment.
- 3) There will be one safety observer for each person who enters the IDLH confined space. The safety observer will ensure that no life-line becomes tangled or by virtue of position creates another hazard for the person of whom it is attached or to any other person in or around the confined space.
- 4) The M & D Coatings, Inc. Management with assistance from the Health & Safety Administrator will prepare an emergency plan.
- 5) Constant communication will be maintained at all times, by radio or by sight.

VIII. Pre-Entry Specific Requirements

All persons who enter a confined space will be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and the use of protective and emergency equipment required. All persons concerned are informed of and follow the confined space entry requirements for the specific confined space.

- 1) During all operations in a confined space, a safety observer or observers are stationed outside the confined space to provide constant observations and communications with the workers inside. The confined space attendant (if only one is present) does not enter the space until assistance has arrived. Prior to any entry, the attendant is responsible for knowing the location of the nearest telephone and will verify its operability or be equipped with a radio so that emergency rescue personnel may be summoned.

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- 2) The confined space attendant shall not be assigned duties or responsibilities which might divert their attention or interfere in any way with their primary function of assuring the safety and well-being of the person or persons entering or working in a confined space.
- 3) The responsible supervisor and or qualified person must take appropriate steps to ensure that employees do not enter confined spaces without his/her approval. His/her signature on the confined space entry permit will indicate this.
- 4) All cutting, welding grinding, open flame, and spark producing work activities are conducted following the permit and requirements established to control these activities.

IX. Emergency Procedures

A person showing the symptoms of exposure to a hazardous environment (i.e., mental confusion, euphoria, dizziness, nausea, headache, loss of consciousness, etc.) is immediately removed from the confined space, provided prompt first aid by a trained person, and provided medical assistance as soon as possible. All other persons working within the confined space will be removed and access to the confined space will be physically and administratively secured. If a person is incapacitated as a result of exposure to a hazardous environment, rescue operations will be started immediately.

X. Responsibilities

Responsible Supervisor

- 1) Complies with this procedure.
- 2) Designates confined space attendant and non-entry rescue personnel.
- 3) Verifies entry is safe and determines emergency plan.
- 4) Ensures the CSE permit is maintained at the point of entry and properly filled out.
- 5) Ensures all persons entering or exiting the confined space sign in or out on the CSE permit log sheet and are appropriately trained.
- 6) Responsible for ensuring personnel have necessary and appropriate PPE.
- 7) Where appropriate, ensure that an audible and visual alarm type oxygen and combustible gas analyzer is monitoring while CSE work is being performed.

The safety observer or attendant

- 1) May perform objective atmospheric testing.
- 2) Reviews "Procedures for Entry" for each confined space prior to entry.
- 3) Inform responsible party if any hazardous environments are present before entry.
- 4) Ensures testing equipment has current calibration status.
- 5) Instruct all employees in the potential hazards, entry and exit procedures, PPE, work practices, and emergency procedures to be used before entry.
- 6) Calls for evacuation of the confined space in the event a hazardous environment is created during occupation of the space.
- 7) Returns CSE permit upon completion of work in the confined space.

Entrants

- 1) Comply with this procedure.
- 2) Sign in and out of confined spaces.

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- 3) Follow instructions and procedures.

XI. Hazardous Conditions

Hazards commonly associated with confined space entry include asphyxiating gases or vapors; toxic gases, vapors, fumes, or dusts; flammable vapors or gases; temperature extremes; pressure changes; oxygen deficiency; mechanical and electrical hazards; and flooding of spaces (engulfment) with liquids or solids.

Injury within confined spaces is most likely to occur from, but not inclusive to the following:

- 1) Direct contact with corrosive or sensitizing chemicals such as acids, caustics, or oxidizing agents.
- 2) Fire or explosion occurring from the presence of flammables and an ignition source. Enriched oxygen atmospheres increase this hazard immensely.
- 3) Oxygen deficiency from the release of gases or the presence of oxygen consuming substances combined with the lack of proper ventilation.
- 4) Insufficient, faulty, or improperly used PPE.
- 5) Inadvertent activation of mechanical equipment.
- 6) Electrical shock from portable lights, tools, and other electrical equipment.
- 7) Physical hazards such as slipping or tripping.
- 8) Falls through or from upper levels, stairs or ladders.
- 9) Contact with toxic substances from inhalation or direct contact.
- 10) Heat stress resulting in heat related illness.

XII. Sources of Ignition

Sources of ignition of flammable vapors, gases, or dusts include, but are not limited to the following:

- 1) Non-explosion proof equipment
- 2) Ungrounded electrical equipment
- 3) Welding, cutting, and brazing operations
- 4) Static electricity
- 5) Friction or impact
- 6) Grinding operations

XIII. Communication

Having the ability to communicate is imperative in any confined space through normal operations or in times of emergency. The following procedures shall be utilized as means of communications during confined space entry and/or during times of emergency.

Communication shall be established using audible, visual (hand signals) or radio communication means to communicate with the entrant of the confined space. The O-A-T-H (rope tug signals) can also be used if personnel are properly trained. A means of communication will be established before entry.

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XIV. Training

Supervisors, entrants and attendants shall be appropriately trained in the procedures of confined space entry outlined in 1910.146. These training records shall be maintained and made available for review to the Assistant Secretary of Labor upon request.

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	<p align="center">Electrical Safety Program</p>	

I. Purpose:

This procedure gives the requirements to minimize unsafe conditions, involving electrical equipment and tools, including faulty insulation, improper grounding, loose electrical connections defective parts, ground faults in equipment, and unguarded live electrical parts.

II. Scope

This procedure applies to all affected M & D Coatings, Inc. employees.

I. Requirements

General

- 1) Each plant must provide a safe place to work for every employee, which includes protecting the employee from electrical hazards such as fault currents to ground.
- 2) When an electrical ground fault occurs, the current flows through the path having minimum impedance to ground. It is imperative that an employee does not inadvertently become the conductor of the current.
- 3) Two approved methods of protecting the worker from a ground fault, in addition to other requirements for equipment-grounding conductors, are:
 - a) Use of ground fault circuit interrupters (GFCI)
 - b) An assured equipment grounding program (AEGP)

Ground Fault circuit Interrupter (GFCI)

- 1) Attention shall be given to proper installation and maintenance of GFCIs within the requirements of the National Electric Code (NEC). The system shall be tested prior to being activated into service.
 - a) In purchasing GFCIs, the specifications shall state that GFCIs shall conform to Underwriters Laboratories Standard 943, Ground Fault Circuit Interrupters.
 - b) Each circuit protected by a circuit breaker GFCI requires its own neutral conductor.
 - c) Receptacle-type GFCIs may be used on common neutral systems and where receptacles are more than 250 feet from the breaker.
 - d) GFCIs are to be installed on circuit breakers used for construction power.

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Assured Equipment Grounding Program (AEGP)

- 1) Wherever possible, GFCIs are to be used instead of an assured grounding program.
- 2) The major aspects in establishing an effective program are:
 - a) To establish and implement a program to reduce the potential of injuries caused by electric shock from cord sets, receptacles, and equipment connected by cord and plug.
 - b) To meet the requirements of local, state, and federal rules and regulations.
 - c) To prevent injury from a ground fault, the integrity of the grounding system must be maintained at all times. To achieve this, a program of inspection and testing shall be implemented.
 - d) The Maintenance Supervisor or his/her designee shall inspect and test each cord set, electric tool, piece of electrical equipment, and receptacle:
 - ❖ Before first use
 - ❖ Before equipment is returned to service following repairs
- 3) The quarterly inspections shall be the responsibility of the Maintenance Supervisor or his/her designee. Each cord set, electric tool, receptacle, and piece of electrical equipment shall be tested to ensure a continuous ground circuit, and the equipment grounding conductor is connected to its proper terminal. The testing equipment shall be capable of testing for ground conductor continuity and resistance line fault and proper connection of conductors to terminals. All testing equipment shall also be tested each month. These results shall be documented, and shall be maintained for review for a minimum of one year from the date of the test.
- 4) Receptacles that are a permanent part of the wiring of permanent buildings are excluded from the monthly testing and inspection requirements of this procedure. However, after installation and before initial use, each receptacle shall be tested.
- 5) **NOTE:** If permanent receptacles(s) of permanent buildings, trailers, change shack, butler-type buildings, or similar structures are being used to support construction activities, a ground fault circuit interrupter device must be employed in conjunction with each cord set, electric tool, or piece of electrical equipment.
- 6) Daily, each cord set, electric tool, or piece of electrical equipment shall be visually inspected by the user before use for signs of damaged. These items shall be inspected for signs of frayed or damaged insulation, crushed cable, loose or missing covers or screws, missing ground prongs on plugs, and other similar substandard conditions. Equipment found to be damaged or defective shall not be used until repaired. Equipment suspected of being damaged or defective shall be inspected and tested prior to use.

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- 7) To verify inspection and testing, a piece of color-coded tape or an ID tag shall be affixed to each item inspected. Four colors shall be used.

The color code system is as follows:

Quarterly
 January—March.....Red
 April—June.....White
 July—September.....Blue
 October-December.....Green

- 8) Any electric tool, cord set, or piece of electrical equipment bearing expired inspection tape/tag or no inspection tape/tag shall be considered defective and is not to be used until it is inspected.
- 9) Only inspectors are authorized to remove inspection tape/tags. Unauthorized removal or defacing of inspection tape/tags shall be cause for disciplinary action.

Temporary Construction Power

- 1) All construction distribution panels shall have no exposed openings into the energized buss bar. This includes exposed openings for breakers, conduits, or any other opening.
- 2) Qualified electricians shall install all temporary construction power.
- 3) All breakers, control switches, knife switches, or pull boxes shall be labeled to indicate what they energize and their voltage rating.
- 4) All disconnects shall have a clear, unblocked path 3 feet wide or more in front of the disconnect to allow for ready access.
- 5) When working under overhead power lines, vehicles and heavy equipment should maintain a reasonable distance of 10 feet or more from these power lines. This clearance will be strictly enforced in order to prevent potential electrical hazards.
- 6) Non-conductive material should be used whenever working on electrical projects. This non-conductive material includes appropriate clothing, rubber-soled shoes, hard hats, as well as other appropriate PPE. In addition, ladders with non-conductive side rails (fiberglass) shall be used in and around electricity.

Extension Cords (Flexible)

- 1) All extension cords shall be marked as SJ, SJO, SJT, SJTO, S, SO ST, or STO (14/3 or larger and no flat type) as required by OSHA 29 CFR 1926.

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- 2) All splices shall retain the insulation, other sheath properties, and original manufacturer's usage characteristics of the cord being spliced.
- 3) Extension cords shall not be run through windows, doorways, walls, or similar openings unless they are protected from damage.
- 4) When cords are to be used in wet areas or exposed to the natural elements, they shall have all connectors approved and designed for the location.
 - a) No receptacle or cord shall accept different voltage attachment plugs.
 - b) Extension cords shall be protected from damage.
- 5) Extension cords shall be inspected before use. Damaged cords shall not be used.
- 6) All extension cords used with portable electric tools and appliances shall be of a three-wire type.

II. Training

- 1) M & D Coatings, Inc. employees that will be working specifically on electrical projects will be provided Electrical Safety training in accordance with the M & D Coatings, Inc. Electrical Safety Program prior to beginning work. Electrical Safety Training shall include the precautions necessary in order to be deemed "qualified" by the M & D Coatings, Inc. Any M & D Coatings, Inc. employee that has not had training in electrical safety will be deemed "unqualified" and will not be permitted to conduct electrical work as part of their job. Qualified individuals are the only ones authorized to conduct installation of temporary or permanent power as part of their job description. This training will be specific for the individual tasks to be completed.
- 2) This training program will involve a classroom training session conducted during the orientation program. As additional hazards are identified or non-routine tasks are initiated, follow-up training will be provided to ensure employees are aware of the electrical hazards and associated protective measures and precautions.
- 3) As additional electrical hazards are identified, the training will be continued through safety meetings, toolbox safety topics, and small group discussions prior to conducting non-routine tasks.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 010 Page 1 of 4 Revision No:</p>
	<p align="center">Fall Protection Program</p>	

I. Purpose:

M & D Coatings, Inc. Fall Protection Program establishes minimum requirements for establishing guidelines for using fall protection to protect employees from potential fall hazards.

- ❖ M & D Coatings, Inc. requires 100% fall protection when an employee is exposed to a potential fall of four (4) feet or more above grade level (floor or ground).
- ❖ All employees will be instructed by their supervisor on the type of fall protection required on their particular job assignment.
- ❖ Full body harnesses are required for fall arrest systems.
- ❖ Ladders shall be secured with rope, wire or other means immediately after their placement.

II. Scope

This program sets the guidelines for fall protection requirements for all employees when working or traveling at elevations of 4 feet or more.

III. Definitions

100 Percent Fall Protection – When employee's feet are 4 feet or more above a lower level, the worker shall be protected from the possibility of a fall at all times

100 Percent Tie Off – Employees working in areas where the use of safety harnesses with a lanyard/automatic retracting lifeline is required shall tie off at all times.

Anchorage – A secure point of attachment for lifelines, lanyards, or deceleration devices, which is capable of withstanding a force of 5000 lb per person.

Full body harness – a configuration of connected straps to distribute a fall arresting force over the thighs, shoulders, and pelvis with provisions for attaching a lanyard, lifeline, or deceleration devices.

Competent person – an individual knowledgeable of fall protection equipment, including manufacturer's recommendations and instructions for proper use, inspection, and maintenance. This individual should also be capable of identifying existing and potential fall hazards and have the authority to take prompt corrective actions.

Deceleration Device – Any mechanism, such as a rip-stitch lanyard, automatic retracting lifeline (yo-yo) or rope grab, which serves to dissipate more energy during fall arrest than a standard line or strap.

Fall Exposure – The potential to fall, (unprotected edge of a floor, roof, or scaffold without guardrails).

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Lanyard – A flexible line of webbing, rope or cable used to secure a full body harness to a lifeline or an anchorage point.

Leading Edge – An unprotected side or edge that is not actively and continuously under construction.

Personal Fall Arrest System (PFAS) – A system used to arrest an employee in a fall from a working level. Consists of an anchorage, connectors, and body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

Snaphook – a connector comprised of a hook-shaped member with normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object.

IV. Acceptable Methods of Fall Arrest/Restraint

M & D Coatings, Inc. employees shall be responsible for complying with the methods set forth herein. Methods of fall arrest/restraint acceptable include:

- ❖ Full body, Class III, safety harnesses with six-foot lanyard/automatic retracting lifeline (yo-yo) clipped into D-ring and to an anchorage point capable of holding 5000 pounds of weight. Employees who are expected to move from place to place while elevated will be required to have two lanyards (or split/double-legged) attached to their harness so they can cross areas while always being secured.
- ❖ Where employees are expected to walk back and forth in elevated areas, static lines (horizontal lifelines) must be capable of meeting the 5000 pounds of weight per employee attached. Criteria for erecting and inspecting static lines will be taken directly from the OSHA standard for fall protection.
- ❖ Articulating lifts and other vehicle-mounted lifts may be utilized to reach high areas safely. Employees in the lifts must have full body harnesses attached to the lift at all times. Employees will not be allowed to stand on the rails.
- ❖ Openings in flooring, decking, and roofs shall be protected by standard guardrails or by floor covers made of ¾ inch plywood. If there will be vehicular traffic of any kind, the covers will support at least twice any intended load (as a minimum it will be doubled ¾ inch plywood). The cover will be labeled and fastened down to prevent movement.
- ❖ Scaffolds shall only be used for fall protection when the scaffolds are built to within 100% compliance with OSHA standards. If a scaffold is less than totally compliant fall protection is required.
- ❖ **NOTE: Fall arrest systems may need to be utilized when an employee is actually less than four feet above the nearest work surface. For example; an employee can be on the forth rung of a tied-off ladder right next to a perimeter guardrail on an**

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elevated floor. This employee must use fall protection because he/she could fall over the guardrail.

V. Employee Training of Fall Protection Systems

M & D Coatings, Inc. shall provide training to each employee that could be exposed to a fall hazard. The training will enable employees to recognize the hazards of falling and the procedures that must be followed to eliminate those hazards. The supervisor will assure that all employees have been trained as necessary, in the following areas:

Nature of fall hazards

- 1) Correct procedure for erecting, maintaining, disassembling, and inspecting the fall protection to be used
- 2) The operation and use of fall protection systems
- 3) Limitations of mechanical equipment (Retractable lifelines)
- 4) Correct procedures for storage of equipment
- 5) OSHA CFR 1926 Subpart M Standards

Retraining will be conducted when:

- 1) Changes in the type of fall protection systems or equipment used
- 2) Demonstration of behaviors indicate retraining is necessary
- 3) Every three years at a minimum

VI. Inspection

Each employee shall be responsible for inspection of all equipment and materials to be utilized in fall protection/restraint systems. Employees shall be trained to inspect fall protection equipment and materials before each use. The inspection shall include checking for damage, mildew, and wear. Any defective or potentially defective items shall be sent out for qualified repair or shall be destroyed and properly disposed of.

The individuals who will be using the systems shall inspect static lines prior to use. The workers shall be secured against falling during the inspection. A competent person shall be assigned to inspect all fall protection systems quarterly. The inspections shall be documented. Any defects found in any fall protection systems shall be repaired prior to use.

Body Harness Inspections

Inspection of body harnesses will be done thoroughly, paying close attention to the following items:

- 1) Buckles
- 2) D-rings
- 3) Webbing (must be free of frays, cuts, tears or broken fibers)
- 4) Stitching
- 5) Brads
- 6) Presence of manufacturer's date, tag, and serial number
- 7) Chemical & Thermal damage

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Lanyard (Connector) Inspections

- 1) Stitching
- 2) Nylon chemical & thermal damage
- 3) Locking Snap Hooks
- 4) Deceleration device

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	<p align="center">Fire Prevention Program</p>	

I. Purpose:

The following program has been developed to ensure the health and safety of employees working in areas where flammable and combustible materials are located. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health and safety process.

II. Scope:

In order to ensure this program is properly implemented, the Health & Safety Administrator has been designated as policy administrator. This procedure applies to all affected employees who work for M & D Coatings, Inc.

III. Fire Protection and Prevention (Subpart F):

Fire Prevention

- 1) All combustible scrap, debris, and waste materials (oily rags, etc.) must be stored in approved covered metal receptacles and removed from the work site promptly (daily). Proper storage to minimize the risk of fire, including spontaneous combustion must be practiced. Smoking shall be prohibited in the vicinity of operations, which constitute a fire hazard and shall be conspicuously posted: "No Smoking or Open Flame."
- 2) Internal combustion engine powered equipment shall be located so that the exhausts are well away from combustible materials.
- 3) Combustible materials shall be piled with due regard to the stability of piles and in no case higher than 20 feet. No combustible material shall be stored outdoors within 10 feet of a building or structure. Consult NFPA tables for interior storage information.
- 4) In outdoor storage areas, portable fire extinguishing equipment, suitable for the fire hazard involved, shall be provided at convenient, conspicuously accessible locations in the yard area. The extinguishers shall be placed so that maximum travel distance to the nearest unit shall not exceed 100 feet.
- 5) A barrier having a fire resistance of at least one hour shall segregate non-compatible materials, which may create a fire hazard.
- 6) Fire extinguishers are selected for the types of materials and placed in areas where they are to be used. These fire extinguishers are classified as follows:
 - a) Class A – Ordinary combustible materials fires.
 - b) Class B – Flammable liquid, gas, or grease fires.
 - c) Class C – Energized-electrical equipment fires.
 - d) Class D – Metal Fires
- 7) Appropriate fire extinguishers must be mounted within 75 feet of outside areas containing flammable liquids and within 10 feet of any inside storage area for such materials.

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Monthly visual inspections should be performed. All extinguishers must be serviced, maintained, and tagged at intervals not to exceed one year by a trained professional. .

- 8) Extinguishers should be placed free from obstructions or blockage. All extinguishers must be fully charged and in their designated places (mounted with top of extinguisher no higher than 5 ft.) unless in use.
- 9) Storage tanks should be adequately vented to prevent to development of excessive vacuum or pressure as a result of filling, emptying, or atmosphere temperature changes.

Flammable and Combustible Liquids

- 1) Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids.
- 2) No more than 25 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet. No more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one cabinet. No more than three storage cabinets may be located in a single storage area.
- 3) Flammable liquids shall be kept in closed containers when not actually in use.
- 4) Conspicuous and legible signs prohibiting smoking shall be posted in service and refueling areas.

Heating Devices

- 1) Fresh air shall be supplied in sufficient quantities to maintain the health and safety of workers.
- 2) Solid fuel salamanders are prohibited in buildings and on scaffolds.

Training

- 1) All M & D Coatings, Inc. employees expected to possibly use a fire extinguisher must receive annual training according to the requirements of 1910.157(g).

Fire Extinguishers (1910.157 (f))

- 1) M & D Coatings, Inc. shall assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record shall be available upon request.
- 2) M & D Coatings, Inc. shall also assure that stored pressure dry chemical extinguishers that require a 12-year hydrostatic test are emptied and subject to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable

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containers are exempt from this requirement. When recharging or hydrostatic testing is performed; the 6-year requirement begins from that date.

- 3) Carbon Dioxide extinguishers require hydrostatic testing every 5 years or when showing evidence of corrosion.

Daily pre-shift inspection is an OSHA requirement. Operators must complete this form and file through the appropriate supervisor.

**Forklift Operator's
Daily Check List**

Date _____ Truck Number _____ Department _____ Shift _____	Operator _____ Model Number _____ Serial Number _____ Hour Meter Reading _____	Record of Fluid Added Fuel _____ Engine Oil _____ Radiator Coolant _____ Hydraulic Oil _____
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SAFETY AND OPERATIONAL CHECKS (Prior to each shift)

Have a **qualified** mechanic correct all problems.

	O.K.(✓)	Need Maintenance
Fuel Odor Present?		Do not start truck Report to your supervisor immediately.
Leaks -- Fuel, Hydraulic Oil, Engine Oil, or Radiator Coolant		
Tires -- Condition and Pressure		
Forks, Top Clip Retaining Pin and Heel -- Condition		
Load Backrest Extension -- Attached		
Hydraulic Hoses, Mast Chains and Stops -- Check Visually		
Finger Guards -- Attached		
Overhead Guard -- Attached		
Propane Tank (LP Gas Trucks) -- Rust, Corrosion, Damage		
Safety Warnings -- Attached (Refer to Parts Manual For Location)		
Engine Compartment:		
Battery -- Water/Electrolyte Level and Charge		
Hydraulic Tank Fluid Level -- Dipstick		
Transmission Fluid Level -- Dipstick		
Engine Oil Level -- Dipstick		
All Engine Belts -- Functioning Smoothly		
Engine Air Cleaner -- (Squeeze Rubber Dirt Trap or Check the Restriction Alarm, If Equipped)		
Fuel Sedimentor (Diesel)		
Radiator Coolant Level (Recovery Bottle)		
Operator's Compartment:		
Operator's Manual in Container		
Capacity Plate Attached -- Information Matches Model, Serial Number and Attachments		
Hood Latch -- Adjust and Fasten		
Seat Belt, Buckle and Retractors -- Functioning Smoothly		
Brake Fluid -- Check Level		
Controls (Turn Truck On) Unusual Noises Must Be Investigated Immediately:		
Accelerator Linkage -- Functioning Smoothly		
Parking Brake -- Functioning Smoothly		
Service Brake -- Functioning Smoothly		
Steering Operation -- Functioning Smoothly		
Drive Control -- Forward / Reverse -- Functioning Smoothly		
Tilt Control -- Forward and Back -- Functioning Smoothly		
Hoist and Lowering Control -- Functioning Smoothly		
Attachment Control -- Operation		
Horn -- Functioning		
Lights -- Functioning		
Cab, If Equipped -- Heater, Defroster, Wipers -- Functioning		
Gauges:		
Ammeter -- Operating		
Engine Oil Pressure -- Functioning		
Hour Meter -- Functioning		
Fuel Level -- Functioning		
Temperature -- Functioning		
Instrument Monitors -- Functioning		

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	<p align="center">Forklift Program</p>	

I. Purpose:

In accordance with OSHA, the following program has been developed to ensure the health and safety of employees working with Forklifts. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health and safety process.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as policy administrator. This procedure applies to all employees who work on forklifts.

III. General Requirements

Industrial Trucks-Forklifts (29 CFR 1910.178)

- 1) Only trained personnel will be allowed to operate industrial trucks. Each forklift operator will have proof of training (i.e., wallet card) readily available for review at all times.
- 2) Each industrial truck must have a warning horn, whistle, gong, or other device which can be clearly heard above the normal noise in the area where operated. Before using a forklift, check that the brakes on each industrial truck are capable of bringing the vehicle to a complete and safe stop when fully loaded. The parking brake must effectively prevent the vehicle from moving when unattended.
- 3) When an industrial truck operates in areas where flammable gases, vapors, combustible dust, or ignitable fibers may be present in the atmosphere, the vehicle must be approved for such locations with a tag showing such approval posted on the vehicle itself.
- 4) Industrial trucks with internal combustion engines, operated in buildings or enclosed areas, should be carefully checked to ensure that the operation of the vehicle does not cause harmful concentration of dangerous gases or fumes such as carbon monoxide.

General Rules applicable of Fork Lifts

- 1) Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- 2) No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- 3) Unauthorized personnel shall not be permitted to ride on powered industrial trucks.
- 4) The employer shall prohibit arms or legs from being placed between the uprights of the mast or outside the running lines of the truck.
- 5) When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels

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shall be blocked if the truck is parked on an incline. A powered industrial truck is unattended when the operator is 25 ft. or more away from the vehicle, which remains in his view or whenever the operator leaves the vehicle and it is not in his view. When the operator of an industrial truck is dismounted and within 25 ft. of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.

- 6) A safe distance shall be maintained from the edge of ramps, excavations or platforms. Edge guards should be installed where feasible as added precaution.
- 7) There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- 8) An overhead guard (FOPS) shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.
- 9) A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- 10) Only approved industrial trucks shall be used in hazardous locations.
- 11) Fork trucks should not routinely be used for transporting personnel from one level to another. Where appropriate, the only exceptions to this rule are if the following additional precautions are taken for the protection of personnel being elevated (consult the HR/Safety Department for additional guidance and reference OSHA CPL):
 - a) Use of an approved safety platform firmly secured to the lifting carriage and/or forks.
 - b) Means shall be provided whereby personnel on the platform can shut power to the truck.
 - c) Such protection from falling objects, as indicated necessary by the operating conditions shall be provided.

Rules to be followed while Traveling

- 1) All traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.
- 2) The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
- 3) Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- 4) The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

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- 5) Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.
- 6) Grades shall be ascended or descended slowly. When ascending or descending grades in excess of 10%, loaded trucks shall be driven with the load upgrade. On all grades the load and load engaging means shall be tilted back if applicable, and raised on as far as necessary to clear the road surface.
- 7) Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- 8) Stunt driving and horseplay shall not be permitted.
- 9) Dock board or bridge plates, shall be properly secured before they are driven over. Dock board or bridge plates shall be driven over carefully and slowly and their rated capacity never exceeded.
- 10) While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

Rules to be followed while Loading

- 1) Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads, which cannot be centered.
- 2) Only loads within the rated capacity of the truck shall be handled.
- 3) The long or high (including multiple-tiered) loads, which may affect capacity, shall be adjusted.
- 4) Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.
- 5) A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.

Rules to be followed during Operation

- 1) If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.
- 2) Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

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- 3) Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- 4) No truck shall be operated with a leak in the fuel system until the leak has been corrected.
- 5) Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.
- 6) Fork trucks cannot be pushed. If it becomes necessary to move a stalled lift truck, it must be pulled. In addition, fork trucks cannot be used to push other vehicles.

Training

- 1) Guidelines outlined in the OSHA standard 1910.178 (I) will be followed for operator training, evaluation and retraining.

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	<p align="center">Bloodborne Pathogens (BBP) Program</p>	

I. Purpose:

In accordance with the OSHA Bloodborne Pathogen Standard, 29 CFR 1910.1030, the following exposure control plan has been developed

M & D Coatings, Inc. has no employees occupationally exposed to blood and other bodily fluids. All M & D Coatings, Inc. locations are within a 10 mile radius of a Hospital.

Please See Section IV. Exposure Determination.

M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health & safety process. M & D Coatings, Inc. will follow all plant procedures regarding Bloodborne Pathogens while working on their Plant Sites.

M & D Coatings, Inc. and all subcontractors will follow all Bloodborne Pathogen Procedures to meet the intent of OSHA Standard, 29 CFR 1910.1030.

M & D Coatings, Inc. will initiate the entire Bloodborne Pathogen Program when deemed necessary by management or when employees have been evaluated and it has been documented that M & D Coatings, Inc. has employees who are occupationally exposed.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees and subcontractors who could possibly contact any bodily fluids.

III. Definitions

Blood – human blood, human blood components and products made from human blood.

Bloodborne Pathogens – pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated – the presence or reasonable anticipated presence of blood or other potentially infectious materials on an item or a surface.

Contaminated Sharps – a contaminated object that can penetrate the skin including, but not limited to, needles or broken glass.

Disposal – the act of removing potentially infectious waste from the area originally located and removal from the worksite or location.

Engineering Controls – any physical control other than administrative that has been initiated for the protection of employees from potentially infectious materials.

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Exposure (potential exposure) – the act of contacting potentially infectious materials with or without the use of personal protective equipment.

Universal Precautions – any bodily fluid or material such as displaced skin from the human body will be treated as infectious waste.

Waste – any material that has been liberated from the confines of the human body and has the need for disposal.

IV. Exposure Determination

M & D Coatings, Inc. management or designee will perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination will be made without regard to the use of personal protective equipment. This exposure determination will include all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency. Using data collected from various work history, the determination is made that there are no job classifications are in this category.

No First Responders have been designated at M & D due to the fact that all locations are near a medical facility.

LOCATIONS OF Medical Facilities

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V. Compliance Methods

Universal Precautions will be observed at any worksite of M & D in order to prevent contamination with blood or other potentially infectious materials. All blood or other potentially infectious materials will be considered infectious regardless of perceived status of the source of the individual and/or source of body fluids.

Engineering & Work Practice Controls

Engineering and work practice controls will be utilized to minimize exposure to employees at this worksite. Where occupational exposure remains after institution of these controls, personal protective equipment shall be utilized.

At this plant the following engineering and work practice controls will be utilized:

- 1) Containers for any sharp that may present a hazard.
- 2) Infectious materials cleaning kits will be provided for persons cleaning potentially infectious material other than their own body fluid.
- 3) OSHA Standard 1910.1030 states that all body fluids are considered infectious. OSHA takes a universal approach to the spread of bloodborne pathogens. M & D Coatings, Inc. must comply with this standard.
- 4) Each employee must take the necessary precautions to prevent any bodily fluid from potentially being exposed to another worker at M & D Coatings, Inc. worksites. Training will be given to ensure each employee understands the hazards of bloodborne pathogens.

The above controls will be examined and maintained on a regular schedule. The schedule for reviewing the effectiveness of the program, engineering controls, and work practices will be reviewed at least annually or whenever M & D Coatings, Inc. feels the necessity to review the program for possible additions.

Hand Washing Facilities

Hand washing facilities are also available to the employees who incur exposure to blood or other potentially infectious materials. OSHA requires these facilities be readily accessible after incurring exposure. At each worksite, the stations will be covered during familiarization with the worksite grounds.

Containers for Sharps

M & D Coatings, Inc. has no occupationally exposed employees or employees utilizing needles.

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Contaminated Equipment/Areas

Equipment, which has become contaminated with blood or other potentially infectious materials, will be examined and disinfected with a 10 percent bleach solution. The proper personal protective equipment will be utilized during this procedure.

Bandages and Small-Contaminated Materials

Bandages and other small contaminated items can and will be placed into biohazardous waste bags/containers. Proper personal protective equipment will be utilized during this procedure.

Contaminated Waste Disposal

All contaminated waste will accompany personnel if transferred to a medical facility (i.e. occupational medicine clinic, local hospital, etc.) where arrangements can be made for disposal of the waste.

Personal Protective Equipment

All personal protective equipment used at this worksite will be provided without cost to the employees. Personal protective equipment will be chosen based on anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or to reach employees clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of the time, which the protective equipment will be used.

The following equipment (BBP kit) will be provided to the employees at no cost if employees are ever deemed occupationally exposed:

- | | |
|------------------------|----------------------------|
| Disposable latex glove | Disposable facemask |
| Disposable apron | Red biohazard plastic bags |
| Disposable goggles | Decontamination products |

Hepatitis B Vaccine

All employees that have been identified by M & D Coatings, Inc. as having exposure to blood or to other potentially infectious materials will be offered at no charge to them the hepatitis-b vaccine. The vaccine will be offered within 24 hours after potential exposure to a potentially infectious bloodborne pathogen. The employee may turn down the vaccine but only in writing, (a statement will be provided). If the employee has already had the vaccination and can produce evidence, the employee will not be required to take the vaccination but will have to sign a waiver.

Post-exposure Evaluation

When the employee incurs an exposure incident, it will be reported at once to the supervisor. The supervisor will offer a post exposure evaluation to the person at no charge to him/her. If the

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employee declines the post exposure evaluation the employee must sign a waiver at that time. The waiver will state that the employee at any time has the right to request the evaluation at no cost to him/her, but at this time, the evaluation has been refused. The supervisor will document the following information in either case:

- 1) Route of exposure
- 2) Circumstances related to the incident. If exposure is determined cont. to # 3 below
- 3) Identify the source individual (if possible)
- 4) The source individual will be tested for HIV/HBV (with consent)
- 5) The results of the testing will be made available to all personnel directly involved in this case
- 6) The affected employees will be offered the option of HIV/HBV testing
- 7) Affected employees will be given appropriate counseling concerning precautions after exposure.

VI. Training

Training will be provided for all employees before their initial assignment to tasks in which occupational exposure may occur. Qualified personnel will conduct training and they will outline a list of the subjects covered. Training will be afforded to each employee affected on a yearly basis. Testing will be required to determine an expressed knowledge.

VII. Recordkeeping

The Health and Safety Administrator is responsible for maintaining all records required by OSHA.

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*****Declination of Post Exposure Evaluation and Testing*****

I understand that I have been potentially exposed to blood or other potentially infectious materials and I may be at risk of contracting the HIV and/or the HBV virus(s). I have been given the opportunity to be tested for these viruses and to be evaluated by a medical professional of my choice at no charge to myself. I decline the evaluation and the testing at this time. I understand that at any time in the future I wish to be evaluated and tested for these viruses, M & D Coatings, Inc. will afford such testing to me at that time at no cost to me.

Printed name of affected person _____

Signature of affected person _____

Date _____

Printed name of evaluator _____

Signature of evaluator _____

Date _____

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*****Evaluation of Potential Exposure*****

The following questionnaire packet is to be completed by any employee who is involved in any spill of any bodily fluid other than his or her own bodily fluid. This packet contains two sections, the affected personnel will complete the first section and the second will be completed by an impartial, responsible party. This packet will be used to document determination of exposure to potential bloodborne pathogens.

SECTION 1 Employees self evaluation and documentation

The affected employee should complete questions 1-14

1. Date of Incident: _____
2. Time of Incident: _____
3. Date of Evaluation: _____
4. Time of Evaluation: _____
5. Name of Affected employee: _____
6. Clock #: _____
7. Did any potentially infectious material come in contact with any part of your body, clothes, or personal protective equipment? _____ if yes, explain _____

8. Were you wearing personal protective equipment? _____ If yes, explain what type(s) of ppe were used. _____

9. Do you have any open wounds or scratches? _____ If yes, explain. _____

10. Are you classified as an emergency responder? _____
11. Give circumstances surrounding the incident in your words. _____

12. Do you feel you were exposed to any potentially infectious materials? _____
13. Were any other personnel involved in the incident, other than the source individual? _____
 _____ If yes, give the names of the individual involved if known. _____
14. Printed name and signature of the affected employees and date.
 Name: _____
 Signature: _____ Date: _____

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SECTION 2 Evaluator Only

Evaluators please follow these steps before having the affected employee complete section 1.

1. Explain potentially infectious materials. Potentially infectious materials are considered by M & D Coatings, Inc. to be any bodily fluid that cannot be differentiated from a bodily fluid that contains blood. M & D Coatings, Inc. takes the universal approach to potentially infectious materials.
2. Explain bloodborne pathogens. Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, HEPATITIS B VIRUS (HBV) AND HUMAN IMMUNODEFICIENCY VIRUS (HIV).
3. Exposure routes. Exposure routes are defined as – when any potentially infectious material comes into contact with skin, eye, mucus membrane, or by sharp breaking epidermal layer of the skin.
4. Refer to bloodborne pathogen policy if any other questions arise that need clarification.
5. Explain the reason for the evaluation.

Exposure Determination

Based upon statement of affected individual, is there potential exposure to any infectious material? _____

Did the employee answer yes to numbers 7, 9, or 12? _____

If the answer is yes to either question above, please follow the steps below. If no, file and record appropriately.

1. Make available to the affected employee a confidential follow-up evaluation, HIV, and HBV testing.
2. Set up an appointment for a medical evaluation of the affected employees. Send this evaluation, an accident report, and a copy of OSHA standard 1910.1030 to the attending physician or medical professional.
3. Assure testing results are kept confidential.
4. Make available to the employee the Hepatitis B vaccination.
5. Inform the employee all of the above will be at no cost to them.

If the employee refuses one or all of the above mentioned, have the employee read, sign and date the appropriate declination(s).

Evaluators Name _____ Title _____
 Evaluators Signature _____ Date _____

Enter actions taken in the comments section.

Comments: _____

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DECLINATION FORM

I understand due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with the hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Printed Name _____

Signature _____

Date _____

Witness _____

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 014 Page 1 of 3 Revision No:</p>
	<p align="center">H₂S – Hydrogen Sulfide Work Program</p>	

I. Purpose:

In accordance with OSHA, the following program has been developed to ensure the health & safety of employees working with hydrogen sulfide. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety & health process.

II. Scope

In order to ensure that this program is properly implemented, the Health & Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees who could possibly work with or around Hydrogen Sulfide.

III. Hydrogen Sulfide (H₂S)

Written program

M & D Coatings, Inc. will review and evaluate this standard practice instruction, on an annual basis, when changes occur to governing regulatory sources that require revision, related company procedures that require a revision, when facility operational changes occur that require a revision, when there is an accident or close-call that relates to this area of safety, and anytime the procedures fail. This written program will be communicated to all affected personnel.

Hazard overview

Hydrogen Sulfide is a colorless gas possessing the disagreeable odor associated with rotten eggs. It is occasionally encountered naturally as the result of decay of organic waste. Sewage and swamp water, for example, typically contain dissolved hydrogen sulfide. We sometimes hear that such materials "smell like sulfur." But elemental sulfur is an odorless solid; what is actually meant is that such materials smell like hydrogen sulfide. Some amount of hydrogen sulfide is almost always present in our atmosphere.

Health affects

Continued inhalation in an atmosphere containing hydrogen sulfide causes dizziness and the onset of a headache. One deep breath of pure hydrogen sulfide is fatal; breathing a concentration of 600 ppm by volume is fatal within 30 minutes. Since it possesses such a disagreeable odor, most people are initially aware of its presence. However, hydrogen sulfide also deadens the sense of smell rapidly. Thus individuals who remain in an atmosphere containing hydrogen sulfide become oblivious to its presence and may inhale dangerous or lethal amounts unknowingly.

OSHA overview

Hydrogen Sulfide is available industrially, mainly as a liquid, in containers. It is primarily used in the chemical industry to produce other sulfur-containing compounds, but hydrogen sulfide is also used in the metallurgical industry. In the workplace, OSHA regulates the exposure of employees to hydrogen sulfide. OSHA stipulates a permissible exposure limit of 50 ppm by volume of hydrogen sulfide for no more than 10 minutes, But NIOSH allows only 10 ppm.

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DOT overview

The Department of Transportation regulates Hydrogen Sulfide as a poisonous gas. Containers are labeled POISON GAS and FLAMMABLE GAS, and their transport vehicles are similarly placarded.

NFPA overview

Description: Colorless gas; offensive strong odor similar to rotten eggs.

Fire and Explosion Hazard: Flammable gas. Forms explosive mixtures with air.

Flammable Range: 4.3% and 45%.

Ignition Temperature: 500 degrees.

Vapor Density: 1.2, (vapors are heavier than air) (air = 1.0) will seek lower areas.

Boiling Point: -76 degrees.

Freezing Point: -117 degrees.

Chemical Abstract Service (CAS) Number: 7783-06-4.

Training

M & D Coatings, Inc. shall provide training to each employee that could be exposed to Hydrogen Sulfide. The training will be conducted initially to ensure that the hazards associated with Hydrogen Sulfide are understood by all affected employees, and that the knowledge, skills and personal protective equipment required are acquired by employees.

The training shall as a minimum include the following:

- 1) Each authorized employee shall receive training in the recognition of applicable hazards involved with the particular job and job site, as well as the methods and means necessary for safe work.
- 2) The specific nature of the operation which could result in exposure to Hydrogen Sulfide.
- 3) The purpose, proper selection, fitting, use and limitation of personal protective equipment (PPE)
- 4) The adverse health effects associated with excessive exposure to Hydrogen Sulfide.
- 5) The engineering controls and work practices associated with the employee's job assignment, including training of employees to follow relevant good work practices.
- 6) The contents of any compliance plan in effect.
- 7) The employee's right of access to records under 29 CFR 1910.20.

Scheduled refresher training will be conducted on an annual basis.

Retraining

M & D Coatings, Inc. shall be provided for all affected employees as a minimum under the following conditions:

- 1) Whenever there is a change in job assignments.
- 2) Whenever there is a change in personal protective equipment.
- 3) Whenever there is a change in equipment that presents a new hazard.
- 4) Whenever there is a change in processes that presents a new hazard.
- 5) Whenever their work takes them into hazardous areas.

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- 6) Whenever there is a change in Hydrogen Sulfide safety procedures.
- 7) Whenever safety procedure fails resulting in a near-miss, illness, or injury.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards, or use of equipment or procedures. The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.

Certification

This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, each employee's name, and dates of training.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 015 Page 1 of 7 Revision No:</p>
	<p align="center">Lifting and Materials Handling Program</p>	

Purpose

In accordance with OSHA, the following program has been developed to ensure the health and safety of employees working with cranes, derricks, hoists, conveyors and aerial lifts. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety and health process.

Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as policy administrator. This procedure applies to all employees who work on cranes, derricks, hoists, conveyors and aerial lifts.

General Requirements

Lifting equipment is built for safe and economical operation, but it is only as safe as the operators who operate it.

- 1) All cranes, hoists, motor vehicles, elevators, conveyors, and heavy equipment must be operated and maintained to conform to established standards.
- 2) All cranes, hoists, motor vehicles, elevators, and heavy equipment must be inspected prior to use on each shift. All deficiencies must be repaired before the equipment is used.
- 3) Operators of such equipment must keep inspection records required by this procedure.
- 4) Rated load capacity charts, recommended operating speeds, special hazards warnings, and other essential information will be visible to the operator while he is at his control station. An operator's manual must also be available at all times.
- 5) Operators must take signals from only one person; in an emergency, however, a STOP signal can be given by anyone.
- 6) Only standard hand signals will be acknowledged. A copy of the hand signals must be posted on equipment visible to employees.
- 7) Routine maintenance, fueling and repairs must not be performed while the equipment is in use or the power on.

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Operators of Material Handling Equipment

- 1) Cranes will be operated only by the following personnel:
 - a. The designated operator: The operator assigned by the employer as being qualified/certified to perform specific duties.
 - b. Learners under the direct supervision of a designated operator.

- 2) No one, other than personnel specified above, will enter an operator station or crane cab, with the exception of persons such as helpers and supervisors whose duties require them to do so, and then only in the performance of their duties and the knowledge of the operator or other appointed person.

- 3) The operator will be responsible for those operations under his direct control. Whenever there is any doubt as to safety, the operator will stop and refuse to handle the load until safety, such as proper rigging, has been assured.

- 4) The operator will not hoist, lower, swing, or travel while anyone is on the load, hook, or headache ball.

- 5) While actually engaged in operating the crane, the operator will not engage in any practice that will divert his attention.

- 6) The operator will familiarize himself with the equipment and its proper care. If adjustments or repairs are necessary, or any defects are known, he will report the same promptly to his supervisor and will notify the next operator of the defects upon changing shift. The equipment shall not be used until the defects are repaired.

- 7) The operator will avoid swinging loads over employees.

- 8) The operator will not leave his position at the controls while the load is suspended.

- 9) Before leaving his crane unattended, the operator will:
 - a. Land any attached load, bucket, lifting magnet, or other device.
 - b. Disengage clutch.
 - c. Set travel, swing, boom brakes, and other locking devices.
 - d. Put controls in the "off" position.
 - e. Stop the engine.
 - f. Secure the crane against accidental travel.
 - g. Safety latches are required on all hooks on lifting and pulling devices.

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Cranes and Derricks

- 1) No one but the operator will be allowed in or on the machine while it is operating. This means no riders.
- 2) Boom angle indicators must be in working order at all times.
- 3) All wire ropes will be inspected regularly and in good repair.
- 4) All belts, gears, shafts, pulleys, sprockets, drums, flywheels, or chains will be properly guarded.
- 5) The swing radius will be free of outside material such as water cans, toolboxes, and miscellaneous storage. A minimum of 2 ft. of clearance must be maintained between the counterweight and any obstruction or barricaded to prevent personnel being caught between.
- 6) All windows will be of safety glass and free of distortion such as cracks.
- 7) There will be an accessible ABC fire extinguisher at all operator stations or cabs. Operators are responsible for (or may request assistance with) flagging off the area below their lift and around the crane.
- 8) The load block, headache ball, and safety hook will be kept in good repair.
- 9) No employee will ride on a cable, ball, chain, sling, or any other hoisting attachment or on the material being moved by means of winch line, crane, or truck.
- 10) Backup alarms will be installed on truck cranes and pickers.
- 11) With mobile cranes, all four outriggers should be firmly set for every lift and tires must be off the ground unless operating from "rubber" chart. In case of a rolling lift, the ground area must be firm/stable and outrigger pads set to just clear the ground.
- 12) Booms and boom members will be kept in good repair, free of cracks, dents, and broken parts.
- 13) Boom and crane rigging should be inspected at the start of every shift.
- 14) A daily crane inspection must be completed and filed through the appropriate supervisor.
- 15) Jibs will be used when necessary for inward reach and will be equipped with positive jib stops.
- 16) Cranes will not be operated when any part of the machine can come within 10 feet of high voltage conductors. When operating in proximity to a high voltage line, riggers will not pull the load line at an angle to make a hook up. If it is necessary to operate a crane close to

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high voltage lines, arrange through supervision to have the line de-energized or shielded if possible.

17) A designated employee must observe clearance of the equipment and give timely warning for all operations where the operator's vision is obstructed.

18) Any overhead line must be considered energized unless the responsible utility company says that it is not energized. LTT (LO/TO) procedures must be adhered to.

19) Hydraulic Cranes

- i) The use of hydraulic cranes as general-purpose material handling equipment presents an operation control problem that all supervision should be aware of and responsible for. In addition to the applicable rules set down in the previous sections, the following rules will be adhered to when operating a hydraulic crane.
 - (a) Do not operate a hydraulic crane with the cab doors in the open position. In warm weather, remove and store door to prevent blind spots.
 - (b) Wear seat belts at all times while traveling the crane.
 - 1. All deficiencies of the machine or usage conditions are to be reported to your supervisor promptly.
 - 2. No modifications or additions that affect the capacity and operation of the equipment will be made without the manufacture's written approval.
 - 3. Inspect the tires for proper condition and inflation.
 - 4. Check the back up alarm for proper functioning.

20) Outriggers

- (a) The crane will be level (within 1%) with all outriggers down on firm ground or footing proper to lifting loads or swinging the boom over the side, except as noted under the Traveling heading below. Without the outriggers down and even with no load, it is possible to tip the crane over by simply swinging the boom over the side.
- (b) Transporting materials on the outriggers is prohibited.
- (c) Use pads under outriggers when soil conditions are poor, especially when making heavy picks or when working near maximum radius.
- (d) When setting up near trenches or excavations, stay a safe distance away from the hole. Previously disturbed soil must be evaluated for stability.

21) Hoisting

- (a) Know the weight of the load and where it has to go.
- (b) No crane will be loaded beyond its rated capacity.
- (c) Each time a load approaching the rated load is handled, the operator will test the machine by raising the load a few inches and holding it.
- (d) Extreme care should be exercised when a load approaching the rated load capacity is handled. Whenever, possible, this load should be tested keeping it close to the ground and booming out to the maximum radius required prior to making the actual lift into place. Be sure actual operating conditions do not exceed test conditions.
- (e) Use extreme caution when extending the boom with loads suspended. As the working radius increases, load capacity decreases and can cause

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the machine to tip over. Most hydraulic cranes differ from a friction machine in that a load cannot be lowered fast enough to overcome a tipping action once the machine becomes over-balanced.

- (f) When the boom is extended, care should be exercised to avoid “two blocking” sheave clock with boom.
- (g) During hoisting, swing, or lowering operations, there will be no sudden acceleration or deceleration of the moving load.

22) Traveling

- (a) When traveling, the boom will be fully retracted and positioned over the front of the machine in the direction of travel.
- (b) Use a signalman when backing the crane. The operator’s visibility is very poor towards the rear of some machines.
- (c) The warning signal will be sounded each time before traveling, and intermittently during travel, particularly when approaching employees.
- (d) Traveling with a load is not encouraged. However, if the supervisor approves it, the operator will adhere to the following procedures:
 1. Load must be positioned over the front of the machine in the direction of travel.
 2. All traveled loads must be tied off to the machine by a tag line and not held or balanced by employees walking along side the load.
 3. Some loads will require the positioning of outriggers close to the ground.
- (e) No one will be permitted to ride on any crane or picker except the operator or driver.

Adding/Removing Boom Sections

- 1) When adding or removing a section of sections of a mobile crane boom, the manufacture’s specification for changing boom sections should be checked and should be followed.

Aerial Work Platforms

- 1) J.L.G. Type Work Platform
 - a) The counterweight swing radius is to be barricaded any time the equipment is in operation.
 - b) The lift will be operated only from level ground with wheels chocked unless controls are located in basket of equipment.
 - c) Steering wheels will not be turned on concrete floors, unless lift is in motion.
 - d) Safety harnesses will be worn in basket, with lanyards secured to approved anchor points.
 - e) The gate on basket will be kept closed and locked at all times when in use.
 - f) No materials will be lifted with a J.L.G. lift.
 - g) Machine platforms will be kept a minimum of 10 feet from electrical power lines.
- 2) Scissor Lift Type Work Platform
 - a) Barricade tape will be erected around the lift to keep all personnel away from the basket in lowered position to a distance of not less than 3 feet.
 - b) When platform is raised for maintenance of the rig; before anyone works under the platform, it will be positively blocked up to prevent it from falling.

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- 3) Material Hoists
 - a) The maximum allowable distance between the floor of the lifting car and the landing platform is six inches.
 - b) Material hoists will not be operated near ladders, passageways, etc.

Motor Vehicles and Mechanized Equipment

- 1) Fork Trucks
 - a) Fork trucks will be equipped with an ABC type fire extinguisher, within reach of the operator.
 - b) Fork trucks will be equipped with at all times approved overhead protection, in addition to roll over protection.
 - c) Railroad tracks should be crossed diagonally whenever possible.
 - d) Forklifts will not be used as an elevator for employees except when a proper platform is utilized.
 - e) Powered fork trucks and other mechanical equipment shall not be operated in areas where flammable concentrations exist, unless the vehicle is rated for that use.
- 2) Operation of Motor Vehicle and other Mobile Equipment General Requirements
 - a) Backup alarms are required on all equipment.
 - b) Roll over protection structures (ROPS) are required on all tractors, dozers, and fork trucks.
 - c) An ABC fire extinguisher will be maintained in the operator's cab of all equipment.
 - d) Only those employees specifically authorized and possessing a valid licenses or permits pertaining to the particular type vehicle they are operating will operate equipment.
 - e) Vehicles will be operated within the legal speed limit at all times and at a lower speed where conditions warrant.
 - f) Drivers will not permit unauthorized persons to drive, operate, or ride in or on a vehicle or equipment.
 - g) Seat belts will be used by both driver and passenger whenever the vehicle is in motion.
 - h) Tools and materials will be secured to prevent movement when transported in the same compartment with employees. This will also prevent possible tipping over non-secured tools in the bed of the truck.
 - i) Passengers will not stand in moving vehicles. Rather, they will sit where no part of their body protrudes beyond the extent of the vehicle top or sides.
 - j) Drivers and operators will not let anyone ride on the running boards, fenders, or any part of a motorized vehicle except the seats inside the body walls.
 - k) Drivers must not move vehicles until riders comply with all safety precautions.
 - l) Employees will not ride on loose material or equipment carried on trucks
 - m) Employees will not ride on trailers or floats.
 - n) Employees will not jump on or off of vehicles in motion.
 - o) Load limits of booms and other hoisting equipment will not be exceeded.
 - p) Before backing a vehicle, a driver will definitely determine that the space needed is clear, sound the horn twice and he/she will back slowly, keeping a constant lookout the entire time he/she is backing. When backing a truck, if another employee (ground guide) is available, they will be so stationed that they can warn the driver of approaching danger and assist them in maneuvering the vehicle. It is preferable to station a guide on the left hand side of the vehicle so that the driver sees the guide when looking into his left hand mirror.
 - q) Drivers will be prepared to stop or to yield the right of way in all instances where necessary to avoid an accident.

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- r) Drivers following other vehicles will stay at a safe distance behind so they can stop in the clear distance ahead. The “two second rule” (plus two in slippery conditions) should be utilized.
 - s) All doors will be kept closed at all times, except when the driver or passengers are getting in and out of the cab.
 - t) Unlicensed vehicles will not be used on public highways.
 - u) Not every employee is allowed to operate company vehicles. The department supervisor assigned the vehicle will be responsible to designate drivers. Designated persons should be kept to a minimum. Proof of insurance and an accident kit should be kept in all company vehicles.
- 3) Fueling Equipment
- a) All ignition systems will be turned off, and no smoking will be permitted while fueling any vehicle.
 - b) No fueling operation will be performed inside an enclosed building.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 016 Page 1 of 4 Revision No:</p>
	<p align="center">Motor Vehicles & Other Mobile Equipment Program</p>	

I. Application

This section covers procedures and guidelines for the safe operation of motor vehicles and other mobile equipment at all plants and on public roads. All motorized equipment that can move over the ground is covered by this procedure, including cranes, tractors, backhoes, etc., in addition to private motor vehicles. All supervisors will be responsible for ensuring that all employees follow these procedures.

II. General Requirements

Backup alarms are required on all equipment having an obstructed view of the rear. Roll over protection structures are required on all tractors, dozers and fork trucks. An ABC fire extinguisher will be maintained in the operator's cab of all equipment. The company must be notified as soon as possible in the event of any accident, fine or penalty while operating a company vehicle. Proof of insurance and an accident kit must be kept in the vehicle at all times.

All drivers and operators:

- ❖ Must have a valid state driver's license.
- ❖ Must know and obey all state and local traffic laws covering the territory in which he/she is driving.
- ❖ Will be personally responsible for all fines and other penalties assessed against him/her for traffic violations.
- ❖ Will operate vehicles within the legal speed limit at all times and at a lower speed where conditions warrant.
- ❖ Will not permit unauthorized persons to drive, operate, or ride in or on a vehicle or equipment.
- ❖ Will clearly indicate his/her intention of passing, stopping, or turning and will always obey posted speed limits on or off company property.
- ❖ Will come to a complete stop, sound horn and proceed with caution when entering or leaving any building, enclosure, or alley where vision is obstructed.
- ❖ Will be prepared to stop or to yield the right of way in all instances where necessary to avoid an accident.
- ❖ While following other vehicles, will stay at a safe distance behind (two second rule – plus two in slippery conditions) so they can stop in the clear distance ahead.
- ❖ Will use seat belts and restraint devices during travel.

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- ❖ Will secure tools and equipment before transporting.
- ❖ Passengers will not stand in moving vehicles. Rather, they will sit where no part of their body protrudes beyond the extent of the vehicle top or sides.
- ❖ Employees will not ride on loose material or equipment carried in trucks.
- ❖ All tailgates are to be up and latched before movement of a vehicle is permitted.
- ❖ Employees will not ride on trailers or floats.
- ❖ Employees will not jump on or off of vehicles in motion.
- ❖ When stopped on inclines, drivers will be sure that the brakes are properly applied, the vehicle is in gear, and wheels are at an angle against the curb, where possible. This applies whether the vehicle is facing upgrade or downgrade.
- ❖ Employees who leave the vehicle, and are 20 feet away or out of the vehicles sight shall treat the vehicle as unattended. In these cases, the vehicle shall be shut off with parking brake on and all controls neutralized.

III. Daily Inspections

At the beginning of each shift, all drivers and operators will make a walk around inspection of the vehicle. The following items will be checked:

- 1) Backup alarm
- 2) Horn
- 3) Wipers
- 4) Headlights, high and low beams
- 5) Turn signals
- 6) Front and rear for any damage
- 7) Brake lights and backup lights
- 8) Running lights
- 9) Tires – properly inflation, cuts, tread
- 10) Brakes

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11) Fire extinguisher in place and charged

- 1) Vehicle clean and free of trash
- 2) Roll over protection

NOTE: Vehicles will not be operated until all noted deficiencies are corrected.

IV. Fueling Equipment

- 1) All ignition systems will be turned off, and no smoking will be permitted while fueling any vehicle.
- 2) No fueling operation will be performed inside an enclosed building.
- 3) Fuel will be delivered to vehicles by approved pumps or safety cans.
- 4) Brakes will be set during fueling.
- 5) Drivers or operators will be outside the vehicle during fueling operations.

V. Maintenance

Safety precautions will be taken to prevent the release of any uncontrolled energy sources (Hydraulics, Gravity, Pneumatic, etc.) when performing maintenance.

VI. Loading and Hauling

Load materials and equipment so that they may not cause a hazard by shifting. Securely fasten heavy equipment and materials with chains and binders. Loop chains over binder handle, locking it in place. Chock wheels whenever vehicles/trailers are loaded by the use of forklifts or rolling equipment.

VII. Street and Highway Driving

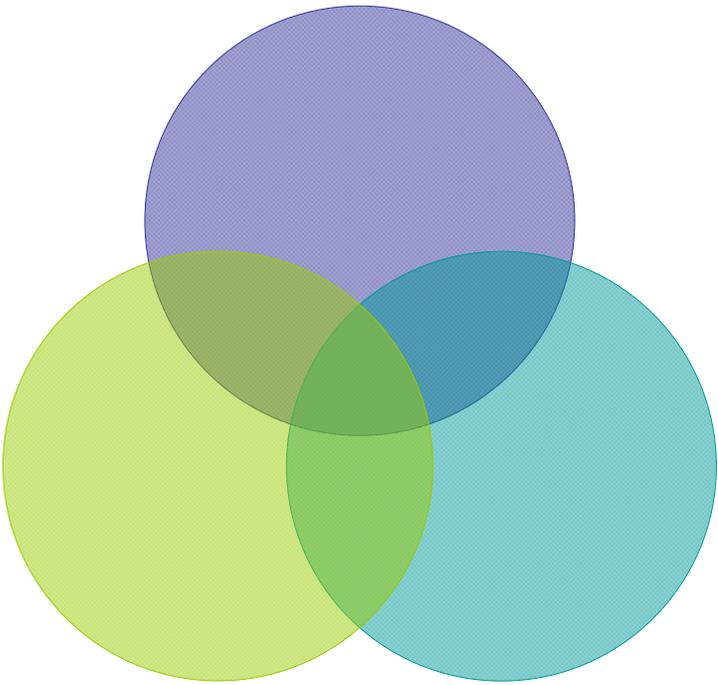
Drivers will keep a sharp lookout for children, especially in school zones or where they are playing, and will be prepared for an immediate stop. Vehicles stopped on public roadways will be protected by red flags, proper warning lights, or reflectors in accordance with legal requirements. Vehicles will not be parked on bridges or culverts, except where necessary for work. All tools, materials, or equipment will not be permitted to extend beyond the permanent fixtures provided on the sides of the truck.

VIII. Signaling Vehicular Traffic

The primary function of traffic control procedures is to move traffic safely through or around work areas. For hand signaling, flag persons will use red flags at least 18 inches square or sign paddles, and will use red lights in periods of darkness. Flag persons will be provided with and will wear a red or orange warning garment while flagging. Warning garments worn at night will be of reflectorized material. The flag person must, at all times, be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging

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instructions.



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	<p align="center">Personal Protection Program</p>	

I. Purpose:

The purpose of this program is to establish guidelines for the selection, use, and care of personal protective equipment, hereafter referred to as PPE. Further, the guidelines are designed to help ensure that M & D Coatings, Inc. meets the PPE requirements outlined in 29 CFR 1910.132, 133, 135, and 136. Employer and employee responsibilities for ensuring the correct PPE are defined.

II. Scope

This procedure applies to all employees of M & D Coatings, Inc.

III. Policy

It is M & D Coatings, Inc. policy that each individual shall be protected from exposure to potentially harmful chemical or physical agents. Engineering and/or administrative controls will be investigated and implemented where feasible. Approved PPE shall be used as an interim measure until such determination can be made. PPE should be considered as a last resort. PPE and decontamination facilities will be provided by M & D Coatings, Inc. for all employees.

IV. Responsibility

It is the responsibility of each individual employee to know how to properly select PPE according to the guidelines in this procedure. If uncertainty exists, the individual should consult with their Supervisor. Material Safety Data Sheets (MSDSs) may be consulted; however, the information may not be sufficiently specific, especially considering the wide variety of tasks performed.

Employees will be issued certain PPE, either at the start of employment or at some later date when the specific piece of PPE is needed for a work assignment.

Supervisors

- 1) Ensures employees wear the correct PPE as specified by the facility safety procedures.
- 2) Ensures employees decontaminate their PPE.
- 3) Ensures monthly inspections of PPE are conducted and the results documented.
- 4) Ensures employees replace their PPE when performance becomes questionable or, as per manufacturer's recommendations, whichever occurs first.
- 5) Inspects employee PPE monthly to ensure proper use and storage.

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Employees

- 1) Wear PPE as required by safety procedures.
- 2) Immediately report any deficiencies or concerns with PPE to supervision.
- 3) Thoroughly inspect PPE monthly to ensure no degradation or permeation has taken place. NOTE: PPE should routinely be inspected prior to each use.

V. Procedure

General

PPE shall be used when there is a potential for physical injury or chemical exposure to the surface area of the body. PPE shall be used when:

Performing tasks as outlined in the Health & Safety Manual, or any other task not covered by a procedure but that has potential to expose personnel to injury.

This equipment is issued for the individual employee's specific use and is not intended to be shared with other employees. The employee is responsible for the care and cleaning of the equipment, as well as insuring that it does not become lost, stolen, or damaged.

Selection and Types of PPE

Selection of the proper PPE depends on the specific type of chemical or physical hazard, the level of exposure, and the task being performed. An extension to the Exposure Assessment process, which details high-risk tasks by jobs for the entire plant, a plant PPE Hazard Assessment determines the correct PPE to use for those tasks. An initial hazard assessment shall then be conducted to assess the following hazards:

- 1) Impact
- 2) Penetration
- 3) Compression
- 4) Chemical
- 5) Temperature
- 6) Dust
- 7) Noise
- 8) Motion
- 9) Falls/Falling Objects
- 10) Sharp Objects
- 11) Pinch Points
- 12) Electrical
- 13) Ergonomics

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Pre-Inspection and Use

Prior to use, all PPE, even if new, shall be visually inspected for defects such as imperfect seams, non-uniform coatings, pinholes, malfunctioning closures, and tears. Some flexible materials may stiffen during extended storage periods. The product should be flexed and examined for surface cracks and other signs of shelf life deterioration. The PPE shall not be used if evidence of chemical or physical damage or contamination is found. Chemical resistant gloves should be leak tested by trapping air inside.

A part of properly donning PPE includes securing and checking closures (e.g., snaps). The fit of the PPE shall also be evaluated. Improperly fitting PPE represents an added physical hazard. Where clothing is too small, worker movement is restricted, likelihood for tear is increased, and the potential for accelerated worker fatigue exists. Where the clothing is too large, the possibility of snag is increased and the dexterity and coordination of the worker may be compromised.

Storage, Maintenance, and Re-use

Chemical splash suits (e.g., PVC) will be used as chemical protective clothing.

When not in use, chemical protective clothing shall be stored in work locations to protect it from excessive heat, direct sunlight or physical damage. PPE should be hung up after use and cleaning, and should not be stored with personal clothing.

All reusable PPE will be decontaminated after each use as part of the job requirements. Each individual employee is responsible for decontaminating and maintaining their own PPE.

Decontamination

Decontamination procedures will be used to protect workers who wear the PPE, people who are in designated non-exposure areas, worker's families, and the general community.

Training and Re-Training

PPE training will be conducted initially upon assignment to the job, and as a refresher on a routine basis. Training will be conducted on:

- 1) Hazards associated with PPE use
- 2) PPE selection
- 3) Use
- 4) Care
- 5) Inspection
- 6) PPE types
- 7) Decontamination
- 8) Maintenance

All training will require the employee to demonstrate the proper donning, doffing, use, and care of the PPE prior to using the equipment in the field.

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Retraining will be required when it becomes apparent the employee is not using the appropriate PPE or demonstrates a lack of PPE knowledge by improper use, care, or PPE maintenance practices. Training will be conducted whenever new PPE is introduced.

Recordkeeping

A written certification must be maintained to verify that each affected employee has received and understood the required PPE training. The written certification must include the name(s) of each employee trained, the date(s) of training, and the subjects of training.

Maintenance & Inspection

The user shall inspect PPE prior to each intended use.

Issuing

PPE is issued to newly hired employees during the new employee orientation process. The employee's job supervisor will conduct replacement of PPE.

Clothing

It is the responsibility of each employee to wear necessary work clothing required by his/her particular job assignment.

It is further recommended that rings, watches, and other hand or art type jewelry not be worn during work hours.

Long pants will be worn at all times during work hours. They must be cuff less and of proper length so as not to drag the ground, be a trip, or snag hazard.

Long sleeve shirts are recommended.

Special protective clothing is required in operations such as welding and cutting, and handling caustic materials, acids, or toxins. This will be addressed by the employee's supervisor at the beginning of each new work assignment.

Heavy gloves are required when abrasive blasting.

Rain suits or chemical resistant suits will be provided when required by the working conditions.

Leather steel toed shoes are required as a minimum.

All clothing must fit properly. Extremely baggy or loose fitting clothes will not be tolerated, particularly in areas around rotating equipment.

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Head Protection

Plastic or fiberglass hard hats meeting ANSI standards will be worn by all employees as required. Only liners specifically made for hard hats will be permitted.

The sweatband should be adjusted to the proper snugness so that the hat will not fall off when a person leans over or be blown off by a gust of wind. Adjustments should not be so tight that the mark of the band is left on the wearer's forehead.

If there is danger of the hat falling or being blown from the head, a chinstrap, properly adjusted, will be worn.

Inspection of hard hats should include a check of the condition of webbing and the sweatband. Suspensions will be replaced when found to be in deteriorated condition. The suspension system shall be intact and undamaged.

It should also be noted that hardhats do have expiration dates. The expiration date is found on the underside of the hat.

The bill of the hard hat is to be worn to the front for maximum protection at all times, except when performance of a welding operation, and then only while the hood is attached to the hard hat.

A hard hat must be worn at all times whether on the job site or in the shop. The only exception will be when the employee is wearing an air fed blast hood which has its own hard hat built-in to the system. Hard hats will be made of a non-conductive material.

Safety Glasses and Mono Goggles

All personnel will wear safety glasses with clear semi-shields permanently attached and meeting ANSI Z87.1-1968 standards.

Employees who wear corrective lens shall wear protective goggles over their corrective lenses. Prescription glasses must be safety rated or safety glasses that fit over standard glasses must be worn. Contacts are prohibited in certain areas.

Safety glasses must be worn whenever machines or operations present potential eye or face injury from physical, chemical, harmful rays, flying objects, dirt and dust.

Goggles protect the eye from hazards that may strike from any angle. They are available with regular ventilation or hooded ventilation. Regular ventilation protects the eyes against dust, sparks, and flying objects coming from any angle. Hooded ventilation protects the eye from all of those things as well as a chemical splash. If you work in an area where chemical splash is a possibility, make sure your goggles are not just regular ventilated but are also hooded ventilated.

Face Shields

Face shields are required when performing the following jobs:

Grinding or chipping any material.

Handling caustics, acids, and other chemicals where spill or splash hazards exist.

Operating abrasive blasting equipment.

Operating masonry saws.

Operating abrasive cutoff saws.

Any operation that subjects the eyes or head to flying particles.

Filter Lens for welding or cutting: For the proper filter lens to use when welding or cutting, refer to OSHA 1926.102-Table E-2 "Filter Lens Shade Numbers for Protection Against Radiant Energy".

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Gloves

All personnel will wear hand protection when handling rough, sharp edged, abrasive material, or where the work subjects the hands to lacerations, punctures, burns, or bruises. Gloves will not be worn for close work around saws, lathes, drill presses, or similar machinery in which they are liable to become entangled. Heavy gloves are required for abrasive blasting. Rubber gloves will be provided for employees who are handling caustics, acids, or other chemicals.

Foot Protection

Leather steel toed work boots are required meeting ANSI Z41.1. Wearing sneakers or lightweight shoes is prohibited. Boots that offer ankle support are recommended. Footwear must have a discernable heel (no flat bottoms) when climbing ladders.

Hearing Protection

Hearing protection must be worn when it is not possible to reduce levels below 85 decibels. Plain cotton is NOT acceptable as a protective device. Ear protection devices inserted in the ear shall be fitted or determined individually by competent persons. See Hearing Conservation Procedure in Safety Manual.

Respiratory Protection

See Respiratory Protection Procedure in Safety Manual

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Pre Hazard Assessment Survey

PROJECT NO. _____ LOCATION _____

AREA: _____

JOB FUNCTION(S) _____

POTENTIAL/PRESENT HAZARD SOURCES

EYE AND FACE PROTECTION

Chemical: _____
 Dust: _____
 Light: _____
 Heat: _____
 Impact: _____
 Others: _____

HAND PROTECTION

Chemical: _____
 Heat: _____
 Abrasion: _____
 Impact: _____
 Penetration: _____
 Others: _____

HEAD PROTECTION

Overhead Objects: _____
 Electrical: _____
 Others: _____

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	<p align="center">Ladders, Scaffold & Rigging Work Program</p>	

I. Purpose:

In accordance with OSHA, the following program has been developed to ensure the health & safety of employees working from ladders and scaffolds. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety & health process.

II. Scope

In order to ensure that this program is properly implemented, the Health & Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees who could possibly work on scaffolds or ladders. M & D Coatings, Inc. employees are not “qualified” persons, and will not build scaffolds.

III. Ladders and Scaffolds

Ladders

General Requirements

Ladders must be in good condition, made of suitable fiberglass material, of proper length, and of the correct type for the use intended. Damaged ladders must never be used; they should be repaired or destroyed. Ladders used near electrical equipment must be made of a non-conducting fiberglass material. Stored ladders must be easily accessible for inspection and service, kept out of the weather and away from excessive heat, and well supported when stored horizontally.

A double-cleated ladder or two or more separate ladders shall be provided when ladders are the only means of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous two-way traffic.

Ladders (1926.1053)

- 1) Check ladders each and every time before you climb. Ladders should be maintained in good condition: joints between steps and side rails should be tight; hardware and fittings securely attached; and movable parts operating freely without binding or undue play. Ladder rungs and steps should be free of grease and oil.
- 2) Employees are prohibited from using ladders that are broken, missing steps, rungs, or cleats, or that have broken side rails or other faulty equipment.
- 3) A portable ladder must not be used in a horizontal position as a platform or runway or by more than one person at a time.

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- 4) The proper angle (75 degrees) for a portable straight ladder can be obtained by placing the base of the ladder a distance from the vertical wall equal to one quarter of the vertical distance from base to top of ladder's resting point (4:1 = height to base ratio).
- 5) Ladders must be ascended or descended facing the ladder with both hands free to grasp the ladder (3 point contact).
- 6) Tools must be carried in a tool belt or raised with a hand line attached to the top of the ladder.
- 7) Extension ladders should be secured in place to prevent sideslip.
- 8) It is prohibited to place ladders on boxes, barrels, or other unstable bases to obtain additional height. Face the ladder when ascending or descending.
- 9) It is required that you be on or below the third rung from the top of a ladder. Do not use the top step or one step below of ordinary stepladders as a step.
- 10) When portable rung ladders are used to gain access to elevated platforms, roofs, etc., the ladder must always extend at least 3 feet above the elevated surface or edge of an excavation.
- 11) Ladders shall be used only for the purpose for which they were designed.
- 12) Ladders shall be used only on stable and level surfaces.
- 13) Ladders placed in locations where they can be displaced by workplace activities or traffic shall be secured or a barricade shall be used to keep activities or traffic away from the area.
- 14) Ladders shall not be moved, shifted, or extended while occupied.
- 15) If used where employees are exposed to energized electrical equipment, ladders shall have non-conductive side rails.
- 16) Single-rail ladders may not be used.
- 17) Employees shall not carry any object or load that could cause the employee to lose balance and fall.
- 18) When using a step ladder, make sure it is fully opened and locked in place. Never climb the back side of the ladder and do not climb higher than the second step from the top.
- 19) When using a straight ladder, make sure the safety feet are properly attached. Always tie off the ladder at the top and at the bottom, if possible. Wooden ladders are not to be coated with anything except a clear coating and should be stored indoors if possible.
- 20) Check all ropes, wheels, pulleys and locks to make sure they are fully functional.

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21) Never splice two shore ladders together, always ensure that the ladder extends 36 inches above the landing where you are going.

IV. Scaffolds

All scaffolds, whether fabricated on site, purchased, or rented must conform to the specifications found in ANSI A10.8 Safety Requirements for Scaffolding. Rolling scaffolds must maintain a 4:1 height to base ratio. Casters or wheels shall be locked to prevent any movement.

The footing or anchorage for a scaffold must be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. The poles, legs or uprights of scaffolds shall be plumb and securely and rigidly braced to prevent swaying and displacement. Overhead protection shall be provided for men on a scaffold exposed to overhead hazards. Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur. No welding, burning, riveting, or open flame work shall be performed on any staging or suspended by means of fiber or synthetic rope. Unstable objects such, as barrels, boxes, loose brick, or concrete blocks must not be used to support scaffolds or planks. No scaffold may be erected, moved, dismantled, or altered unless supervised by competent persons.

Scaffolds and their components must be capable of supporting at least four times the maximum intended load without failure.

Guardrails and toe boards must be installed on all open sides and ends of scaffolds and platforms more than 10 feet above the ground or floor. Scaffolds 4 feet to 10 feet in height having a minimum horizontal dimension in either direction of less than 45 inches must have standard installed guardrails on all open sides and ends of the platform. Guard rails shall be 2 x 4 inches or equivalent in diameter, approximately 42 inches high, with a midrail made of lumber that is 1 x 6 inches. Toe boards shall be installed at all open sides and ends on all scaffolds more than 10 feet above the ground or floor level. Support shall be at intervals not to exceed 8 feet. Toe boards shall be a minimum of 4 inches in height. There shall be a screen with maximum ½ inch openings between the toe board and the guardrails, where the persons are required to work or pass under the scaffold.

Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toe board and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard wire mesh or equivalent. Scaffolds and their components shall be capable of supporting, without failure, at least 4 times the maximum intended load.

All planking shall be Scaffold Grade, or equivalent, as recognized by approved grading rules for the species of wood used. All planking of platforms shall be overlapped a minimum of 12 inches or secured from movement. An access ladder or equivalent safe access shall be provided. Scaffold planks shall extend over their end supports not less than 6 inches or more than 12 inches.

The maximum permissible spans for 2 x 10 inches or wider planks are shown in the following table:

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Planking requirements

Table L – 3 - Material

	Full Thickness Undressed Lumber			Nominal Thickness Lumber (1)	
Working load (psf).....	25	50	75	25	50
Permissible span (ft.).....	10	8	6	8	6

Footnote (1) Nominal thickness lumber not recommended for heavy-duty use.

The maximum permissible span for 1 ¼ x 9 inches or wider plank of full thickness is 4 feet, with medium loading of 50 psf.

All scaffolding and accessories shall have any defective parts immediately replaced or repaired.

An access ladder or equivalent safe access shall be provided.

Tools and materials, and debris shall not be allowed to accumulate in quantities to cause a hazard.

No scaffold shall be erected, moved, dismantled or altered, except under the supervision of competent persons.

V. Mobile Scaffolds

Platforms shall be tightly planked for the full width of the scaffold except for necessary entrance openings. Platforms shall be secured in place. Mobile scaffolds shall never be moved with personnel located on the scaffold unless approved by the competent person.

Top-rails made of lumber, not less than 2 x 4 inches (or other material providing equivalent protection), approximately 42 inches (plus or minus 3 inches) high, with a mid-rail 21 inches (half the distance of the top-rail), of 1 x 6 lumber (or other material providing equivalent protection), and toe boards, shall be installed at all open sides and ends on all scaffolds more than 10 feet above ground or floor. Toe boards shall be a minimum of 4 inches in height. Where the persons are required to work or pass under the scaffold, wire mesh shall be installed between the toe board and the top-rail, extending along the entire opening.

The poles, legs or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement. Overhead protection shall be provided for men on a scaffold exposed to overhead hazards. Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur. No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope

When free-standing mobile scaffold towers (rolling scaffold) are used the height shall not exceed four times the minimum base dimension (outriggers can dramatically increase the available height by increasing the minimum base dimension).

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Casters shall be properly designed for strength and dimensions to support four times the maximum intended load. All casters shall be provided with a positive locking device to hold the scaffold in position. Scaffolds shall be properly braced by cross bracing and horizontal bracing.

Platforms shall be tightly planked for the full width of scaffold except for necessary entrance opening. Platforms shall be secured in place.

A ladder or stairway shall be provided for proper access and exit and shall be affixed or built into the scaffold and so located that when in use it will not have a tendency to tip the scaffold. A landing platform must be provided at intervals not to exceed 35 feet.

The force necessary to move the mobile scaffold shall be applied near or as close to the base as practicable and provisions shall be made to stabilize the tower during movement from location to location. Scaffolds shall only be moved on level floors, free of obstructions and openings.

NOTE: EMPLOYEES ARE NOT TO RIDE ON SCAFFOLDS DURING MOVEMENT FROM LOCATION TO LOCATION!

VI. Rigging

Life lines, safety belts, safety harnesses, and lanyards are to be used only for employee protection. They are not additional hoisting devices and if they are used a construction load (which is not permitted); they will be removed from service. Life lines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 lbs.

When a worker's duties require horizontal travel, the rigging shall be constructed so the life line will slide along with the employee. Fall protection shall be used on all staging, platforms, floats, catwalks, and other work areas which are 15 feet above ground level or more. Life lines shall be ¾ inch manila rope or equivalent and have a minimum breaking strength of 5,400 lbs. Lanyards shall be attached to life lines by means of a positive descent control device.

Safety nets shall be used when the work place is more than 25 inches above the ground or water and where the use of ladders, scaffolds, catches platforms, temporary floors, safety lines or safety belts are impractical. Nets shall extend 8 feet beyond the work area and be located not more than 25 inches below the level of the work. Maximum mesh size shall be 6 x 6 inches; the net shall have a minimum of 17,500 foot-pounds impact resistance as certified by a manufacturer's label which must be attached. The edge ropes shall have a minimum breaking strength of 5000 lbs. Forged steel safety hooks or shackles shall be used to fasten the net to its supports.

Employees working over or near water, where the danger of drowning exists, shall wear a U.S. Coast Guard approved life jacket or buoyant work vest. Scaffolding shall be the light weight type especially designed for bridge work to reduce the amount of weight each man has to handle. Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations.

Distance between ring buoys shall not exceed 200 feet. At least one life saving boat shall be immediately available at locations where employees are working over water.

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Power operated single point suspension rigging (spiders and similar devices) must have fully enclosed gears and brakes. Those equipped with an emergency brake should engage the brake automatically. The cage, basket and / or fly decks must be completely enclosed with top rails, mid rails and toe boards of at least 4 inches in height. All mechanical items must be serviced immediately prior to use and at least every thirty days during continuous use. Occupants will use harnesses attached to life lines, life lines to be secured independently from rigging attachment point. Sky locks or similar device will be used. Check cable for nicks, kinks or other damaged areas; replace the cable if required.

Power operated tow point suspension rigging (sky climbers and pick-commonly called a swing stage) shall be attached to a structurally sound portion of the building or structure. Harnesses and life lines will be used by all personnel on the swing stage (limited to two). Life line shall be secured independently from the rigging attachment point. Stage shall have a back rail, mid rail and toe board of at least 4 inches, railings and toe board shall be on both ends and back of stage. Pick to be at least 20 inches wide.

Boatswain's chair seats may not be less than 12 x 24 inches and 1 inch in thickness. The seat shall be reinforced on the underside by cleats securely fastened to prevent the board from splitting. The two fiber rope seat slings shall be of 5/8 inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat. Seat slings shall be at least 3/8 inch wire rope when an employee is conducting heat producing processes, such as gas welding or cutting. A harness and life line shall be used. The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8 inch diameter first-grade manila rope or equivalent. The roof hooks, irons or the object to which the tackle is anchored, shall be securely installed. Tiebacks, when used, shall be installed at right angles to the face of the building and securely fastened.

VII. Training

Employees using, constructing or inspecting scaffolds shall have the applicable training as outlined in the OSHA standard 1926.454. This training shall be provided by a competent person and documented according to the recordkeeping guidelines. Trainees shall demonstrate competence through various forms of testing before being allowed to work on scaffolds.

	<p align="center">Health & Safety Manual</p>	<p>M&D Procedure No. 019 Page 1 of 1 Revision No:</p>
	<p align="center">Process Safety Management Program</p>	

I. Purpose:

M & D Coatings, Inc. wishes to convey to the employee the importance of this program as an operating fixture of our safety and health process. In the event of an incident, M & D Coatings, Inc.'s objective is to provide employees with the training necessary to protect their safety and health.

II. Scope:

In order to ensure that this program is properly implemented, M & D Coatings, Inc.'s health and safety administrator has been designated as policy administrator. This procedure applies to all employees.

III. Applicability

The Occupational Safety and Health Administration requires employers to develop and implement a written safety and health program for their employees involved in hazardous waste operations. The program shall be designed to identify, evaluate, and control safety and health hazards while providing for emergency response for hazardous waste operations.

Because of the selective nature of M & D Coatings Inc.'s work, this standard does not apply to their business operations. Employees of M & D Coatings Inc. will not participate in emergency response activities of the host employer. Employees on site will be instructed to evacuate work areas immediately until otherwise notified by the host facility job representative.

M & D Coatings, Inc. will adopt all programs and policies of the host facility as their own. Policies will be obtained through the job representative at the start of the project.

IV. Training

Training regarding process safety will be provided by the host facility upon initial orientation. This training will be specific to each contract site serviced by M & D Coatings, Inc. Training will be documented and retrained by M & D Coatings Inc.'s central office. Training shall be scheduled through the host facility job representative before work begins.

**EMERGENCY ACTION PLAN
PROCEDURE**

EVACUATION PLAN

**M&D COATINGS, INC.
5695 OLD MILLINGTON ROAD
MILLINGTON, TENNESSEE 38053**

Prepared by

**SCS ENVIRONMENTAL
114 BAILEY DRIVE
OLIVE BRANCH, MISSISSIPPI 38654**

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APPENDIX

APPENDIX A	MSDS FORMS
APPENDIX B	EMERGENCY CONTRACTORS
APPENDIX C	INCIDENT CHECKLIST
APPENDIX D	INVENTORY CHECKLIST

I. PURPOSE

The Emergency Action Plan (EAP) protects the worker, the community, and the environment in emergency situations resulting from fires, explosions, hostage negotiations, ice or snow storms, or the release of all types of hazardous substances, including extremely hazardous substances, CERCLA hazardous substances, RCRA hazardous wastes, and any substance listed by the U.S. Department of Transportation as a hazardous material. The requirements for an EAP at hazardous waste sites are provided in 29 CFR 1910.120.

II. SCOPE AND RESPONSIBILITY

This procedure covers M&D Coatings, Inc. (M&D), employees, contractors, emergency response personnel, and subcontractors.

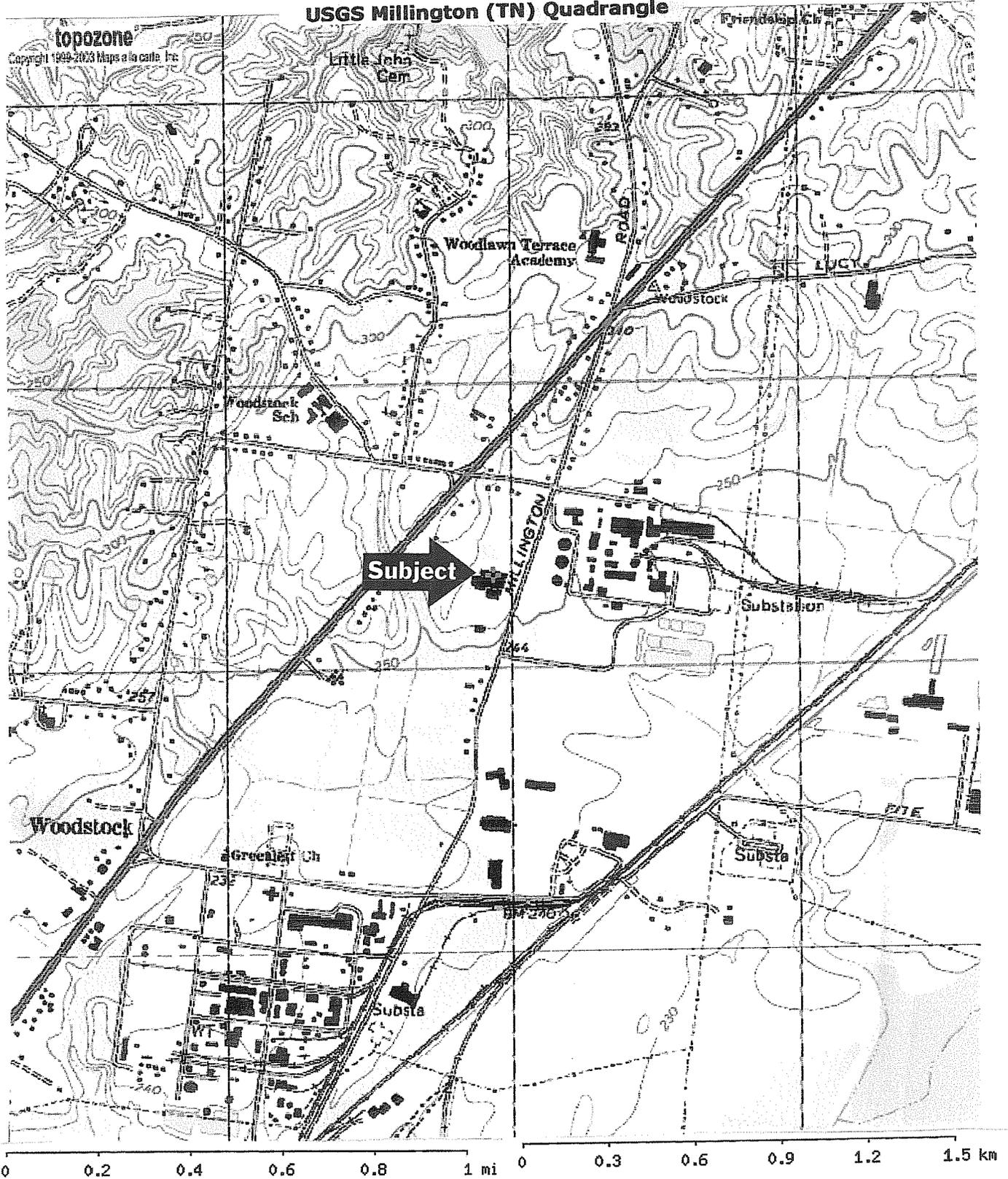
III. BACKGROUND

M&D is located at 5695 Old Millington Road, Millington, Shelby County, Tennessee 38168. Michael Mays is the owner of this facility that sandblasts and paints a variety of fabricated items for industrial applications. Refer to **Figure 1** for the topographical location of the facility and **Figure 2** for the general layout of the facility. The facility also stores paint, diesel fuel, paint thinner, and hazardous waste within the facility's premises. The facility's North American Industry Classification System (NAICS) Code is 238320. The facility falls under Sector AA and Standard Industrial Classification (SIC) codes 1721, 3471, and 3499. The EPA ID No. is TNR 000012369.

IV. IMPLEMENTAION

This plan will be implemented immediately whenever there is a fire, explosion, or release of hazardous materials that could threaten human health or the environment.

UTM 16 229930E 3908115N (NAD27)
USGS Millington (TN) Quadrangle



SCS

ENVIRONMENTAL GROUP, LLC

114 BAILEY DR. OLIVE BRANCH, MISSISSIPPI 38654
OFFICE 662-893-6700 * FAX 662-890-6088

M&D COATINGS, INC.
5695 OLD MILLINGTON ROAD
MILLINGTON, TENNESSEE

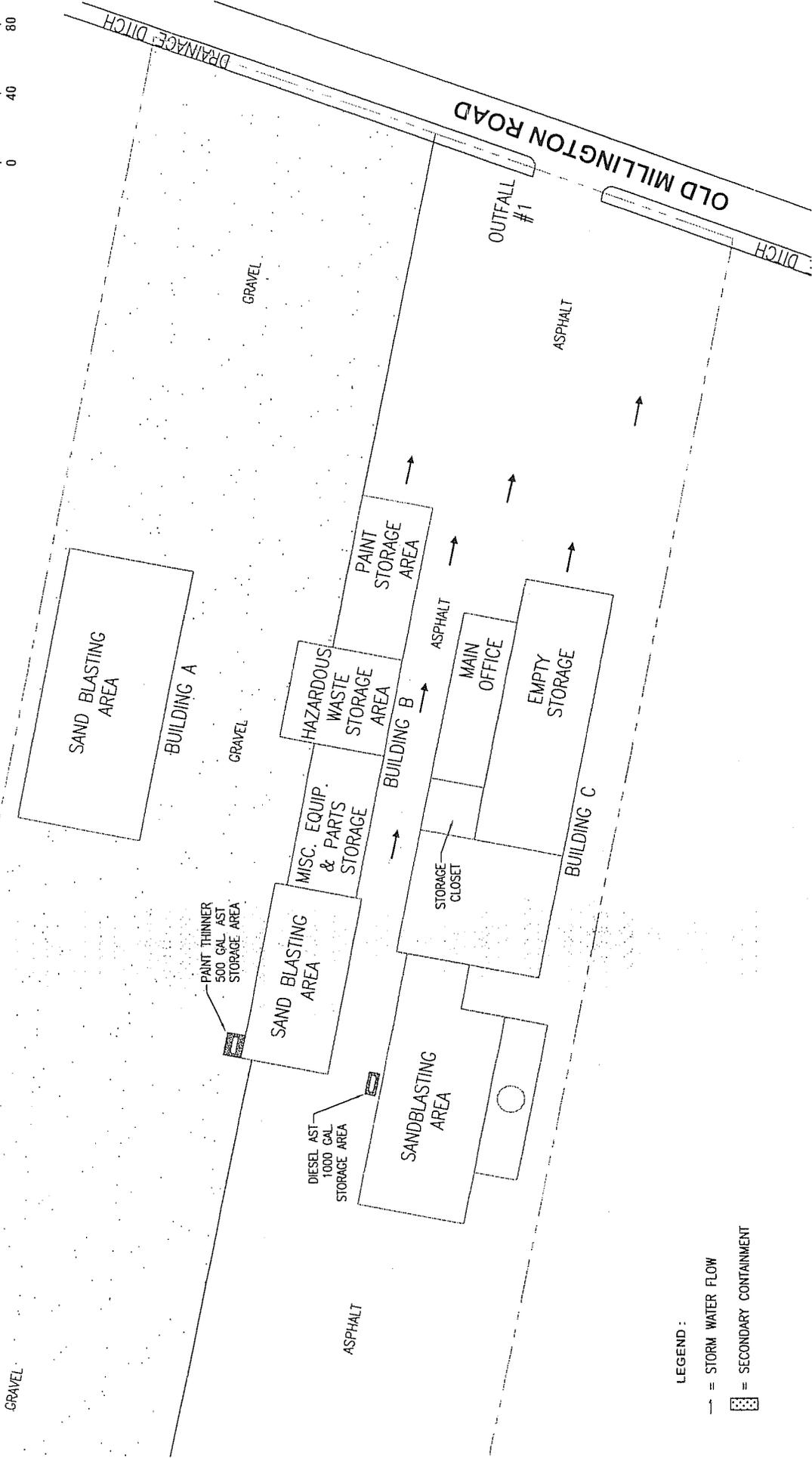
TOPOGRAPHIC
SITE MAP

FIGURE

1



SCALE IN FEET
0 40 80



LEGEND :

— = STORM WATER FLOW

☒ = SECONDARY CONTAINMENT

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M & D COATINGS, INC.
 5695 OLD MILLINGTON ROAD
 MILLINGTON, TENNESSEE

SITE PLAN

FIGURE
2

Emergency response procedures to releases of specific chemicals at the facility can be found detailed on the Material Safety Data Sheets (MSDS) provided in **Appendix A**. Copies of this plan will be maintained at M&D and SCS Environmental Group, LLC (SCS), 114 Bailey Drive, Olive Branch, Mississippi, 38654. Copies of the plan have been sent to Shelby County Fire Department, Shelby County Police Department, local hospitals (The Med-trauma and Methodist North) and the Shelby County Emergency Management Agency.

V. PRE-EMERGENCY PLANNING

M&D is located within Shelby County; therefore, the Shelby County Fire Department will respond to an emergency upon request. M&D has set up a chain of command in case of an emergency.

Employees are typically found working in the main office, at the sand blasting area in Building A, at the sand blasting area in Building B, and in the sand blasting area in Building C. If employees are not sand blasting on-site, then they are typically working between Building C and Building B. Paul Blansett is the Shop Foreman and all employees will report an emergency to him. Mr. Blansett then will report to Michael Mays. Mr. Mays will then contact the Shelby County Fire Department by dialing 911. If an emergency arises in the field then employees will contact Rick Swords who will then contact emergency personnel and then contact Mr. Mays.

The Shelby County Fire Department and Shelby County Police Department have been familiarized with 1) the layout of the facility; 2) places where personnel would normally be working; and 3) possible evacuation routes.

Arrangements have been made with several emergency response contractors to respond to emergencies at M&D, if required. A listing of these contractors are located in **Appendix B**, **“Emergency Response Contractors.”**

The Shelby County Emergency Management Agency has been made aware of the properties of the hazardous waste handled at M&D and the types of injuries or illnesses that can result from fires, explosions, or releases of hazardous waste at the facility.

a. Fires

Small fire: In the event of a small fire that can be extinguished easily without endangering personnel, the fire will be put out as quickly as possible using fire control equipment (fire extinguishers located throughout facility) located on site and internal notifications.

Significant fire: In the event of a significant fire, that endangers the safety of personnel, the first person to become aware of the situation will immediately call the Shelby County Fire Department (911) and the evacuation plan will immediately be implemented with all employees located on-site. The evacuation routes are shown in **Figures 3A-3C**. Refer to **Figure 3C** for the fire evacuation plan

b. Tornado

In the event of a tornado warning in the area, all personnel are to take proper cover in the main office located on the eastern side of Building C. The evacuation plan for a tornado situation is shown on **Figure 3B**.

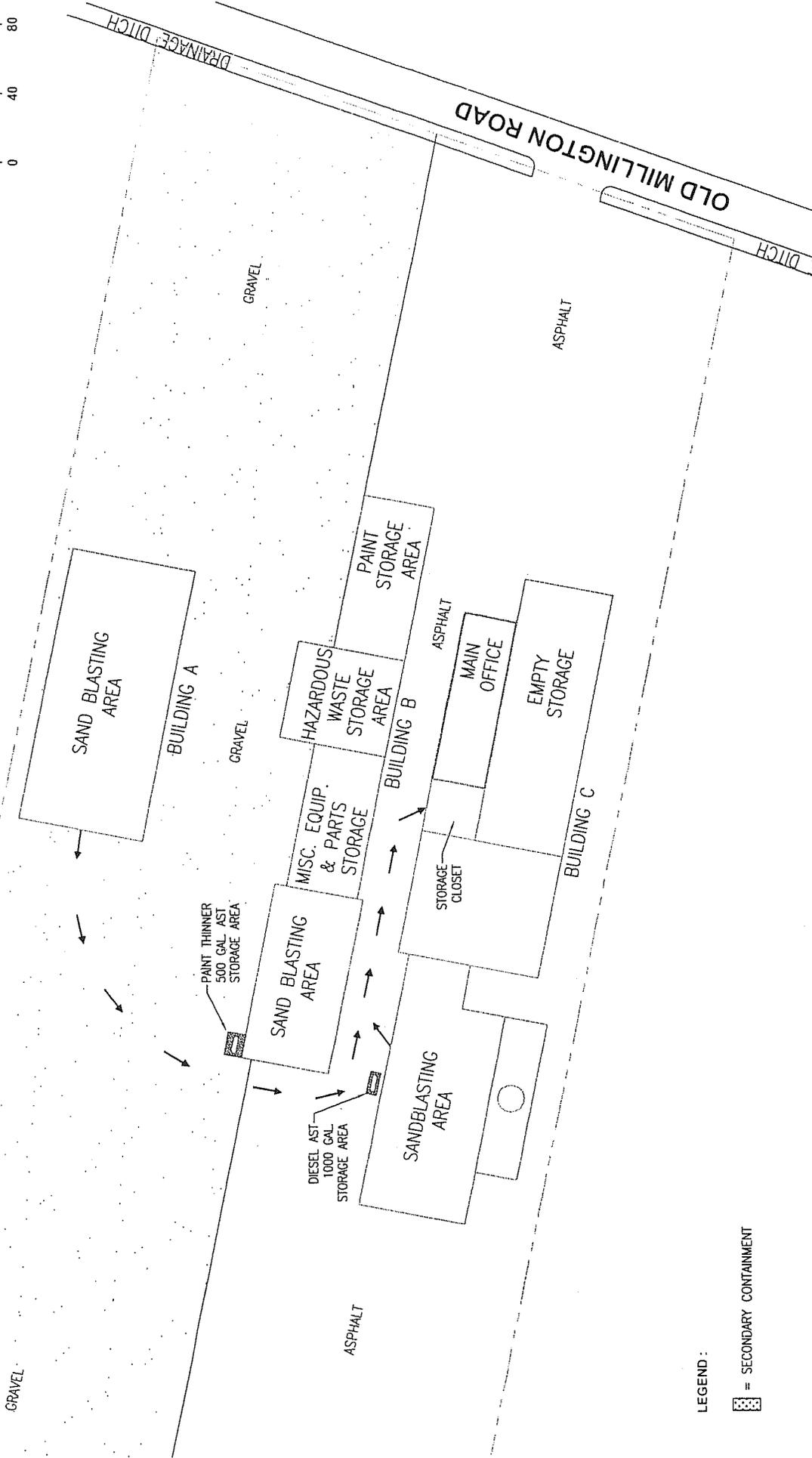
c. Chemical/Hazardous Material Release

Emergency response information regarding specific chemicals found at the site are provided on MSDSs located in **Appendix A** of this document or in the main office at the site.

Any release of hazardous chemicals or hazardous waste will be contained immediately, to the extent that safety is not compromised. Sand or oil dry will be used as the absorbent material to contain and/or clean up spilled material.



SCALE IN FEET
0 40 80



LEGEND:

 = SECONDARY CONTAINMENT

FIGURE
3A

TORNADO EVACUATION
PLAN

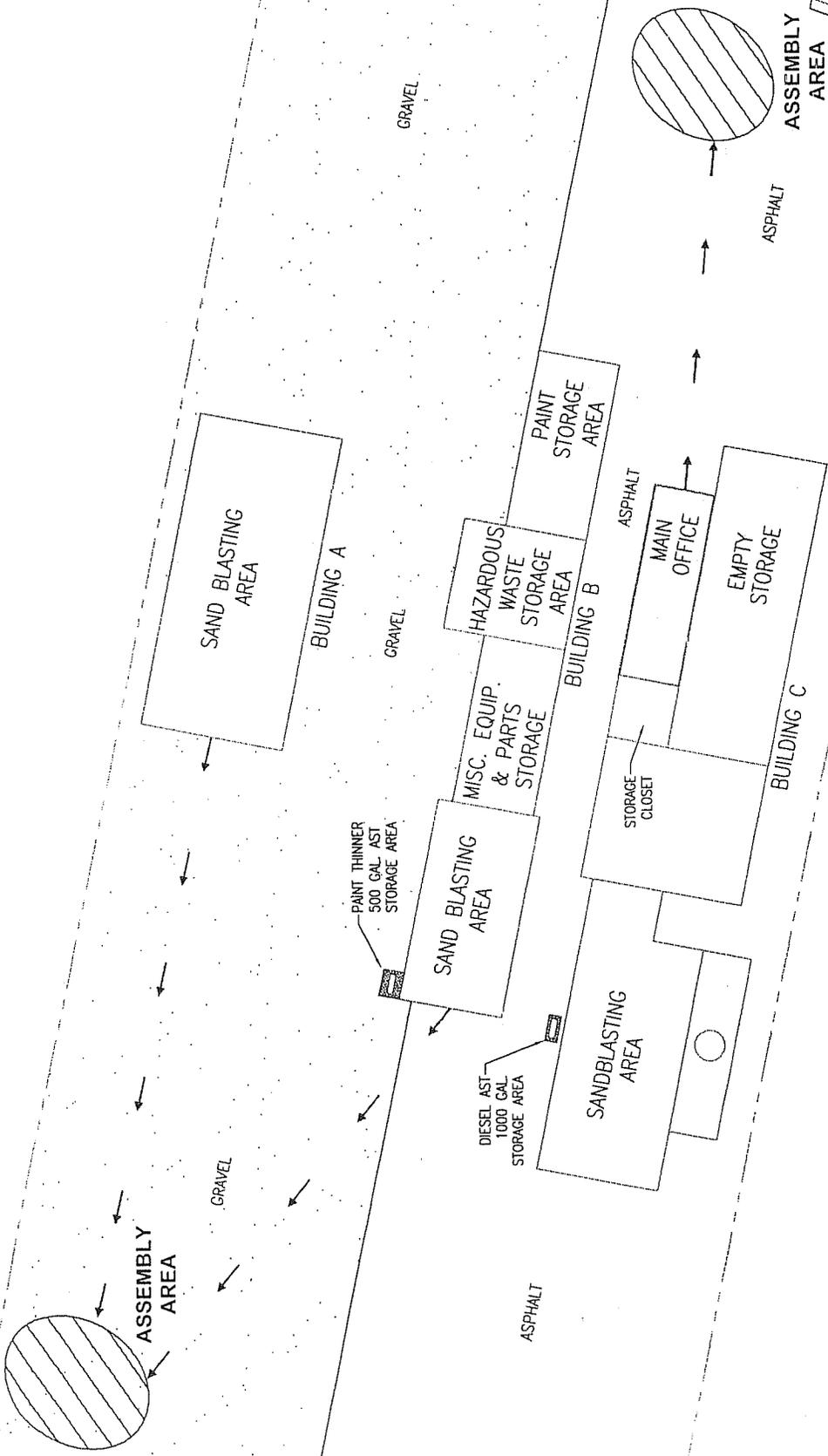
M & D COATINGS, INC.
5695 OLD MILLINGTON ROAD
MILLINGTON, TENNESSEE

SCS
ENVIRONMENTAL GROUP, LLC
114 BAILEY DR. OLIVE BRANCH, MISSISSIPPI 38654
OFFICE 662-893-6700 * FAX 662-890-6088



SCALE IN FEET
0 40 80

OLD MILLINGTON ROAD
DRAINAGE DITCH



LEGEND:
[Symbol] = SECONDARY CONTAINMENT

FIGURE
3C

FIRE EVACUATION
PLAN

M & D COATINGS, INC.
5695 OLD MILLINGTON ROAD
MILLINGTON, TENNESSEE

SCS
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114 BAILEY DR. OLIVE BRANCH, MISSISSIPPI 38654
OFFICE 662-893-6700 • FAX 662-890-6088

Michael Mays will immediately identify the character, exact source, amount and extent of any released material as a result of a release, fire, or explosion. This will be done by observation, review of facility records, and/or manifests or chemical analysis (if necessary). If the identity of the released material is known, containment and clean up shall be accomplished using information provided on the MSDS. If the identity of the material is unknown, it is to be assumed that the material is corrosive, ignitable, and toxic. In this case, employees will refer to the chemical spill evacuation plan located in **Figure 3B**. Any tools used for containment and clean up should be spark proof, and appropriate personal protection equipment (PPE) will be used.

Spilled or released chemicals contained in diked areas will be pumped into storage tanks, holding tanks, or designated drums, as appropriate. Spilled materials recovered in this manner will then be recycled or shipped to a RCRA facility for treatment. All residues, which cannot be pumped, will be cleaned up using sand or oil dry and placed in drums for treatment and disposal. All contaminated PPE and materials will be drummed for disposal.

If release is of a size and nature that prevents it from being handled by facility personnel, an emergency response contractor will be notified to respond to the emergency. The contact information for the contractors is located in **Appendix B**. This will be coordinated with the Shelby County Fire Department and the Tennessee Emergency Response Commission, as necessary, by Michael Mays.

Emergency drills will be rehearsed periodically at the discretion of Michael Mays and this plan shall be reviewed at least annually by Mr. Mays to determine the adequacy of the plan and consistency with current legislation.

VI. PERSONNEL ROLES, LINES OF AUTHORITY & COMMUNICATIONS

M&D currently has 19 employees, not of all which are on-site at the same time. M&D is able to conduct painting requests on-site or at the customer's request, which would be off-site at another facility. In the event of an emergency the following personnel will be contacted in sequential order:

Position	Name	Work Phone	Home Phone	Cell Phone	Address
Plant Manager/ Emergency Coordinator	Michael Mays	901-353-3066	901-382-0474	901-237-1478	3101 Sleepy Hollow Rd Bartlett, TN 38134
Field Operations Manager/ Superintendent	Rick Swords	901-353-3066	901-872-6322	901-647-7700	6457 Old Tipton Road Millington, TN 38053
Shop Foreman	Paul Blansett	901-353-3066	870-792-7105	901-647-7702	817 Hwy 149S Tyronza, AR 72386
Environmental Specialist	Shawn Pool	662-893-6700		901-619-9158	

Michael Mays is the primary emergency coordinator. If Mr. Mays is unavailable, Rick Swords will resume responsibility and so forth. If an emergency arises at the M&D facility, employees will notify Paul Blansett who will then notify Rick Swords that will then take the issue to Mr. Mays. Mr. Mays will then call necessary emergency response personnel. If an emergency arises out in the field while on another job, then employees will notify Rick Swords who will immediately call necessary emergency response personnel and then contact Mr. Mays.

Contacting requirements will vary depending on the nature of the emergency and current legislation. The following list is in no particular order. In the case of an emergency spill the National Response Center will be notified first following the ambulance for any health and safety issues.

Organization	Phone	Alternate Phone
Ambulance	911	901-379-7070
Fire Department	911	901-379-7070
City Police	911	901-379-7625
National Response Center	1-800-424-8802	
Shelby County EMA	1-901-458-1515	
Utilities-MLGW	1-901-528-4465	

Poison Control Center	1-800-222-1222	
State EMA	1-800-262-3400	
Tennessee Department of Public Safety	1-615-251-5131	
TDEC City Office	1-901-368-7939	

VII. EMERGENCY RECOGNITION AND PREVENTION

Site briefings will be held as necessary to inform all employees of new developments, tasks, and hazards associated with work at the site. These briefings will include:

- Tasks to be performed;
- Specific chemical and physical hazards that may be encountered, including their effects;
- How to recognize symptoms or monitor them, concentration limits, or other danger signals;
- Transportation routes along which hazardous substances move;
- Additional hazards as a direct result of site activities, as well as prevention and control techniques/mechanisms; and
- Emergency Procedures

Personnel will be familiar with techniques of hazard recognition from pre-assignment training and site-specific briefings. Personnel will also be knowledgeable of the fire hazards associated with the materials and processes to which they are exposed. Michael Mays will conduct periodic emergency drills to insure employee understanding.

VIII. SAFE DISTANCES AND PLACES OF REFUGE

Safe distances are estimated based on emergency scenarios. Actual safe distances will be determined at the time of an emergency; based on site and incident specific factors.

Factors to consider at time of incident are:

- Toxicological properties of substances
- Physical state of substances
- Quantity and rate of release
- Method of release
- Atmospheric conditions
- Local topography

- Receptors

Employees will seek refuge in the main office for tornado emergencies only. The main office has water, communications with site emergency operations center, first aid supplies, and fire extinguishers. Fire extinguishers are located in the main office, paint Storage, Waste Paint Storage, Waste Paint Pour-up, Building A, Building B, Building C. If a large fire or spill exists on-site, employees will immediately go to the west and east edges of the property labeled “assembly area” shown on the evacuation plans and call for the Shelby County Fire Department.

IX. SITE SECURITY AND CONTROL

Michael Mays is aware of all employees on-site each day and in case of an emergency all employees will be accounted for. Mr. Mays will also contact the emergency response clean-up team immediately in case of an emergency.

X. EVACUATION ROUTES

The evacuation routes are located in **Figure 3A- Figure 3C**.

Tornado: Employees will seek refuge in the main office as shown in **Figure 3A**.

Chemical Spill: Employees will go to the nearest “assembly area” located on the eastern or western side of the property as shown of **Figure 3B**. If by chance the eastern area is blocked due to a spill, employees will seek refuge at the western assembly area, and vice versa.

Significant Fire: Employees will go to the nearest “assembly area” located on the eastern or western side of the property as shown in **Figure 3C**. If by chance the eastern area is blocked due to a fire, employees will seek refuge at the western assembly area, and vice versa.

XI. DECONTAMINATION PROCEDURES

Possible chemicals encountered at M&D and their hazards are detailed on the MSDSs located in **Appendix A**. Decontamination will occur in the contamination reduction zone whenever workers exit the exclusion zone. These zones will be established by the emergency clean-up response team at the time of the incident. Decontamination should not occur when it might aggravate an injury or delay life-saving treatment. In this case, victims will be wrapped in blankets or plastic to reduce the amount of contamination of other personnel. Emergency and off-site personnel should be alerted to potential contamination and given specific decontamination procedures. Once the work is completed, PPE and tools will be flushed with large amounts of water to eliminate any of the above hazards. If PPE is not reusable, then it will be placed in waste PPE drums.

XII. EMERGENCY MEDICAL TREATMENT AND FIRST AID

Mr. Mays must have a person on-site and on each job that is certified in first aid and CPR. In the event of a medical emergency, trained certified personnel will respond. Shelby County EMS emergency personnel may be dispatched by dialing 911. Michael Mays and his designee are responsible for making sure the emergency first aid station is maintained, restocked and well supplied during each inspection and after each emergency situation.

XIII. EMERGENCY ALERTING AND RESPONSE PROCEDURES

An emergency on-site is reported via phone. If the power is out, the chain of authority employees are supplied with cell phones. Upon reporting an emergency, the caller will provide the nature of emergency, location, request appropriate personnel or outside emergency responders to be dispatched, as applicable.

In the event of any fire, explosion, spill, or any other emergency that results in the implementation of this procedure. Michael Mays will complete the incident checklist in **Appendix C**. In the event of a plant evacuation, the safety team members will collect the

visitor/vendor logs as well as the process occupancy logs in order to do an accurate head count at the assembly point.

XIV. PPE AND EMERGENCY EQUIPMENT

All PPE will be available in the main office at M&D. Michael Mays or his designee will ensure that all medical equipment inventories are maintained. Fire extinguishers are centrally located throughout the facility. All fire extinguishers will be inspected monthly and recharged annually, or as required. Spill equipment will be stored in designated places throughout facility in all three buildings that will be easily accessible and will be labeled as emergency equipment. Each spill kit consists of (2) five gallon buckets, (1) broom, (1) shovel, (2) goggles, (2) pair of gloves, and oil dry. These tools will be used if a spill arises on-site. A complete listing of spill kits, first aid supplies, PPE, and fire extinguishers are located in **Appendix D**.

Items listed in the First-Aid kit will be used as needed and will be available to employees at any time. Fire extinguishers located around the facility will be used if a small fire exists and will be easily accessible to any employee. Spill kits located around the facility will be used if a spill arises on-site.

XV. REPORTING PROCEDURES

M&D will notify specified government agencies in the event of a hazardous chemical release or certain emergency situations. Notification is dependent on the nature of the incident and/or what chemical is released, how much of the chemical is released to the environment or is confined to the plant facilities and its structures, as well as if the incident resulted in fatalities or hospitalization of three or more personnel.

This plan satisfies the requirements of various laws which contain notification provisions: the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); the Clean Water Act (CWA); the Emergency Planning and Community Right-to Know Act

(EPCRA); the Resource, Conservation and Recovery Act (RCRA); and the Tennessee Occupational Safety and Health Act (TOSHA).

Reportable Releases/Incidents must satisfy the following conditions:

- The chemical released must be either a hazardous substance or an extremely hazardous substance
- The chemical must be in an amount that is equal to or above its reportable quantity (RQ)
- The release must be to the environment. A release that is contained within the plant building or its structures (dikes, concrete pads, sumps, etc.) is **not** reportable. A release of a hazardous chemical to the Utility system, such a drain, **is** reportable.
- An emergency incident (explosion, fire, chemical release) is reportable under RCRA rules if the incident requires implementation of the contingency plan and/or evacuation of local areas.

An incident is reportable under TOSHA rules if any fatalities resulted or if hospitalization of three or more personnel occurred, or if lost work resulted. Upon implementing this contingency plan, Michael Mays must determine possible hazards to human health and the environment outside the facility resulting from the release, fire, or explosion. If the assessment of Mr. Mays indicates that an evacuation of local areas may be advisable, local authorities will be notified immediately. Refer to table above for all emergency numbers.

APPENDIX A

MATERIAL SAFETY DATA SHEET



SECTION 1 - PRODUCT AND COMPANY INFORMATION

PPG/Porter Paints
400 South 13th Street
Louisville, KY 40203

EMERGENCY PHONE NUMBERS (412) 434-4515 (U.S.)
(24 hours/day):

(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)
0532-83889090 (China)

TECHNICAL (866) 823-2585

INFORMATION:

PRODUCT SAFETY/MSDS INFORMATION: (412) 492-5555 7:00 a.m.
- 4:30 p.m. EST

Product ID: PP2809 (0878)
PRODUCT NAME: PORTER GUARD DTM SATIN -
SYNONYMS: None
ISSUE DATE: 04/30/2007
EDITION NO.: 6
CHEMICAL Acrylic
FAMILY:

EMERGENCY OVERVIEW:

CAUSES EYE IRRITATION. MAY CAUSE SLIGHT SKIN IRRITATION.
VAPOR AND/OR SPRAY MIST MAY BE HARMFUL IF
INHALED. HARMFUL IF SWALLOWED. This product is not expected to
present any unusual hazards under fire or spill conditions. Read entire
MSDS before use.

SECTION 2 - COMPOSITION INFORMATION

The following ingredient(s) marked with an "x" are considered hazardous under applicable U.S. OSHA and/or Canadian WHMIS regulations. If no ingredients are listed, then there are no U.S. OSHA and/or Canadian WHMIS hazardous ingredients in this product.

Material/ CAS Number	Percent	Hazardous
TITANIUM DIOXIDE 13463-67-7	10 - 30	X
DIATOMACEOUS EARTH 61790-53-2	1 - 5	X

SECTION 3 - HAZARDS IDENTIFICATION

ACUTE OVEREXPOSURE EFFECTS

EYE CONTACT:

Causes eye irritation. Redness, itching, burning sensation and visual disturbances may indicate excessive eye contact.

SKIN CONTACT:

May cause slight skin irritation. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

SKIN ABSORPTION:

Skin absorption not expected to occur.

INHALATION:

Vapor and/or spray mist may be harmful if inhaled.

INGESTION:

Harmful if swallowed.

SIGNS & SYMPTOMS OF OVEREXPOSURE:

Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Not applicable.

CHRONIC OVEREXPOSURE EFFECTS

Avoid long-term and repeated contact.

The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures. See Section 11, of this MSDS for a detailed list of chronic health effects information available on individual ingredients in this product.

SECTION 4 - FIRST AID MEASURES

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available.

EYE CONTACT:

Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary.

SKIN CONTACT:

Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. If any symptoms persist, contact a poison control center, emergency room, or physician as further treatment may be necessary.

INHALATION:

Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

INGESTION:

Gently wipe or rinse the inside of the mouth with water. Sips of water may be given. Never give anything by mouth to an unconscious person. Contact a poison control center, emergency room or physician right away as further treatment may be necessary.

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASHPOINT: >200 Degrees F (> 93 Degrees C)

FLASHPOINT TEST METHOD:

Pensky-Martens Closed Cup

UEL: Not Available.

LEL: Not Available.

AUTOIGNITION TEMPERATURE:

Not Available.

EXTINGUISHING MEDIA:

Use National Fire Protection Association (NFPA) Class B extinguishers (carbon dioxide, dry chemical or universal aqueous film forming foam) designed to extinguish NFPA Class IIIB combustible liquid fires.

PROTECTION OF FIREFIGHTERS:

Water spray may be ineffective. Water spray may be used to cool closed containers that are exposed to extreme heat. If water is used, fog nozzles are preferable. Firefighters should wear self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode or burst (due to the build-up of steam pressure) when exposed to extreme heat. May produce hazardous decomposition products when exposed to extreme heat. Extreme heat includes, but is not limited to, flame cutting, brazing, and welding.

SECTION 6 - ACCIDENTAL RELEASE MEASURE

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only personnel equipped with proper respiratory, skin, and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sand, vermiculite, or other noncombustible absorbent material and place in clean, empty containers for disposal. Only the spilled material and the absorbant should be placed in this container.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:

If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

STORAGE:

Protect from freezing.

SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION
ENGINEERING CONTROLS:

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in Section 8 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

PERSONAL PROTECTIVE EQUIPMENT

EYES:

Wear safety glasses with side shields.

SKIN/GLOVES:

Wear protective clothing. Gloves should be constructed of: neoprene rubber or nitrile rubber. No specific permeation/degradation testing have been done on protective clothing for this product. Recommendations for skin protection are based on infrequent contact with this product. For frequent contact or total immersion, contact a manufacturer of protective clothing for appropriate chemical impervious equipment. Clean contaminated clothing and shoes.

RESPIRATOR:

Where ventilation is inadequate, use a NIOSH- approved air purifying respirator with the appropriate chemical cartridges or positive- pressure, air-supplied respirator. Read the respirator manufacturer's instructions and literature carefully to determine the type of airborne contaminants against which the respirator is effective, its limitations, and how it is to be properly fitted and used. Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in Section 2 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

GENERAL HYGIENE - ESTABLISHED EXPOSURE LIMITS

If Threshold Limit Values (TLVs) have been established by ACGIH, OSHA, Ontario or PPG, they will be listed below. These limits are intended for use in the practice of industrial hygiene as guidelines or recommendations in the control of potential workplace health hazards. These limits are not a relative index of toxicity and should not be used by anyone without industrial hygiene training.

Material/ CAS Number	Percent	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
TITANIUM DIOXIDE 13463-67-7	10 - 30	10 mg/m ³	Not established	10 mg/m ³	Not established
DIATOMACEOUS EARTH 61790-53-2	1 - 5	R- 3 MG/m ³	Not established	6 mg/m ³	Not established

Material/ CAS Number	Percent	Ontario TWA	Ontario STEL	PPG IPEL	PPG STEL
TITANIUM DIOXIDE 13463-67-7	10 - 30	10 MG/m ³	Not established	Not established	Not established
DIATOMACEOUS EARTH 61790-53-2	1 - 5	R- 3 MG/m ³	Not established	Not established	Not established

Key: ACGIH=American Conference of Governmental Industrial Hygienists; OSHA=Occupational Safety and Health Administration; TLV=Threshold Limit Value; TWA=Time Weighted Average; PEL=Permissible Exposure Limit (1989 Vacated values); IPEL=Internal Permissible Exposure Limit; Ceiling=TLV or PEL Ceiling Limit; STEL=TLV or PEL Short-Term Exposure Limit; Skin= Skin Absorption Designation. [C- Ceiling Limit; S-Potential Skin Absorption; R-Respirable Dust] Additional Information Not applicable.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES
(FORMULA VALUES, NOT SALES SPECIFICATIONS)

SPECIFIC GRAVITY:	1.243
PHYSICAL STATE:	Liquid
Percent Solids:	49.60
Percent Volatile by Volume:	63.190
pH:	Not available.
ODOR THRESHOLD:	Not available.
Vapour Pressure:	17.8 mmHg
ODOR/APPEARANCE:	Viscous liquid with an odor characteristic of the chemical family and any solvents listed in Section 2.
VAPOR DENSITY:	HEAVIER THAN AIR
Evaporation Rate:	35
BOILING POINT OR RANGE:	212 - 489Degrees F
Freezing Point or Range:	Not Applicable.
Melting Point or Range(°C):	Not Applicable.
Partition coefficient (n-octanol/water):	Not Applicable.
WEIGHT PER GALLON:	10.36 (U.S.) / 12.4 (IMPERIAL)

SECTION 10 - STABILITY AND REACTIVITY

STABILITY:

This product is normally stable and will not undergo hazardous reactions.

CONDITIONS TO AVOID:

None Known.

INCOMPATIBLE MATERIALS:

Avoid contact with strong alkalis, strong mineral acids, or strong oxidizing agents.

HAZARDOUS POLYMERIZATION:

None Known.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Carbon monoxide - Carbon dioxide - Acrylic monomer - Lower molecular weight polymer fractions - Silicon oxides

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Material/ CAS Number	Percent	ORAL LD50 (g/kg)	DERMAL LD50 (g/kg)	INHALATION LC50 (mg/l)
TITANIUM DIOXIDE 13463-67-7	10 - 30	10.00 g/kg	Not Available	Not Available

CHRONIC TOXICITY

Ingredient Target Organ/Chronic Effects:

- Carcinogen - Lung

Mutagenicity Toxicity:

This has not been tested for this product.

Reproductive Toxicity:

This has not been tested for this product.

SUPPLEMENTAL HEALTH INFORMATION:

PPG/Porter Paints
400 South 13th Street
Louisville, KY 40203

Product ID: PP2809 (0878)
PRODUCT NAME: PORTER GUARD DTM SATIN -

Material/ CAS Number	Percent	Ingredient Specific Animal Data:
TITANIUM DIOXIDE 13463-67-7	10 - 30	This product contains titanium dioxide. Animals inhaling massive quantities of titanium dioxide dust in a long-term study developed lung tumors. Studies with humans involved in manufacture of this pigment indicate no increased risk of cancer from exposure.

Health (chronic): Yes
Fire (flammable): No
Pressure: No
Reactivity: No
WHMIS HAZARD CLASS: - Class D, Division 2, Subdivision A

STATE/PROVINCIAL REGULATIONS
Additional Information

Material/ CAS Number	Percent	IARC	IARC	IARC	ACGIH Carc.	NTP Known Carc.	OSHA Carc.
		Group 1(Kno wn Human Carc.)	Group 2A (Proba ble Carc.)	Group 2B (Suspec ted Carc.)			
TITANIUM DIOXIDE 13463-67-7	10 - 30	N	N	Y	N	N	N

SECTION 12 - ECOLOGICAL INFORMATION

POTENTIAL ENVIRONMENTAL EFFECTS
Ecotoxicity: No Information Available.

ENVIRONMENTAL FATE
Mobility: No information available.
Biodegradation: No information available.
Bioaccumulation: No Information Available.

PHYSICAL/CHEMICAL
Hydrolysis: No information available.
Photolysis: No information available.

Key: IARC- International Agency on the Research of Cancer; ACGIH- American Conference of Governmental Industrial Hygienists; NTP- National Toxicology Program *Denotes chemical as NTP Known Carcinogen; + Denotes NTP Possible Carcinogen; OSHA- Occupational Safety and Health Administration.

SECTION 13 - DISPOSAL CONSIDERATIONS

Provide maximum ventilation, only personnel equipped with proper respiratory and skin and eye protection should be permitted in the area. Take up spilled material with sawdust, vermiculite, or other absorbent material and place in containers for disposal. Waste material must be disposed of in accordance with federal, state, provincial and local environmental control regulations. Empty containers should be recycled by an appropriately licensed reconditioner/salvager or disposed of through a permitted waste management facility. Additional disposal information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

SECTION 16 - OTHER INFORMATION

Hazard Rating Systems
NFPA Rating: 1 10
HMIS Rating: 1*10

Rating System: 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe, * =Chronic Effects.

HMIS=Hazardous Materials Identification System; NFPA=National Fire Protection Association;

Safe handling of this product requires that all of the information on the MSDS be evaluated for specific work environments and conditions of use.

SECTION 14 - TRANSPORTATION INFORMATION

Proper Shipping Name: Paint- Non-Regulated Goods
NOS Technical Name: None
Hazard Class: None
Subsidiary Class(es): None
UN Number: None
Packing Group: None

PREPARED BY: Product Safety Department
REASON FOR REVISION: Section 9 has been updated. Date. Edition. Updated MSDS format.

USA - RQ Hazardous Substances: None
USA-RQ Hazardous Substance None
Threshold Ship Weight:
Marine Pollutant Name: None

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200), the supplier notification requirements of SARA Title III, Section 313 and other applicable right-to-know regulations. Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.
PP2809 000009 (00459730.001)(04/27/07)
070427, 000, 0878

SECTION 15 - REGULATORY INFORMATION

INVENTORY STATUS
U.S. TSCA: This product and/or all of its components are listed on the U.S. TSCA Inventory or is otherwise exempt from TSCA inventory reporting requirements.

FEDERAL REGULATIONS
US Regulations

Material/ CAS Number	Percent	CERCLA HS - RQ (LBS)	SARA EHS- TPQ (LBS)	SARA 313
TITANIUM DIOXIDE 13463-67-7	10 - 30	Not Listed	Not Listed	Not Listed
DIATOMACEOUS EARTH 61790-53-2	1 - 5	Not Listed	Not Listed	Not Listed

*** END OF MSDS ***

SARA 311/312
Health (acute): No



Tnemec Company, Inc.
 123 West 23rd Avenue, Kansas City, MO 64116-3064
 Emergency Telephone: 800-535-5053 (INFOTRAC)
 Telephone: 816-474-3400

Material Safety Data Sheet (MSDS)

For coatings, resins and related materials, approved by the U.S. Department of Labor as essentially similar to form OSHA-20, meets requirements of CFR 29 Part 1910.1200, OSHA'S hazard communication standard. NPCA 1-84

PREPARED DATE: 08/17/2004 Series: F130-6602A Product Class: ACRYLIC EMULSION ENVIROFILL OFF WHITE PART A Page 1 of 2

SECTION 2 - HAZARDOUS INGREDIENTS

INGREDIENTS	CAS#	% By Wt.	VAPOR PRESS. MMHG @ 68 °F	OCCUPATIONAL EXPOSURE LIMITS						
				TLV - TWA	TLV - STEL	TLV - C	PEL - TWA	PEL - STEL	PEL - C	
CRYSTALLINE SILICA (QUARTZ)	14808-60-7	1.30		0000.100 MG/M3			0000.050 MG/M3			
TITANIUM DIOXIDE (TOTAL DUST)	13463-67-7	1-5		0010.000 MG/M3			0010.000 MG/M3			
TALC (RESPIRABLE DUST)	14807-96-6	1-5		0002.000 MG/M3						
ALUMINIUM SILICATE (TOTAL DUST)	1332-58-7	21-30		0010.000 MG/M3			0015.000 MG/M3			0050.000 PPM
TEXANOL	25265-77-4	1.94	1.000							
ETHYLENE GLYCOL**	107-21-1	4.06	.100							

** SARA Reportable Product

This product contains one or more reported carcinogens or suspected carcinogens which are noted NTP, IARC, or OSHA-Z in the other limits recommended column. This substance contains a material classified as a hazardous air pollutant. This product contains pigment dusts which may be released when subjected to abrasive blasting, sanding, or grinding.

SECTION 3 - HEALTH HAZARD INFORMATION

EMERGENCY OVERVIEW: POTENTIAL HEALTH EFFECTS: EYE: irritation Redness, tearing, blurred vision. SKIN: Mild irritation, drying of skin. INHALATION - OVEREXPOSURE TO SOLVENT VAPORS OR SPRAY MIST: Nasal and respiratory irritation, anesthetic effects, dizziness, weakness, fatigue, nausea, and headache. INHALATION - OVEREXPOSURE TO FREE PIGMENT DUST: Coughing, wheezing, shortness of breath, restricted nasal passages, lung injury. INGESTION: Gastrointestinal irritation, nausea, vomiting, diarrhea, death. CHRONIC EFFECTS: Prolonged inhalation of dusts containing crystalline silica may result in the development of a lung disease known as silicosis. NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the vapors may be harmful or fatal. This product contains crystalline silica which is considered a cancer hazard by inhalation of respirable dust. The International Agency for Research on Cancer (IARC) concluded that respirable crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1B). TARGET ORGANS: Can cause respiratory tract irritation. Can cause lung damage. Can cause eye irritation. Can cause kidney damage. Can cause nervous system effects. Can cause cancer. Risk of cancer depends on duration and level of exposure. OTHER: This product when mixed with other components acquires the hazards of all components. PRIMARY ROUTES OF ENTRY: Dermal and Inhalation. PROPOSITION 65: Pigments and/or other raw materials present in this product contain trace amounts of a chemical or chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush immediately with large amounts of clean water under low pressure for at least 15 minutes. Consult a physician. SKIN CONTACT: Wash affected area with soap and water. Remove contaminated clothing. Dispose of or launder accordingly. Consult a physician if skin irritation persists. INHALATION: Remove affected individual to fresh air. Treat symptomatically. If breathing is difficult, administer oxygen. If breathing has stopped give artificial respiration. Consult a physician. INGESTION: Drink 1 or 2 glasses of water to dilute. Do not induce vomiting. Consult a physician or poison control center IMMEDIATELY. Treat symptomatically. NOTE TO PHYSICIAN:

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION	FLASHPOINT	EXPLOSION LEVEL LOW	EXPLOSION LEVEL HIGH	FLAMMABILITY LIMITS LOWER	FLAMMABILITY LIMITS HIGHER
	-N/A °F	.6		-N/A	-N/A

EXTINGUISHING MEDIA: Foam, carbon dioxide, and dry chemical. **FIRE-FIGHTING PROCEDURES AND EQUIPMENTS:** Keep away from heat, open flames, sparks, and areas where static charge may be heavier than air and may travel considerable distance to a source of ignition and flash back. Water may be used to cool unruptured containers. Wear self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode to prevent inhalation of hazardous decomposition products. Use appropriate extinguishing media to control fire. Water may cause violent frothing if sprayed directly into containers of burning liquid.

SECTION 6 - SPILL OR LEAK PROCEDURES

CLEAN-UP: Spills may be collected with inert, absorbent material for proper disposal. Use protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable container for disposal.

SECTION 7 - SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store in dry area. Keep closures tight and upright to prevent leakage. Do not store in high temperature areas or near fire or open flame. Refer to product data sheet for recommended storage temperatures. **SPECIAL COMMENTS:** Prevent prolonged breathing of airborne contaminants such as vapor, spray mists, or dusts. Prevent contact with skin and eyes. Do not take Consult product data sheet for proper application instructions.

SECTION 8 - SAFE HANDLING AND USE INFORMATION

HYGIENIC PRACTICES: Wash hands and other contaminated skin areas with warm soap and water before eating. **EYE PROTECTION:** Use chemical resistant splash type goggles. **RESPIRATORY PROTECTION:** Respiratory protective devices must be used when engineering and administration controls are not adequate to maintain Threshold Limit Values (TLV) and Permissible Exposure Limits (PEL) of airborne contaminants below the listed values for those hazardous ingredients identified in Section II of this MSDS. Observe OSHA regulations for respirator use (CFR 29, 1910.134) whenever a respirator is used. Particulate, chemical cartridge, air purifying half-mask respirators can be used within certain limitations; consult the respirator manufacturer for specific uses and limitations. Where airborne contaminant concentrations are unknown, the use of a NIOSH/MSHA approved fresh-air supplied respirator is mandatory. **OTHER PROTECTION:** Use Chemical resistant gloves. Use chemical resistant coveralls or apron to protect against skin and clothing contamination. Use protective cream where skin contact is likely. **VENTILATION:** Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH's Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product. Heavier than air solvent vapors should be removed from lower levels of work area due to potential explosion hazard and all ignition sources (non-explosion proof equipment) should be eliminated if flammable mixtures will be encountered.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE	VAPOR DENSITY	LOWER BOILING RANGE	HIGHER BOILING RANGE	FORMULA WEIGHT BY VOLUME	VOC IN LBS PER GALLON	EVAPORATION RATE	%VOLATILE BY WEIGHT
1.00	-N/A	379.0 °F	500.0 °F	8,1053 LB/GAL	.729	.000 (Ether = 1)	39.308

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBILITIES: Strong oxidizing agents. **DECOMPOSITION:** Carbon monoxide, carbon dioxide, hydrocarbon fragments **CONDITIONS TO AVOID:** Heat, sparks, open flames. **POLYMERIZATION:** Will not occur. **STABILITY:** Stable.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of in accordance with Federal, state, and local regulations regarding pollution.

SECTION 16 - HMIS INFORMATION

Health: 3 Flammability: 1 Reactivity: 1

This is a condensed MSDS, providing safety and health information pertinent to the complete product series. Physical constants such as Wt./Gal., VOC content and chemical constituents will vary with color. Safety and health information may also vary with color. Certain colors may contain Carbon Black and Crystalline Silica, which have been identified as reported or suspected carcinogens. Prolonged inhalation of respirable dusts containing Crystalline Silica may result in the development of a lung disease known as silicosis. For a complete, color-specific MSDS, please contact your local Tremec representative listed at www.tremec.com. For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910. To the best of our knowledge, the information contained herein is accurate. However, neither the Tremec Company or any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

Material Safety Data Sheet (MSDS)

For coatings, resins and related materials, approved by the U.S. Department of Labor as essentially similar to form OSHA-20, meets requirements of CFR 29 Part 1910.1200, OSHA'S hazard communication standard. NPCA 1-84

PREPARED DATE: 02/10/2006 Series: F130-0130C Product Class: SALT SOLUTION ENVIROFILL RETARDER

SECTION 2 - HAZARDOUS INGREDIENTS

INGREDIENTS	CAS#	% By Wt.	VAPOR PRESS. MMHG @ 68 °F	OCCUPATIONAL EXPOSURE LIMITS					
				TLV - TWA	TLV - STEL	ACGIH	TLV - C	OSHA	
CITRIC ACID**	77-92-9	41-50						PEL - STEL	PEL - C

** SARA Reportable Product

This product contains no reported carcinogens or suspected carcinogens. The information contained in this section is considered confidential and proprietary and should be used only for safety and health purposes.

SECTION 3 - HEALTH HAZARD INFORMATION

EMERGENCY OVERVIEW: POTENTIAL HEALTH EFFECTS: EYE: Irritation SKIN: Mild irritation, drying of skin. INHALATION - OVEREXPOSURE TO SOLVENT VAPORS OR SPRAY MIST: Nasal and respiratory tract irritation. INHALATION - OVEREXPOSURE TO FREE PIGMENT DUST: INGESTION: CHRONIC EFFECTS: TARGET ORGANS: Can cause eye irritation. Can cause skin irritation. OTHER: PRIMARY ROUTES OF ENTRY: PROPOSITION 65: Pigments and/or other raw materials present in this product contain trace amounts of a chemical or chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush immediately with large amounts of clean water under low pressure for at least 15 minutes. Consult a physician. **SKIN CONTACT:** Wash affected area with soap and water. Remove contaminated clothing. Dispose of or launder accordingly. Consult a physician if skin irritation persists. **INHALATION:** Remove affected individual to fresh air. Treat symptomatically. If breathing is difficult, administer oxygen. If breathing has stopped give artificial respiration. Consult a physician. **INGESTION:** Drink 1 or 2 glasses of water to dilute. Do not induce vomiting. Consult a physician or poison control center IMMEDIATELY. Treat symptomatically. **NOTE TO PHYSICIAN:**

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION	FLASHPOINT	EXPLOSION LEVEL LOW	EXPLOSION LEVEL HIGH	FLAMMABILITY LIMITS LOWER	FLAMMABILITY LIMITS HIGHER
	200.0 °F	-N/A	-N/A	-N/A	-N/A

EXTINGUISHING MEDIA: FIRE-FIGHTING PROCEDURES AND EQUIPMENTS:

SECTION 6 - SPILL OR LEAK PROCEDURES

CLEAN-UP: Spills may be collected with inert, absorbent material for proper disposal. Use protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable container for disposal.

SECTION 7 - SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store in dry area. Keep closures tight and upright to prevent leakage. Do not store in high temperature areas or near fire or open flame. Refer to product data sheet for recommended storage temperatures. **SPECIAL COMMENTS:**

SECTION 8 - SAFE HANDLING AND USE INFORMATION

HYGIENIC PRACTICES: Wash hands and other contaminated skin areas with warm soap and water before eating. EYE PROTECTION: Use chemical resistant splash type goggles. RESPIRATORY PROTECTION: Respiratory protective devices must be used when engineering and administration controls are not adequate to maintain Threshold Limit Values (TLV) and Permissible Exposure Limits (PEL) of airborne contaminants below the listed values for those hazardous ingredients identified in Section 11 of this MSDS. Observe OSHA regulations for respirator use (CFR 29, 1910.134) whenever a respirator is used. Particulate, chemical cartridge, air purifying half-mask respirators can be used within certain limitations; consult the respirator manufacturer for specific uses and limitations. Where airborne contaminant concentrations are unknown, the use of a NIOSH/MSHA approved fresh-air supplied respirator is mandatory. OTHER PROTECTION: Use Chemical resistant gloves. Use chemical resistant coveralls or apron to protect against skin and clothing contamination. VENTILATION: Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH's Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE	VAPOR DENSITY	LOWER BOILING RANGE	HIGHER BOILING RANGE	FORMULA WEIGHT BY VOLUME	VOC IN LBS PER GALLON	EVAPORATION RATE	%VOLATILE BY WEIGHT
-N/A	-N/A	-N/A °F	-N/A °F	10.3690 LB/GL	.000	.000 (Ether = 1)	62.230

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBILITIES: DECOMPOSITION: CONDITIONS TO AVOID: POLYMERIZATION: Will not occur. STABILITY: Stable.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of in accordance with Federal, state, and local regulations regarding pollution.

SECTION 16 - HMIS INFORMATION

Health: 2 Flammability: 1 Reactivity: 0

This is a condensed MSDS, providing safety and health information pertinent to the complete product series. Physical constants such as Wt./Gal., VOC content and chemical constituents will vary with color. Safety and health information may also vary with color. Certain colors may contain Carbon Black and Crystalline Silica, which have been identified as reported or suspected carcinogens. Prolonged inhalation of respirable dusts containing Crystalline Silica may result in the development of a lung disease known as silicosis. For a complete, color-specific MSDS, please contact your local Tnemec representative listed at www.tnemec.com.

For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910. To the best of our knowledge, the information contained herein is accurate. However, neither the Tnemec Company or any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Tnemec Company, Inc.
 123 West 23rd Avenue, Kansas City, MO 64116-3064
 Emergency Telephone: 800-535-5053 (INFOTRAC)
 Telephone: 816-474-3400

Material Safety Data Sheet (MSDS)

For coatings, resins and related materials, approved by the U.S. Department of Labor as essentially similar to form OSHA-20, meets requirements of CFR 29 Part 1910.1200, OSHA'S hazard communication standard. NPCA 1-84

PREPARED DATE: 08/17/2004 Series: F130-6602B Product Class: MINERAL AGGREGATE ENVIROFILL OFF WHITE PART B Page 1 of 2

SECTION 2 - HAZARDOUS INGREDIENTS

INGREDIENTS	CAS#	% By Wt. @ 68 ° F	OCCUPATIONAL EXPOSURE LIMITS			
			TLV - TWA	TLV - STEL	TLV - C	OSHA PEL - STEL PEL - C
CALCIUM SILICATES AND ALUMINATES	65997-15-1	>90	0010.000 MG/M3			0010.000 MG/M3

** SARA Reportable Product

This product contains no reported carcinogens or suspected carcinogens. This product contains pigment dusts which may be released when subjected to abrasive blasting, sanding, or grinding.

SECTION 3 - HEALTH HAZARD INFORMATION

EMERGENCY OVERVIEW: POTENTIAL HEALTH EFFECTS: EYE: When in contact with eyes or mixed with water, portland cement powder can become highly caustic (pH > 12). SKIN: When in contact with skin or mixed with water, portland cement powder can become highly caustic (pH > 12). INHALATION - OVEREXPOSURE TO SOLVENT VAPORS OR SPRAY MIST: INHALATION - OVEREXPOSURE TO FREE PIGMENT DUST: Coughing, wheezing, shortness of breath, restricted nasal passages, lung injury. INGESTION: Gastrointestinal irritation. CHRONIC EFFECTS: TARGET ORGANS: Can cause eye irritation. Can cause skin irritation. Can cause respiratory tract irritation. OTHER: This product when mixed with other components acquires the hazards of all components. PRIMARY ROUTES OF ENTRY: Inhalation. PROPOSITION 65: Pigments and/or other raw materials present in this product contain trace amounts of a chemical or chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush immediately with large amounts of clean water under low pressure for at least 15 minutes. Consult a physician. **SKIN CONTACT:** Wash affected area with soap and water. Remove contaminated clothing. Dispose of or launder accordingly. Consult a physician if skin irritation persists. **INHALATION:** Remove affected individual to fresh air. Treat symptomatically. If breathing is difficult, administer oxygen. If breathing has stopped give artificial respiration. Consult a physician. **INGESTION:** NOTE TO PHYSICIAN:

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION	FLASHPOINT	EXPLOSION LEVEL LOW	EXPLOSION LEVEL HIGH	FLAMMABILITY LIMITS LOWER	FLAMMABILITY LIMITS HIGHER
	-N/A °F	-N/A	-N/A	-N/A	-N/A

EXTINGUISHING MEDIA: FIRE-FIGHTING PROCEDURES AND EQUIPMENTS:

SECTION 6 - SPILL OR LEAK PROCEDURES

CLEAN-UP: Avoid breathing dust. Use a dust mask or respirator. Clean up using vacuum cleaner or floor sweeping compound. Shovel into container for disposal.

SECTION 7 - SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store in dry area. Keep closures tight and upright to prevent leakage. Do not store in high temperature areas or near fire or open flame. Refer to product data sheet for recommended storage temperatures. **SPECIAL COMMENTS:**

SECTION 8 - SAFE HANDLING AND USE INFORMATION

HYGIENIC PRACTICES: Wash hands and other contaminated skin areas with warm soap and water before eating. **EYE PROTECTION:** Usually not necessary. Dust tight goggles in dusty environments. **RESPIRATORY PROTECTION:** A dust mask or a particulate respirator approved by NIOSH/MSHA is recommended. **OTHER PROTECTION:** Use chemical resistant coveralls or apron to protect against skin and clothing contamination. Use protective cream where skin contact is likely. **VENTILATION:**

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE	VAPOR DENSITY	LOWER BOILING RANGE	HIGHER BOILING RANGE	FORMULA WEIGHT BY VOLUME	VOC IN LBS PER GALLON	EVAPORATION RATE	%VOLATILE BY WEIGHT
-N/A	-N/A	-N/A °F	-N/A °F	26.3199 LB/GL	.000	.000 (Ether = 1)	.000

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBILITIES: Acids. DECOMPOSITION: CONDITIONS TO AVOID: POLYMERIZATION; Will not occur. STABILITY: Stable.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of in accordance with Federal, state, and local regulations regarding pollution.

SECTION 16 - HMIS INFORMATION

Health: 1 Flammability: 1 Reactivity: 1

This is a condensed MSDS, providing safety and health information pertinent to the complete product series. Physical constants such as Wt./Gal., VOC content and chemical constituents will vary with color. Safety and health information may also vary with color. Certain colors may contain Carbon Black and Crystalline Silica, which have been identified as reported or suspected carcinogens. Prolonged inhalation of respirable dusts containing Crystalline Silica may result in the development of a lung disease known as silicosis. For a complete, color-specific MSDS, please contact your local Tnemec representative listed at www.tnemec.com.

For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910. To the best of our knowledge, the information contained herein is accurate. However, neither the Tnemec Company or any of its subsidiaries assume any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Wethane

MATERIAL SAFETY DATA SHEET

prepared 02/06/07

HAZARDS IDENTIFICATION (ANSI Section 3)

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.

Effects of overexposure :

Inhalation : Irritation of respiratory tract. Prolonged inhalation may lead to. Inhalation of spray mist may cause irritation of respiratory tract. Mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, blurred vision, coughing, difficulty with speech, central nervous system depression, inoixication, anesthetic effect or narcosis, difficulty of breathing, allergic response, tremors, liver damage, kidney damage, pulmonary edema, pneumoconiosis, loss of consciousness, respiratory failure, asphyxiation, death. Possible sensitization to respiratory tract.

Skin contact : Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, blistering, allergic response, severe skin irritation. Possible sensitization to skin.

Eye contact : Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation, corneal injury.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, drowsiness, dizziness and/or lightheadedness, rash, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, central nervous system depression, intoxication, anesthetic effect or narcosis, liver damage, kidney damage, pulmonary edema, loss of consciousness.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders, asthma-like conditions, kidney disorders, liver disorders, nervous system disorders.

FIRST-AID MEASURES

(ANSI Section 4)

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort. Get medical attention if discomfort or irritation persists.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use. If irritation occurs, consult a physician.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES

(ANSI Section 5)

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Closed containers may explode when exposed to extreme heat or fire. Vapors may ignite explosively at ambient temperatures. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. Closed containers may burst if exposed to extreme heat or fire. Dust explosion hazard. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, oxides of nitrogen, oxides of sulfur, toxic gases, barium compounds.

ACCIDENTAL RELEASE MEASURES

(ANSI Section 6)

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Ventilate area with explosion-proof equipment. Spills may be collected with absorbent materials. Use non-sparking tools. Evacuate all unnecessary personnel. Place collected material in proper container. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE

(ANSI Section 7)

Handling and storage : Store below 80F. Store below 100F (38C). Keep away from heat, sparks and open flame. Keep from freezing. Store in original container. Keep away from direct sunlight, heat and all sources of ignition. Keep container tightly closed in a well-ventilated area.

Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Avoid conditions which result in formation of inhalable particles such as spraying or abrading (sanding) painted surfaces. If such conditions cannot be avoided, use appropriate respiratory protection as directed under exposure controls/personal protection. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION

(ANSI Section 8)

Respiratory protection : Respiratory protection is required for use in isocyanate containing environments. Consider type of application and environmental concentrations when selecting respiratory protection. Observe governmental regulations for respirator use. (29 CFR 1910.134(OSHA)(Canadian 294.4) The use of positive pressure supplied air respirator is mandatory when the airborne isocyanate concentrations are not known. Note: isocyanate based materials have been determined to cause allergic sensitization in humans. Avoid inhalation and dermal (skin) contact with the uncured material.

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors. Use explosion-proof equipment. Use non-sparking equipment.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing, face shield, apron, boots.

STABILITY AND REACTIVITY

(ANSI Section 10)

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, reducing agents, bases, aldehydes, halogens, amines, water, peroxides, nitric acid, alcohols, combustible materials, caustics. Nitrates.

Conditions to avoid : Elevated temperatures, moisture, contact with oxidizing agent, sparks, open flame, ignition sources.

Hazardous polymerization : Will not occur

The information contained herein is based on data available at the time of preparation of this data sheet which ICI Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. ICI Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and the users of this material. Complies with OSHA hazard communication standard 29CFR1910.1200.

TOXICOLOGICAL INFORMATION

(ANSI Section 11)

Supplemental health information : Contains a chemical that may be absorbed through skin. Free disocyanate may cause allergic reaction in susceptible persons. Notice - reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Contains iron oxide, repeated or prolonged exposure to iron oxide dust may cause siderosis, a benign pneumoconiosis. Other effects of overexposure may include toxicity to liver, kidney, lungs, central nervous system, blood.

Carcinogenicity : The international agency for research on cancer (IARC) has classified carbon black as possibly carcinogenic to humans (group 2b) based on sufficient evidence in animals and inadequate evidence in humans. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. In a 2 year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known. In a lifetime inhalation study, exposure to 250 mg/m³ titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Physical Data

(ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMS	DOT, proper shipping name
379C0910	devthane 379 hs converter	9.40	112.85	13.00	135 f	293-293	*321	UN1866, resin solution, combustible liquid, PGII
379F1000	devthane 379H hs aliphatic urethane gloss enamel - high hide white	11.40	107.96	36.38	80 f	147-595	330	UN1263, paint, 3, PGII
379F3501	devthane 379H hs aliphatic urethane gloss en amel- white	10.90	288.21	34.65	80 f	237-595	330	UN1263, paint, 3, PGII
379F9000	devthane 379H hs aliphatic urethane gloss en amel- safety red base component	10.37	110.22	35.95	80 f	147-595	330	UN1263, paint, 3, PGII
379F9200	devthane 379H hs aliphatic urethane gloss en amel- safety orange base component	10.56	112.96	36.64	80 f	147-595	330	UN1263, paint, 3, PGII
379F9400	devthane 379H hs aliphatic urethane gloss en amel- safety yellow base component	10.68	114.75	37.07	80 f	147-595	330	UN1263, paint, 3, PGII
379F9500	devthane 379H hs aliphatic urethane gloss en amel- white tint base	10.63	100.30	38.67	80 f	147-595	330	UN1263, paint, 3, PGII
379F9501	devthane 379H hs aliphatic urethane gloss en amel - deep tint base	10.96	99.83	37.83	80 f	147-595	330	UN1263, paint, 3, PGII
379F9502	devthane 379H hs aliphatic urethane gloss en amel - neutral tint base	10.21	102.31	38.06	80 f	147-595	330	UN1263, paint, 3, PGII
379F9903	devthane 379 aliphatic urethane gloss enamel - black base component	10.39	110.08	37.49	70 f	147-595	*340	UN1263, paint, 3, PGII

Ingredients

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	379C0910	379F1000	379F3501	379F9000	379F9200	379F9400	379F9500	379F9501	379F9502	379F9903
benzene, ethyl-	ethylbenzene	100-41-4		.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0
2-pentanone, 4-methyl-	methyl isobutyl ketone	108-10-1			5-10							
4-heptanone, 2,6-dimethyl-	diisobutyl ketone	108-83-8			1-5							
2-heptanone	methyl amyl ketone	110-43-0			1-5							
ethane, 1,1'-methylenebis(oxy)-bis-	ethyl orchoformate	122-51-0		1-5	1-5				1-5	1-5	1-5	
acetic acid, butyl ester	butyl acetalate	123-86-4	5-10	1-5	1-5				1-5	1-5	1-5	
benzene, dimethyl-	xylene	1330-20-7	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	1-5	1-5	1-5	1-1.0
carbon black	carbon black	1333-86-4										1-5
titanium oxide	titanium dioxide	13463-67-7		30-40	30-40		1-5	5-10	20-30	5-10		
2-heptanone, 4,6-dimethyl-	4,6-dimethyl-2-heptanone	19549-80-5		10-20	10-20							
2-propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with ethenylbenzene, 2-ethylhexyl 2-propeno and methyl 2-methyl-2-propenoate	acrylic polymer	26816-05-2				5-10	5-10	5-10	5-10	5-10	5-10	5-10

Reproductive effects : High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding to humans is not known.

Mutagenicity : No mutagenic effects are anticipated

Teratogenicity : No teratogenic effects are anticipated

ECOLOGICAL INFORMATION

(ANSI Section 12)

No ecological testing has been done by ICI paints on this product as a whole.

DISPOSAL CONSIDERATIONS

(ANSI Section 13)

Waste disposal : Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

REGULATORY INFORMATION

(ANSI Section 15)

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

Ingredients (Continued)

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	379C0910	379F1000	379F3501	379F9000	379F9200	379F9400	379F9500	379F9501	379F9602	379F9803
2-naphthalene-carboxamide, 4-((4-aminocarbonyl)phenylazo)-n-(2-ethoxyphenyl)-3-hydroxy-	monazo red pigment	2786-76-7				5-10						
hindered amine	aliphatic polyisocyanate	28182-81-2	90-95	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
c.i. pigment yellow 42	light stabilizer	41556-26-7				1-5						
acetic acid, 1,1-dimethyl-ethyl ester	yellow iron oxide	51274-00-1				1-5						
propanoic acid, pentyl ester	tert-butyl acetate	540-88-5	10-20	10-20	10-20	10-20	10-20	10-20	20-30	10-20	20-30	10-20
butanamide, 2-((2-methoxy-4-nitrophenyl)azo)-n-(2-methoxyphenyl)-3-oxo-	amyl propionate	624-54-4				1-5						
nitrophenyl)azo)-n-(2-methoxyphenyl)-3-oxo-	pigment yellow 74	6358-31-2				1-5	1-5	5-10				
ethanol	ethyl alcohol	64-17-5				1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0
solvent naphtha (petroleum), light aromatic	light aromatic solvent	64742-95-6	1-5									
naphtha	naphtha											
silica	amorphous silica	7631-86-9				1-5	1-5	1-5				
sulfuric acid, barium salt	barium sulfate	7727-43-7				10-20	10-20	10-20	1-5	10-20	10-20	20-30
castor oil	castor oil, raw	8001-79-4				5-10	5-10	5-10	5-10	5-10	5-10	5-10
hexane, 1,5-diisocyanato-	hexamethylene diisocyanate	822-06-0	1-1.0									
acetic acid, c6-8-branched alkyl esters	oxo-heptyl acetate	90438-79-2				1-5						
benzene, 1,2,4-trimethyl-	pseudocumene	95-63-6	1-5	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0
phosphated polyester whmis number 5785	phosphated polyester	Sup. Conf.				1-5	1-5	1-5	1-5	1-5	1-5	1-5
styrene acrylic copolymer	styrene acrylic copolymer	Sup. Conf.				10-20						
orange pigment	orange pigment	Sup. Conf.										
modified acrylic copolymer	modified acrylic copolymer	Sup. Conf.				20-30	20-30	20-30	30-40	30-40	30-40	20-30
substituted pyrrol	substituted pyrrol	Sup. Conf.					1-5					

Chemical Hazard Data

(ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV		OSHA-PEL			S	S.R. Std.	S2	S3	CC	H	M	N	I	O
		8-Hour TWA	STEL	8-Hour TWA	STEL	C										
ethylbenzene	100-41-4	100 ppm	125 ppm	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
methyl isobutyl ketone	108-10-1	50 ppm	75 ppm	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
diisobutyl ketone	108-83-8	25 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
methyl amyl ketone	110-43-0	50 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
ethyl orthoformate	122-51-0	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
butyl acetate	123-86-4	150 ppm	200 ppm	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
xylene	1330-20-7	100 ppm	150 ppm	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
carbon black	1333-86-4	3.5 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
titanium dioxide	13463-67-7	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
4,6-dimethyl-2-heptanone	19549-80-5	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
acrylic polymer	28916-05-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
monazo red pigment	2786-76-7	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
aliphatic polyisocyanate	28182-81-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
light stabilizer	41556-26-7	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
yellow iron oxide	51274-00-1	5 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
tert-butyl acetate	540-88-5	200 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
amyl propionate	624-54-4	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
pigment yellow 74	6358-31-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
light aromatic solvent naphtha	64742-95-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
amorphous silica	7631-86-9	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
barium sulfate	7727-43-7	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
castor oil, raw	8001-79-4	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
hexamethylene diisocyanate	822-06-0	0.005 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n
oxo-heptyl acetate	90438-79-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	n

Footnotes:
 C=Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.
 n/a=not applicable
 not est.=not established
 CC=CERCLA Chemical
 ppm=parts per million
 mg/m3=milligrams per cubic meter
 Sup. Conf.=Supplier Confidential
 S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std.=Supplier Recommended Standard
 H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, y=yes, n=no

Chemical Hazard Data (Continued) (ANSI Sections 2, 8, 11, and 15)

Common Name	CAS, No.	ACGIH-TLV			OSHA-PEL			S.R. Std.	S2	S3	CC	H	M	N	I	O
		8-Hour TWA	STEL	C	8-Hour TWA	STEL	C									
pseudocumene	95-63-6	25 ppm	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n	n	n	n	n
phosphated polyester	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	n
orange pigment	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	n
modified acrylic copolymer	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	n
substituted pyrrol	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	n

Footnotes:

C=Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.

n/a=not applicable
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ppm=parts per million
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H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, Y=yes, n=no

S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std.=Supplier Recommended Standard

MATERIAL SAFETY DATA SHEET

prepared 08/08/06



HAZARDS IDENTIFICATION (ANSI Section 3)

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.

Effects of overexposure :

Inhalation : Irritation of respiratory tract. Prolonged inhalation may lead to mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, chest pain, blurred vision, coughing, choking, difficulty with speech, apathy, central nervous system depression, intoxication, tightness of chest, metallic taste, anesthetic effect or narcosis, difficulty of breathing, allergic response, fever and chills, dehydration, tremors, abnormal blood pressure, liver damage, kidney damage, pulmonary edema, convulsions, pneumoconiosis, loss of consciousness, cyanosis, respiratory failure, asphyxiation, death. Possible sensitization to respiratory tract.

Skin contact : Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, blistering, allergic response, severe skin irritation, severe skin irritation or burns. Possible sensitization to skin. Skin contact may result in dermal absorption of component(s) of this product which may cause dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, central nervous system depression, convulsions, loss of consciousness.

Eye contact : Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation, severe eye irritation or burns, corneal injury.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, mucous membrane irritation, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, visual disturbances, apathy, central nervous system depression, intoxication, anesthetic effect or narcosis, difficulty of breathing, burns of the mouth, throat, stomach, liver damage, kidney damage, pulmonary edema, convulsions, loss of consciousness, respiratory failure, death.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders, lung disorders, asthma-like conditions, nervous system disorders, respiratory disorders, allergies.

FIRST-AID MEASURES

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Move to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use. Dispose of contaminated leather items, such as shoes and belts. If irritation occurs, consult a physician.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Closed containers may explode when exposed to extreme heat or fire. Vapors may ignite explosively at ambient temperatures. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. Closed containers may burst if exposed to extreme heat or fire. Dust explosion hazard. Solvent must not be allowed to

evaporate because contact of water with aluminum dust generates hydrogen, which is a flammable gas. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus. Self-contained breathing apparatus recommended.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, oxides of nitrogen, acrid fumes, oxides of sulfur, aldehydes, aluminum oxide, toxic gases, barium compounds, smoke and soot. Phenolics cyanides, smoke.

ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Spills may be collected with absorbent materials. Use non-sparking tools. Evacuate all unnecessary personnel. Place collected material in proper container. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE

Handling and storage : Store below 100F (38c). Store in original containers. Isolated storage is desirable. Keep away from heat, sparks and open flame.

Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Avoid conditions which result in formation of inhalable particles such as spraying or abrading (sanding) painted surfaces. If such conditions cannot be avoided, use appropriate respiratory protection as directed under exposure controls/personal protection. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection : Control environmental concentrations below applicable exposure standards when using this material. When respiratory protection is determined to be necessary, use a NIOSH/MSHA (Canadian z94.4) Approved elastomeric sealing- surface facepiece respirator outfitted with organic vapor cartridges and paint spray (dust/mist) prefilters. Determine the proper level of protection by conducting appropriate air monitoring. Consult 29CFR1910.134 For selection of respirators (Canadian z94.4).

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors. Use explosion-proof equipment.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing, face shield, apron.

STABILITY AND REACTIVITY

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, reducing agents, bases, aldehydes, isocyanates, amines, aluminum, nitric acid, halogenated compounds, combustible materials, lewis acids, mineral acids. Nitrates.

Conditions to avoid : Elevated temperatures, contact with oxidizing agent, storage near acids, sparks, open flame, ignition sources.

Hazardous polymerization : Will not occur may polymerize in presence of aliphatic amines.

The information contained herein is based on data available at the time of preparation of this data sheet which ICI Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. ICI Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and the users of this material.

Complies with OSHA hazard communication standard 29CFR1910.1200.

TOXICOLOGICAL INFORMATION

(ANSI Section 11)

Supplemental health information : Contains a chemical that is moderately toxic by ingestion. Contains a chemical that may be absorbed through skin. Notice - reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Other effects of overexposure may include toxicity to liver, kidney, lungs, central nervous system, blood.

Carcinogenicity : Inhalation of non-asbestiform cosmetic grade talc for 2 years at 6 and 18 mg/m³ produced clear evidence of carcinogenicity in female rats (lung and adrenal tumors) and some evidence of carcinogenicity in male rats (adrenal tumors). No evidence of carcinogenicity was demonstrated in male and female mice exposed under the same conditions. Microscopic examination of the lungs of rats and mice exposed to talc revealed additional exposure related effects primarily associated with the inflammatory response. Contains crystalline silica which is considered a hazard by inhalation. IARC has classified crystalline silica as carcinogenic to humans (group 1). Crystalline silica is also a known cause of silicosis, a noncancerous lung disease. The national toxicology program (NTP) has classified crystalline silica as a known human carcinogen. The international agency for research on cancer (IARC) has classified carbon black as possibly carcinogenic to humans (group 2b) based on sufficient evidence in animals and inadequate evidence in humans. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. In a 2 year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known. In a lifetime inhalation study, exposure to 250 mg/m³ titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Physical Data

(ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMSIS	DOT, proper shipping name
224F2531N	devran 224hs high build epoxy coating, i.m. gray b	12.74	244.11	29.26	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224F2534N	devran 224hs high build epoxy coating med gray bas	12.76	243.51	29.20	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224F2904N	devran 224hs high build epoxy haze gray base pori	12.75	244.59	29.32	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224F2950N	devran 224hs high build gray	13.05	249.62	29.92	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224F3501N	devran 224hs high build epoxy coating white base p	13.01	91.43	31.21	100 f	208-208	*320	paint, combustible liquid, UN 1263, PGII
224F3520N	devran 224hs high build epoxy coating pt-1 white b	13.05	249.74	29.91	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224F9100N	devran 224hs high build epoxy coating, aluminum ba	13.20	236.44	27.46	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224F9400N	devran 224hs epoxy high build safety yellow base	12.18	275.75	32.12	100 f	237-355	*320	paint, combustible liquid, UN 1263, PGII
224F9501N	devran 224hs high build epoxy coating deep tint ba	11.82	264.96	31.80	100 f	237-415	*320	paint, combustible liquid, UN 1263, PGII
224F9502N	devran 224hs high build epoxy coating neutral base	10.65	272.39	32.69	100 f	237-415	*320	paint, combustible liquid, UN 1263, PGII
224F9903N	devran 224hs high build epoxy black base portion	12.82	243.15	29.17	100 f	237-355	*220	paint, combustible liquid, UN 1263, PGII
224G0908	devran 224hs high build epoxy coating, neutral con	11.74	125.83	27.62	100 f	208-415	*320	flammable liquid, corrosive, n.o.s., (resin solution, alkyphenols), 3(8), UN2924,PGIII

Ingredients

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	224F2531N	224F2534N	224F2904N	224F2950N	224F3501N	224F3520N	224F9100N	224F9400N	224F9501N	224F9502N	224F9903N	224G0908
benzene, ethyl-	ethylbenzene	100-41-4	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0
benzenemethanol	benzyl alcohol	100-51-6												
2-pentanone, 4-methyl-	methyl isobutyl ketone	108-10-1	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
1,3,5-trimethylbenzene	1,3,5-trimethylbenzene	108-67-8	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0
1,2-ethanediamine, n,n-bis(2-aminoethyl)-	triethylenetetramine	112-24-3												1-5
antigorite	antigorite	12135-86-3	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10
iron oxide magnetite	iron oxide magnetite	12227-89-3												

Reproductive effects : High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding to humans is not known.

Mutagenicity : No mutagenic effects are anticipated
Teratogenicity : No teratogenic effects are anticipated

ECOLOGICAL INFORMATION

(ANSI Section 12)

No ecological testing has been done by ICI paints on this product as a whole.

DISPOSAL CONSIDERATIONS

(ANSI Section 13)

Waste disposal : Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

REGULATORY INFORMATION

(ANSI Section 15)

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product contains 10% or greater of a chemical classified by DOT as a marine pollutant (see Chemical Hazard Data table). This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

Ingredients (Continued)

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	224F2531N	224F29504N	224F29505N	224F3501N	224F3520N	224F9100N	224F9400N	224F9501N	224F9502N	224F9903N	224G0908
benzene, dimethyl-	xylene	1330-20-7	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	1-5
carbon black	carbon black	1333-86-4	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	1-5
titanium oxide	titanium dioxide	13463-67-7	5-10	5-10	20-30	20-30	20-30	5-10	5-10	10-20			1-5
tremolite, nonasbestiform	tremolite	14567-73-8	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	1-5
talc	talc	14807-96-6	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	1-5
quartz	quartz	14808-60-7	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10-20	5-10
oxirane, 2,2'-((1-methylethylidene) bis(4,1-phenyleneoxy)methylene)) bis-	diglycidyl ether of bisphenol a	1675-54-3											
anthophyllite, nonasbestiform	anthophyllite	17068-78-9	1-5	1-5	1-1.0	1-1.0	1-1.0	1-5	1-1.0	1-1.0	1-1.0	1-5	1-1.0
aluminum hydroxide	aluminum hydroxide	21645-51-2	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-1.0
epoxy resin	epoxy resin	25036-25-3											
phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2,2'-((1-methylethylidene)bis(4,1-phenyleneoxy)methylene)) bis-	epoxy resin	25085-99-8	30-40	30-40	30-40	30-40	30-40	30-40	30-40	30-40	40-50	30-40	1-5
phenyleneoxy)methylene)) bis(oxirane)													
oxirane, 2,2'-((1-methylethylidene)bis(4,1-phenyleneoxy)methylene)) bis-	epoxy resin	25085-99-8	30-40	30-40	30-40	30-40	30-40	30-40	30-40	30-40	40-50	30-40	1-5
phenyleneoxy)methylene)) bis(oxirane)													
butanamide, 1,1-dimethylethyl ester	tert-butyl acetate	540-88-5											
nitrophenylazo)-n-(2-methoxyphenyl)-3-oxo-	pigment yellow 74	6358-31-2				10-20				5-10			5-10
solvent naphtha (petroleum), light aromatic	light aromatic solvent naphtha	64742-95-6	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	polyamide resin	68410-23-1											20-30
1-butanol	n-butanol	71-36-3	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
aluminum	aluminum	7429-90-5											20-30
sulfuric acid, barium salt	barium sulfate	7727-43-7											20-30
stoddard solvent	mineral spirits	8052-41-3											20-30
phenol, 4-nonyl-, branched	4-nonylphenol, branched	84852-15-3											20-30
benzene, 1,2,4-trimethyl-	pseudocumene	95-69-6	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	10-20
castor oil derivative	rheological additive	Sup. Conf.											1-5
trade secret	trade secret	Sup. Conf.											1-5

Chemical Hazard Data

(ANSI Sections 2, 8, II, and 15)

Common Name	CAS. No.	ACGIH-TLV			OSHA-PEL			S	S, R, Std.										
		8-Hour TWA	STEL	C	8-Hour TWA	STEL	C												
ethylbenzene	100-41-4	100 ppm	125 ppm	not est.	100 ppm	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
benzyl alcohol	100-51-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
methyl isobutyl ketone	108-10-1	50 ppm	75 ppm	not est.	100 ppm	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
1,3,5-trimethylbenzene	108-67-8	25 ppm	35 ppm	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
trifluoroethylamine	112-24-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
antigorite	12135-86-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
iron oxide magnetite	12227-89-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
xylene	1330-20-7	100 ppm	150 ppm	not est.	100 ppm	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
carbon black	1333-86-4	3.5 mg/m3	not est.	not est.	3.5 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
titanium dioxide	13463-67-7	10 mg/m3	not est.	not est.	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
tremolite	14567-73-8	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
talc	14807-96-6	2 mg/m3	not est.	not est.	2 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
quartz	14808-60-7	.025 mg/m3	not est.	not est.	.025 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
diglycidyl ether of bisphenol a	1675-54-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
anthophyllite	17068-78-9	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.
aluminum hydroxide	21645-51-2	10 mg/m3	not est.	not est.	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.

Footnotes:

C=Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.
 n/a=not applicable
 not est=not established
 CC=CERCLA Chemical

ppm=parts per million
 mg/m3=milligrams per cubic meter
 Sup Conf=Supplier Confidential

S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std.=Supplier Recommended Standard

H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, Y=yes, n=no

Chemical Hazard Data (Continued) (ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV			OSHA-PEL			S.R. Std.	S2	S3	CC	H	M	N	I	O
		8-Hour TWA	STEL	C	S	8-Hour TWA	STEL									
epoxy resin	25036-25-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
epoxy resin	25085-99-8	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
tert-butyl acetate	540-88-5	200 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	n	y	n	n	n	n	
pigment yellow 74	6358-31-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
light aromatic solvent naphtha	64742-95-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
polyamide resin	68410-23-1	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
n-butanol	71-36-3	20 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	n	y	n	n	n	n	
aluminum	7429-90-5	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n	n	n	
barium sulfate	7727-43-7	10 mg/m3	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
mineral spirits	8052-41-3	100 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
4-nonyphenol, branched	84852-15-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
pseudocumene	95-63-6	25 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n	n	n	
rheological additive	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
trade secret	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	

Footnotes:
 C=Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.
 n/a=not applicable
 not est=not established
 CC=CERCLA Chemical
 ppm=parts per million
 mg/m3=milligrams per cubic meter
 Sup Conf=Supplier Confidential

S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std.=Supplier Recommended Standard
 H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, y=yes, n=no

MATERIAL SAFETY DATA SHEET

Ashland

Page 001
Date Prepared: 05/15/02
Date Printed: 06/26/02
MSDS No: 304.0027090-011.001

HETRON 922 ASCC VE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: HETRON 922 ASCC VE

General or Generic ID: EPOXY VINYL ESTER RESIN

Company

Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:

1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
POLYMER (S)	Trade Secret	54.0- 58.0
STYRENE	100-42-5	43.4

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Continued on next page

MATERIAL SAFETY DATA SHEET

shland

Page 002

Date Prepared: 05/15/02

Date Printed: 06/26/02

MSDS No: 304.0027090-011.001

BEETRON 922 ASCC VE

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: metallic taste, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, loss of coordination, confusion, liver damage.

Target Organ Effects

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible kidney effects, effects on hearing, respiratory tract damage (nose, throat, and airways), testis damage, liver damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: mild effects on color vision, effects on hearing, respiratory tract damage (nose, throat, and airways), central nervous system effects.

Developmental Information

This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

Continued on next page

MATERIAL SAFETY DATA SHEET

shland

Page 003

Date Prepared: 05/15/02

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MSDS No: 304.0027090-011.001

HETRON 922 ASCC VE

Cancer Information

In 1993, the International Agency for Research on Cancer (IARC) classified styrene in group 2B (possibly carcinogenic to humans). IARC concluded that there was no convincing evidence for carcinogenic action of styrene in animals based on the animal studies which existed at that time. Rather, the IARC 2B listing was based on data for styrene oxide, a metabolite of styrene. Two recent lifetime studies with styrene, one in rats and one in mice, have been completed since the 1993 review. There was no increase in cancer in styrene-exposed rats. However, there was an increase in lung cancer in styrene-exposed mice. The relevance of the mouse lung cancer to humans is uncertain. Styrene exposure has not been associated with an increased incidence of cancer in workers including those in the reinforced plastics and composites plastics industries.

Other Health Effects

Styrene readily reacts with low concentrations of halogens (for example, fluorine, chlorine, bromine, or iodine) to form a tear-producing substance.

Primary Route(s) of Entry

Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion.

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Continued on next page

MATERIAL SAFETY DATA SHEET

Shland

Page 004

Date Prepared: 05/15/02

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MSDS No: 304.0027090-011.001

HETRON 922 ASCC VE

Swallowing

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Note to Physicians

This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 3 - Swallowing) when deciding whether to induce vomiting. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract skin, lung (for example, asthma-like conditions), liver, male reproductive system, auditory system.

5. FIRE FIGHTING MEASURES

Flash Point

80.0 - 90.0 F (26.6 - 32.2 C) SETA

Explosive Limit

(for component) Lower 1.1 Upper 6.1 %

Autoignition Temperature

No data

Hazardous Products of Combustion

May form: carbon dioxide and carbon monoxide, toxic fumes, various hydrocarbons.

Continued on next page

MATERIAL SAFETY DATA SHEET

shland

Page 005

Date Prepared: 05/15/02

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MSDS No: 304.0027090-011.001

HETRON 922 ASCC VE

Fire and Explosion Hazards

Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. During a fire, irritating or toxic decomposition products may be generated.

Extinguishing Media

regular foam, water fog, carbon dioxide, dry chemical.

Fire Fighting Instructions

Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS. Polymerization will take place under fire conditions. If polymerization occurs in a closed container, there is a possibility it will rupture violently. Cool storage container with water, if exposed to fire.

NFPA Rating

Health - 2, Flammability - 3, Reactivity - 2

6. ACCIDENTAL RELEASE MEASURES

Small Spill

Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks. Absorb liquid on vermiculite, floor absorbent or other absorbent material. Persons not wearing proper personal protective equipment should be excluded from area of spill.

Large Spill

Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks).

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7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. All five-gallon pails and larger metal containers, including tank cars and tank trucks, should be grounded and/or bonded when material is transferred. Precautions during use: avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Storage

Store in closed containers in a dry, well-ventilated area. Do not store near extreme heat, open flame, or sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

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Skin Protection

Wear resistant gloves (consult your safety equipment supplier).
To prevent repeated or prolonged skin contact, wear impervious
clothing and boots.

Respiratory Protections

If workplace exposure limit(s) of product or any component is
exceeded (see exposure guidelines), a NIOSH/MSHA approved air
supplied respirator is advised in absence of proper environmental
control. OSHA regulations also permit other NIOSH/MSHA
respirators (negative pressure type) under specified conditions
(see your industrial hygienist). Engineering or administrative
controls should be implemented to reduce exposure.

Engineering Controls

Provide sufficient mechanical (general and/or local exhaust)
ventilation to maintain exposure below TLV(s).

Exposure Guidelines

Component

POLYMER (S)

No exposure limits established

STYRENE (100-42-5)

OSHA PEL 100.000 ppm - TWA

OSHA PEL 200.000 ppm - Ceiling

OSHA VPEL 50.000 ppm - TWA

OSHA VPEL 100.000 ppm - STEL

ACGIH TLV 20.000 ppm - TWA (Skin)

ACGIH TLV 40.000 ppm - STEL (Skin)

OSHA has formally endorsed a styrene industry proposal for a
voluntary 50 ppm workplace limit on styrene. Members of the
Styrene Information and Research Council (SIRC), Composites
Institute (CI), Composite Fabricators Association (CFA),
International Cast Polymers Association (ICPA) and National Marine
Manufacturers Association (NMMA) have agreed to use either
engineering controls, work practices or respiratory protection to
achieve this voluntary limit for styrene.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point

(for component) 293.4 F (145.2 C)

Vapor Pressure

(for component) 4.500 mmHg

Specific Vapor Density

3.600 @ AIR=1

Specific Gravity

1.034 - 1.058 @ 77.00 F

Liquid Density

8.600 - 8.800 lbs/gal @ 77.00 F

1.034 - 1.058 kg/l @ 25.00 C

Percent Volatiles

No data

Evaporation Rate

SLOWER THAN ETHYL ETHER

Appearance

CLEAR

State

LIQUID

Physical Form

HOMOGENEOUS SOLUTION

Color

COLORLESS

Odor

PUNGENT

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EETRON 922 ASCC VE

pH

Not applicable

Viscosity

400.0 - 500.0 cps @ spdl #2 @ 30 rpm

Solubility in Water

NEGLIGIBLE

10. STABILITY AND REACTIVITY

Hazardous Polymerization

Product can undergo hazardous polymerization. Avoid exposure to excessive heat, peroxides and polymerization catalysts.

Hazardous Decomposition

May form: carbon dioxide and carbon monoxide, toxic fumes, various hydrocarbons.

Chemical Stability

Stable. Avoid heat, open flame, and prolonged storage at elevated temperatures. This material is unstable at elevated temperatures and pressures.

Incompatibility

Avoid contact with: acids, aluminum chloride, excessive heat, halogens, iron chloride, metal salts, peroxides, strong alkalies, strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

No data

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12. ECOLOGICAL INFORMATION

No data

13. DISPOSAL CONSIDERATION

Waste Management Information

Dispose of in accordance with all applicable local, state and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution Company, IC&S Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101

DOT Description:

RESIN SOLUTION, 3, UN1866, III

Container/Mode:

55 GAL DRUM/TRUCK PACKAGE

NOS Component:

None

RQ (Reportable Quantity) - 49 CFR 172.101

Product Quantity (lbs) Component

2302

STYRENE MONOMER

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Other Transportation Information

The DOT Transport Information may vary with the container and mode of shipment.

15. REGULATORY INFORMATION

US Federal Regulations

TSCA (Toxic Substances Control Act) Status
 TSCA (UNITED STATES) The intentional ingredients of this product are listed.

CERCLA RQ - 40 CFR 302.4(a)

Component	RQ (lbs)
STYRENE	1000

SARA 302 Components - 40 CFR 355 Appendix A
 None

Section 311/312 Hazard Class - 40 CFR 370.2
 Immediate(X) Delayed(X) Fire(X) Reactive(X) Sudden
 Release of Pressure()

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number	%
STYRENE	100-42-5	43.44

OSHA Process Safety Management 29 CFR 1910
 None listed

EPA Accidental Release Prevention 40 CFR 68
 None listed

EPA Hazardous Air Pollutants (HAPS) 40 CFR 63

HAP Component(s)	CAS Number	% (by weight)
STYRENE, MONOMER	100-42-5	43.44
Total		43.44

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EPA VOC (Volatile Organic Compounds)
45.6 %

International Regulations

Inventory Status

AICS (AUSTRALIA) The intentional ingredients of this product are listed.

DSL (CANADA) The intentional ingredients of this product are listed.

ECL (SOUTH KOREA) The intentional ingredients of this product are listed.

EINECS (EUROPE) The intentional ingredients of this product are listed.

ENCS (JAPAN) The intentional ingredients of this product are NOT listed.

State and Local Regulations

California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer.

BENZENE

1,4-DIOXANE

ETHYLENE OXIDE

ACETALDEHYDE

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause reproductive harm.

BENZENE

ETHYLENE OXIDE

Styrene, in the presence of air and high temperature or prolonged exposure to styrene/air mixture to sunlight, can react to form styrene oxide. Styrene oxide is a chemical known to the state of California to cause cancer.

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BETRON 922 ASCC VE

New Jersey RTK Label Information
STYRENE MONOMER

100-42-5

Pennsylvania RTK Label Information
BENZENE, ETHENYL-

100-42-5

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Last page



Paints

MATERIAL SAFETY DATA SHEET

prepared 07/19/06

HAZARDS IDENTIFICATION

(ANSI Section 3)

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.
Effects of overexposure :

Inhalation : Irritation of respiratory tract. Prolonged inhalation may lead to mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, blurred vision, coughing, difficulty with speech, central nervous system depression, intoxication, metallic taste, anesthetic effect or narcosis, difficulty of breathing, fever and chills, dehydration, tremors, liver damage, kidney damage, pulmonary edema, loss of consciousness, respiratory failure, asphyxiation, death.

Skin contact : Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, blistering.

Eye contact : Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, mucous membrane irritation, fatigue, dizziness and/or lightheadedness, headache, nausea, vomiting, diarrhea, gastro-intestinal disturbances, central nervous system depression, anesthetic effect or narcosis, difficulty of breathing, liver damage, kidney damage, pulmonary edema, convulsions, loss of consciousness.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders.

FIRST-AID MEASURES

(ANSI Section 4)

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES

(ANSI Section 5)

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Closed containers may explode when exposed to extreme heat or fire. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. Closed containers may burst if exposed to extreme heat or fire. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus. Self-contained breathing apparatus recommended.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, acrid fumes, oxides of phosphorus, toxic gases, smoke and soot.

ACCIDENTAL RELEASE MEASURES

(ANSI Section 6)

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Spills may be collected with absorbent materials. Evacuate all unnecessary personnel. Place collected material in proper container. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE

(ANSI Section 7)

Handling and storage : Store below 100F (38C). Keep away from heat, sparks and open flame. Keep away from direct sunlight, heat and all sources of ignition.

Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION

(ANSI Section 8)

Respiratory protection : Control environmental concentrations below applicable exposure standards when using this material. When respiratory protection is determined to be necessary, use a NIOSH/MSHA (Canadian 294.4) Approved elastomeric sealing- surface facemask respirator outfitted with organic vapor cartridges and paint spray (dust/mist) prefilters. Determine the proper level of protection by conducting appropriate air monitoring. Consult 29CFR1910.134 For selection of respirators (Canadian 294.4).

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors. Use explosion-proof equipment.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing, face shield.

STABILITY AND REACTIVITY

(ANSI Section 10)

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, reducing agents, bases, amines, nitric acid, mineral acids.

Conditions to avoid : Elevated temperatures, contact with oxidizing agent, sparks, open flame, ignition sources.

Hazardous polymerization : Will not occur

TOXICOLOGICAL INFORMATION

(ANSI Section 11)

Supplemental health information : Contains a chemical that may be absorbed through skin.

Excessive inhalation of fumes may lead to metal fume fever characterized by a metallic taste in mouth, excessive thirst, coughing, weakness, fatigue, muscular pain, nausea, chills and fever.

Notice - reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Contains iron oxide, repeated or prolonged exposure to iron oxide dust may cause siderosis, a benign pneumoconiosis. Other effects of overexposure may include toxicity to liver, kidney, central nervous system.

The information contained herein is based on data available at the time of preparation of this data sheet which ICI Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. ICI Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and the users of this material. Complies with OSHA hazard communication standard 29CFR1910.1200.

Carcinogenicity : Inhalation of non-asbestiform cosmetic grade talc for 2 years at 6 and 18 mg/m³ produced clear evidence of carcinogenicity in female rats (lung and adrenal tumors) and some evidence of carcinogenicity in male rats (adrenal tumors). No evidence of carcinogenicity was demonstrated in male and female mice exposed under the same conditions. Microscopic examination of the lungs of rats and mice exposed to talc revealed additional exposure related effects primarily associated with the inflammatory response. Contains crystalline silica which is considered a hazard by inhalation. IARC has classified crystalline silica as carcinogenic to humans (group 1). Crystalline silica is also a known cause of silicosis, a noncancerous lung disease. The national toxicology program (NTP) has classified crystalline silica as a known human carcinogen. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. In a 2 year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known. In a lifetime inhalation study, exposure to 250 mg/m³ titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Physical Data

(ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMIS	DOT, proper shipping name
4160-1000	devguard 4160 multi purpose tank & structura l primer - white	11.99	404.45	47.94	108 f	277-415	*320	paint, combustible liquid, UN1263, PGIII ***** protect from freezing *****
4160-6120	devguard 4160 multi-purpose tank & structura l primer - gray	11.77	407.81	48.33	108 f	277-415	*320	paint, combustible liquid, UN1263, PGIII ***** protect from freezing *****
4160-7100	devguard 4160 multi-purpose tank & structural primer - red	11.99	405.29	48.04	108 f	277-415	*320	paint, combustible liquid, UN 1263, PGIII

Ingredients

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	4160-1000	4160-6120	4160-7100
benzene, ethyl-	ethylbenzene	100-41-4	1-1.0	1-1.0	1-1.0
1,3,5-trimethylbenzene	1,3,5-trimethylbenzene	108-67-8	1-5	1-5	1-5
2-heptanone	methyl amyl ketone	110-43-0	5-10	5-10	5-10
antigorite	antigorite	12135-86-3	5-10	10-20	5-10
zinc oxide	zinc oxide	1314-13-2	1-5	1-5	1-5
benzene, dimethyl-	xylene	1330-20-7	1-5	1-5	1-5
iron oxide	iron oxide	1332-37-2			5-10
titanium oxide	titanium dioxide	13463-67-7	5-10	1-5	5-10
tremolite, nonasbestiform	tremolite	14567-73-8	10-20	10-20	10-20
talc	talc	14807-96-6	10-20	10-20	10-20
quartz	quartz	14808-60-7	1-1.0	1-1.0	1-1.0
anthophyllite, nonasbestiform	anthophyllite	17068-78-9	1-5	1-5	1-5
ethanol	ethyl alcohol	64-17-5	1-1.0	1-1.0	1-1.0
naphtha (petroleum), heavy alkylate	heavy solvent naphtha	64741-65-7	1-5	1-5	1-5
solvent naphtha (petroleum), light aromatic	light aromatic solvent naphtha	64742-95-6	5-10	5-10	5-10
phosphoric acid, zinc salt	zinc phosphate	7779-90-0	1-5	1-5	1-5
benzene, 1,2,4-trimethyl-	pseudocumene	95-63-6	5-10	5-10	5-10
alkyd resin	alkyd resin	Sup. Conf.	10-20	10-20	10-20
long oil alkyd resin	long oil alkyd resin	Sup. Conf.	5-10	5-10	5-10

Reproductive effects : High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding to humans is not known.

Mutagenicity : No mutagenic effects are anticipated
Teratogenicity : No teratogenic effects are anticipated

ECOLOGICAL INFORMATION

No ecological testing has been done by ICI paints on this product as a whole.

DISPOSAL CONSIDERATIONS

Waste disposal : Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

REGULATORY INFORMATION

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

(ANSI Section 12)

(ANSI Section 13)

(ANSI Section 15)

Chemical Hazard Data

(ANSI Sections 2, 8, 11, and 15)

Common Name	CAS No.	ACGIH-TLV			OSHA-PEL			S.R. Std.	S2	S3	CC	H	M	N	I	O
		8-Hour TWA	STEL	C	8-Hour TWA	STEL	C									
ethylbenzene	100-41-4	100 ppm	125 ppm	not est.	100 ppm	not est.	not est.	not est.	n	y	y	n	n	n	y	n
1,3-dimethylbenzene	108-67-8	25 ppm	35 ppm	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
methyl amyl ketone	110-43-0	50 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
antigorite	12135-86-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
zinc oxide	1314-13-2	2 mg/m ³	10 mg/m ³	not est.	not est.	not est.	5 mg/m ³	not est.	n	n	n	n	n	n	n	n
xylene	1330-20-7	100 ppm	150 ppm	not est.	not est.	not est.	100 ppm	not est.	n	y	y	n	n	n	n	n
iron oxide	1332-37-2	5 mg/m ³	not est.	not est.	not est.	not est.	10 mg/m ³	not est.	n	n	n	n	n	n	n	n
titanium dioxide	13463-67-7	10 mg/m ³	not est.	not est.	not est.	not est.	10 mg/m ³	not est.	n	n	n	n	n	n	n	n
iremolite	14567-73-8	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
talc	14807-96-6	2 mg/m ³	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
quartz	14808-60-7	.025 mg/m ³	not est.	not est.	not est.	not est.	0.1 mg/m ³	not est.	n	n	n	n	n	n	n	n
anthrophyllite	17068-78-9	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
heavy solvent naphtha	64741-65-7	100 ppm	not est.	not est.	not est.	not est.	500 ppm	not est.	n	n	n	n	n	n	n	n
light aromatic solvent naphtha	64742-95-6	not est.	not est.	not est.	not est.	not est.	500x ppm	not est.	n	n	n	n	n	n	n	n
zinc phosphate	7779-90-0	10 mg/m ³	not est.	not est.	not est.	not est.	15 mg/m ³	not est.	n	y	n	n	n	n	n	n
pseudocumene	95-63-6	25 ppm	not est.	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n	n	n	n

Footnotes:
 C=Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.

ppm=parts per million
 mg/m³=milligrams per cubic meter
 Sup Conf=Supplier Confidential

S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R. Std.=Supplier Recommended Standard

H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, Y=yes, n=no



Paints

MATERIAL SAFETY DATA SHEET

prepared 07/21/06

DEVGUARD 4308 ALKYD INDUSTRIAL GLOSS ENAMEL WHITE AND TINT BASES

ICI Paints North America

15885 Sprague Road Strongsville, Ohio 44136

EMERGENCY TELEPHONE NO. (800) 545-2643

4308

HAZARDS IDENTIFICATION

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.
Effects of overexposure :

Inhalation : Irritation of respiratory tract. Prolonged inhalation may lead to loss of appetite, mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, blurred vision, coughing, difficulty with speech, central nervous system depression, intoxication, anesthetic effect or narcosis, difficulty of breathing, allergic response, tremors, severe lung irritation or damage, liver damage, kidney damage, pulmonary edema, convulsions, loss of consciousness, respiratory failure, asphyxiation, death. Possible sensitization to respiratory tract.

Skin contact : Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, blistering, allergic response. Skin contact may result in dermal absorption of component(s) of this product which may cause blurred vision, central nervous system depression.

Eye contact : Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, mucous membrane irritation, fatigue, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, central nervous system depression, difficulty of breathing, liver damage, kidney damage, pulmonary edema, convulsions, loss of consciousness.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders.

FIRST-AID MEASURES

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Closed containers may explode when exposed to extreme heat or fire. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, oxides of nitrogen, acrid fumes, phosphorous, ammonia, toxic gases. Oxides of calcium.

ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Spills may be collected with absorbent materials. Evacuate all unnecessary personnel. Place collected material in proper container. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE

Handling and storage : Store below 100F (38c). Keep away from heat, sparks and open flame. Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection : Control environmental concentrations below applicable exposure standards when using this material. When respiratory protection is determined to be necessary, use a NIOSH/MSHA (Canadian Z94.4) Approved elastomeric sealing - surface facepiece respirator outfitted with organic vapor cartridges and paint spray (dust/mist) prefilers. Determine the proper level of protection by conducting appropriate air monitoring. Consult 29CFR1910.134 For selection of respirators (Canadian Z94.4).

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors. Use explosion-proof equipment.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing.

STABILITY AND REACTIVITY

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, bases, amines, ammonium salts, nitric acid.
Conditions to avoid : Elevated temperatures, contact with oxidizing agent, sparks, open flame, ignition sources.

Hazardous polymerization : Will not occur

TOXICOLOGICAL INFORMATION

Supplemental health information : Contains a chemical that may be absorbed through skin. Notice - reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Other effects of overexposure may include toxicity to liver, kidney, central nervous system.

The information contained herein is based on data available at the time of preparation of this data sheet which ICI Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. ICI Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use. Complies with OSHA hazard communication standard 29CFR1910.1200.

Carcinogenicity: Inhalation of non-asbestiform cosmetic grade talc for 2 years at 6 and 18 mg/m³ produced clear evidence of carcinogenicity in female rats (lung and adrenal tumors) and some evidence of carcinogenicity in male rats (adrenal tumors). No evidence of carcinogenicity was demonstrated in male and female mice exposed under the same conditions. Microscopic examination of the lungs of rats and mice exposed to talc revealed additional exposure related effects primarily associated with the inflammatory response. Contains crystalline silica which is considered a hazard by inhalation. IARC has classified crystalline silica as carcinogenic to humans (group 1). Crystalline silica is also a known cause of silicosis, a noncancerous lung disease. The national toxicology program (NTP) has classified crystalline silica as a known human carcinogen. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. In a 2 year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known. The international agency for research on cancer (IARC) has classified cobalt and certain cobalt compounds as possibly carcinogenic to humans (group 2b). Injection of metallic cobalt, cobalt alloys, and certain cobalt compounds has resulted in the development of localized tumors in laboratory animals. In a 2-year inhalation bioassay conducted by the national toxicology program (NTP), ethylene glycol butyl ether (egbe) caused an increased incidence of liver tumors in male mice and forestomach tumors in female mice exposed to 250 ppm, the highest concentration tested with mice. In rats, an increased incidence of tumors affecting the adrenal gland was seen in females exposed at 125 ppm only. This finding was not statistically significant. No increased incidence of any tumor type was seen in male rats exposed to the highest test concentration of 125ppm. The relevance of these findings to humans is unclear. In a lifetime inhalation study, exposure to 250 mg/m³ titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Physical Data

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMIS	DOT, proper shipping name
4308-0100	devguard 4308 alkyl industrial gloss enamel - white	9.35	431.06	54.73	105 f	277-415	320	paint, combustible liquid, UN 1263, PGIII
4308-0200	devguard 4308 alkyl industrial gloss enamel - pastel tint base	8.82	435.97	55.34	105 f	277-415	320	paint, combustible liquid, UN 1263, PGIII
4308-0300	devguard 4308 alkyl industrial gloss enamel - intermediate tint base	8.44	392.35	49.94	105 f	276-415	320	paint, combustible liquid, UN 1263, PGIII
4308-0400	devguard 4308 alkyl industrial gloss enamel - deep tint base	8.19	414.76	52.66	105 f	277-415	320	paint, combustible liquid, UN 1263, PGIII
4308-0900	devguard 4308 alkyl industrial gloss enamel - neutral tint base	8.24	441.36	56.00	105 f	277-415	320	paint, combustible liquid, UN 1263, PGIII
4308-1000	devguard 4308 alkyl industrial gloss enamel - white-high hiding	9.96	377.37	47.94	105 f	277-415	320	paint, combustible liquid, UN 1263, PGIII

Ingredients

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	4308-0100	4308-0200	4308-0300	4308-0400	4308-0900	4308-1000
benzene, ethyl-	ethylbenzene	100-41-4	1-1-0	1-1-0	1-1-0	1-1-0	1-1-0	1-1-0
ethanol, 2-butoxy-	2-butoxyethanol	111-76-2					1-1-0	
limestone	limestone	1317-85-3					10-20	
benzene, dimethyl-	xylene	1330-20-7	1-5	1-5	1-5	1-5	1-5	1-5
titanium oxide	titanium dioxide	13463-67-7	20-30	10-20	10-20	1-5	1-5	20-30
talc	talc	14807-96-6				5-10		
quartz	quartz	14808-60-7					1-1-0	
aluminum hydroxide	aluminum hydroxide	21645-51-2						
neodecanoic acid, cobalt salt	cobalt neodecanoate	27253-31-2				1-1-0		1-5
naphtha (petroleum), heavy alkylate	heavy solvent naphtha	64741-65-7	1-5	5-10	10-20	10-20	5-10	10-20
solvent naphtha (petroleum), medium aliphatic	medium aliphatic solvent naphtha	64742-88-7	10-20	10-20	10-20	10-20	10-20	10-20
soybean oil, polymer with pentaerythritol, tri and tung oil	alkyd resin	67989-28-0						
quaternary ammonium compounds, bis(hydrogenated tallow alkyl)di- methyl, salts with bentonite	dispersant, organoalloy	68953-58-2			5-10			1-5

Reproductive effects: High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding to humans is not known.

Mutagenicity: No mutagenic effects are anticipated

Teratogenicity: No teratogenic effects are anticipated

ECOLOGICAL INFORMATION

(ANSI Section 12)

No ecological testing has been done by ICI paints on this product as a whole.

DISPOSAL CONSIDERATIONS

(ANSI Section 13)

Waste disposal: Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

REGULATORY INFORMATION

(ANSI Section 15)

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

Ingredients (Continued)

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	4308-0100	4308-0200	4308-0300	4308-0400	4308-0900	4308-1000
fatty acids, c9-c13-neo-, cobalt salts	fatty acids, c9-c13-neo-, cobalt salts	68955-83-9				1-10		
lecithins	lecithin	8002-43-5		1-5	1-5			
stoddard solvent	mineral spirits	8052-41-3	10-20	20-30	1-5	5-10	20-30	
benzene, 1,2,4-trimethyl-	pseudocumene	95-63-6			1-10	1-10	1-10	1-10
castor oil derivative	rheological additive	Sup. Conf.	1-5	1-5			1-5	
long oil alkylid resin	long oil alkylid resin	Sup. Conf.	10-20	10-20	40-50	30-40	10-20	30-40
alkylid resin	alkylid resin	Sup. Conf.	20-30	20-30		5-10	20-30	

Chemical Hazard Data

(ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV		OSHA-PEL			S.R. Std.	S2	S3	CC	H	M	N	I	O
		8-Hour TWA	STEL	C	STEL	C									
ethylbenzene	100-41-4	100 ppm	125 ppm	not est.	not est.	not est.	not est.	n	y	y	n	n	n	y	n
2-butoxyethanol	111-76-2	20 ppm	not est.	n	y	n	n	n	n	n	n				
limestone	1317-65-3	10 mg/m3	not est.	n	n	n	n	n	n	n	n				
xylene	1330-20-7	100 ppm	150 ppm	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
titanium dioxide	13463-67-7	10 mg/m3	not est.	n	y	y	n	n	n	n	n				
talc	14807-96-6	2 mg/m3	not est.	n	n	n	n	n	n	y	n				
aluminum hydroxide	14808-60-7	.025 mg/m3	not est.	n	n	n	n	n	n	n	n				
cobalt neodecanoate	21645-51-2	10 mg/m3	not est.	n	n	n	n	n	n	n	n				
heavy solvent naphtha	27253-31-2	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
medium aliphatic solvent naphtha	64741-85-7	100 ppm	not est.	n	n	n	n	n	n	n	n				
dispersant, organoclay	64742-88-7	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
fatty acids, c9-c13-neo-, cobalt salts	68953-58-2	10 mg/m3	not est.	n	n	n	n	n	n	n	n				
lecithin	68955-83-9	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
mineral spirits	8002-43-5	not est.	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n	n	n	n
rheological additive	8052-41-3	100 ppm	not est.	n	n	n	n	n	n	n	n				
	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n

Footnotes:

C=Ceiling - Concentration that should not be exceeded, even instantaneously.

S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.

n/a=not applicable
not est.=not established
CC=CERCLA Chemical

ppm=parts per million
mg/m3=milligrams per cubic meter
Sup. Conf.=Supplier Confidential

S2=Sara Section 302 EHS
S3=Sara Section 313 Chemical
S.R.Std.=Supplier Recommended Standard

H=Hazardous Air Pollutant, M=Marine Pollutant
P=Pollutant, S=Severe Pollutant
Carcinogenicity Listed By:
N=NTP, I=ARC, O=OSHA, y=yes, n=no

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MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.
THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)
IMPORTANT: Read this MSDS before handling & disposing of this product.
Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT IDENTITY: M-566
COMPANY IDENTITY: CONE SOLVENTS
COMPANY ADDRESS: P O BOX 13132
COMPANY CITY: MEMPHIS, TN 38113
COMPANY PHONE: 1-901-946-1638
CHEMTREC PHONE: 1-800-424-9300

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CONTAINS: 30-40% METHYL ISOBUTYL KETONE (108-10-1) [203-550-1],
25-35% XYLENES (1330-20-7) [215-535-7],
15-20% N-BUTANOL (71-36-3) [200-751-6],
0-10% ETHYLBENZENE (100-41-4) [202-849-4]

Number in parentheses is CAS #, number in brackets is European EC #.

SECTION 3. HAZARDS IDENTIFICATION

RISK STATEMENTS:

R11 Highly Flammable.
R36/37/38 Irritating to eyes, respiratory system and skin.
R20/65 Harmful by inhalation, may cause lung damage if swallowed.

SAFETY STATEMENTS:

S9 Keep container in a well-ventilated place.
S16 Keep away from sources of ignition. No smoking.
S29 Do not empty into drains.
S24/25 Avoid contact with skin and eyes.

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SECTION 4. FIRST AID MEASURES

EYE CONTACT:

For eyes, flush with plenty of water for 15 minutes & get medical attention.

SKIN CONTACT:

In case of contact with skin immediately remove contaminated clothing.
Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

INHALATION:

After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped give artificial respiration.

SWALLOWING:

If swallowed, get immediate medical advice. Inducing vomiting may cause aspiration into the lungs.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

NFPA Class B extinguishers (Carbon Dioxide or foam) for Class I B liquid fires.

SPECIAL FIRE FIGHTING PROCEDURES

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).
Use NIOSH approved positive-pressure self-contained breathing apparatus.

UNUSUAL EXPLOSION AND FIRE PROCEDURES

HIGHLY FLAMMABLE!! VAPORS CAN CAUSE FLASH FIRE

Keep container tightly closed.
Isolate from oxidizers, heat, sparks, electric equipment & open flame.
Closed containers may explode if exposed to extreme heat.
Applying to hot surfaces requires special precautions.
Empty container very hazardous! Continue all label precautions!

SECTION 6. ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES

Stop spill at source. Dike area & contain.

CLEAN-UP PROCEDURES:

Clean up remainder with absorbent materials. Mop up & dispose of. Persons without proper protection should be kept from area until cleaned up.

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SECTION 7. HANDLING AND STORAGE

HANDLING

Isolate from oxidizers, heat, sparks, electric equipment & open flame.
Use only with adequate ventilation. Avoid breathing of vapor or spray mist.
Avoid contact with skin & eyes.
Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.
Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, saw, drill, braze, or weld. Empty container very hazardous! Continue all label precautions!

STORAGE

Do not store above 49 C/120 F. Store large amounts in structures made for OSHA Class I B liquids. Keep container tightly closed & upright when not in use to prevent leakage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

RESPIRATORY EXPOSURE CONTROLS

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION

LOCAL EXHAUST	: Necessary
MECHANICAL (GENERAL)	: Acceptable
SPECIAL	: None
OTHER	: None

PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers.
Wash at end of each workshift & before eating, smoking or using the toilet.
Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

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SECTION 9. PHYSICAL DATA

APPEARANCE : Liquid, Water-White
ODOR : Ketone
BOILING RANGE : 114 122 141 C / 238 253 287 F
AUTO IGNITION TEMPERATURE : 300 C / 572 F (Lowest Component)
LOWER FLAMMABLE LIMIT IN AIR (% by vol): 1.3
FLASH POINT (TEST METHOD): 15 C / 59 F (TCC)
FLAMMABILITY CLASSIFICATION: Class I B
GRAVITY @ 60 F :
API : 38.4
SPECIFIC GRAVITY (Water=1) : 0.833
POUNDS/GALLON : 6.939
VOC'S (>0.44 Lbs/Sq In) : 80.7 Vol. % / 672.0 g/L / 5.597 Lbs/Gal
TOTAL VOC'S (TVOC) : 100.0 Vol. % / 833.0 g/L / 6.938 Lbs/Gal
NONEXEMPT VOC'S (CVOC) : 100.0 Vol. % / 833.0 g/L / 6.938 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS) : 80.6 Wt. % / 671.2 g/L / 5.591 Lbs/Gal
VAPOR PRESSURE (mm of Hg)@20 C : 9.1
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C) : 9.1
VAPOR DENSITY (air=1) : 3.3
WATER ABSORPTION : Negligible
REFRACTIVE INDEX : 1.436

SECTION 10. STABILITY & REACTIVITY

STABILITY

Stable under normal conditions.

CONDITIONS TO AVOID

Isolate from oxidizers, heat, sparks, electric equipment & open flame.

MATERIALS TO AVOID

Isolate from strong oxidizers such as permanganates, chromates & peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon Monoxide, Carbon Dioxide from burning.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL	CAS #	TWA (OSHA)	TLV (ACGIH)	HAP
Methyl Isobutyl Ketone	108-10-1	100 ppm	50 ppm	Yes
Xylenes	1330-20-7	100 ppm	100 ppm A4	Yes
n-Butanol	71-36-3	100 ppm S	25 ppm S	No
Ethylbenzene	100-41-4	100 ppm	100 ppm A3	Yes

In addition to EPA Hazardous Air Pollutants showing "Yes" under "HAP" above, using manufacturers' data, based on EPA Method 311, the following EPA Hazardous Air Pollutants may be present in trace amounts (less than 0.1%):
Benzene, Toluene, Cumene

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

MATERIAL	CAS #	CEILING	STEL (OSHA/ACGIH)
Methyl Isobutyl Ketone	108-10-1	None Known	75 ppm
Xylenes	1330-20-7	None Known	150 ppm
n-Butanol	71-36-3	50 ppm	25 ppm
Ethylbenzene	100-41-4	None Known	125 ppm

ACUTE HAZARDS

EYE & SKIN CONTACT:

Primary irritation to skin, defatting, dermatitis.
Absorption thru skin increases exposure.
Primary irritation to eyes, redness, tearing, blurred vision.
Liquid can cause eye burns. Wash thoroughly after handling.

INHALATION:

Anesthetic. Irritates respiratory tract. Acute overexposure
can cause serious nervous system depression. Vapor harmful.
Acute overexposure can cause damage to kidneys, blood, nerves, liver & lungs.

SWALLOWING:

Harmful or fatal if swallowed.
Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.

SUBCHRONIC HAZARDS/CONDITIONS AGGREGATED

CONDITIONS AGGREGATED

Chronic overexposure can cause damage to kidneys, blood, nerves, liver & lungs.
Persons with severe skin, liver or kidney problems should avoid use.

CHRONIC HAZARDS

CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

Potential Cancer Hazard based on tests with laboratory animals
using Ethylbenzene. Overexposure may create cancer risk.
Leukemia been reported in humans from Benzene.
This product contains less than 41 ppm of Benzene.
Not considered hazardous in such low concentrations.
Absorption thru skin may be harmful. Studies with laboratory animals
indicate this product can cause damage to fetus.

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SECTION 12. ECOLOGICAL INFORMATION

MAMMALIAN INFORMATION:

MATERIAL	CAS #	LOWEST KNOWN LETHAL DOSE DATA LOWEST KNOWN LD50 (ORAL)
n-Butanol	71-36-3	790.0 mg/kg(Rats)

AQUATIC ANIMAL INFORMATION:

The most sensitive known aquatic group to any component of this product is:
Fish are adversely affected by
components of this product.

MOBILITY

This material is a mobile liquid.

DEGRADABILITY

This product is partially biodegradable.

ACCUMULATION

This product does not accumulate or biomagnify in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Recycle / dispose of observing national, regional, state, provincial and local
health, safety & pollution laws.

If questions exist, contact the appropriate agencies.

SECTION 14. TRANSPORT INFORMATION

DOT SHIPPING NAME: RQ, Paint Related Material
(Contains: Methyl Isobutyl Ketone, Xylene), 3, UN1263, PG-II
DRUM LABEL: (FLAMMABLE LIQUID)
IATA / ICAO: RQ, Paint Related Material
(Contains: Methyl Isobutyl Ketone, Xylene), 3, UN1263, PG-II
IMO / IMDG: RQ, Paint Related Material
(Contains: Methyl Isobutyl Ketone, Xylene), 3, UN1263, PG-II
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 128

SECTION 15. REGULATORY INFORMATION

EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health, Fire

All components of this product are on the TSCA list.

SARA Title III Section 313 Supplier Notification

This product contains the indicated <*> toxic chemicals subject to the
reporting requirements of Section 313 of the Emergency Planning & Community
Right-To-Know Act of 1986 & of 40 CFR 372. This information must be
included in all MSDSs that are copied and distributed for this material.

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SECTION 15. REGULATORY INFORMATION (CONTINUED)

SARA TITLE III INGREDIENTS	CAS#	WT. % (REG. SECTION)	RQ (LBS)
*Methyl Isobutyl Ketone	108-10-1	38 (311,312,313,RCRA)	5000
*Xylenes	1330-20-7	33 (311,312,313,RCRA)	100
*n-Butanol	71-36-3	19 (311,312,313,RCRA)	5000
*Ethylbenzene	100-41-4	8 (311,312,313,RCRA)	1000

> 299 LB / 135 KG OF THIS PRODUCT IN 1 CONTAINER EXCEEDS THE "RQ" OF XYLENES. Any release equal to or exceeding the RQ must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR 302.6 and 40 CFR 355.40 respectively. Failure to report may result in substantial civil and criminal penalties. State & local regulations may be more restrictive than federal regulations.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65: This product contains the following chemical known to the State of California to cause cancer: Ethylbenzene

INTERNATIONAL REGULATIONS

The components of this product are listed on the chemical inventories of the following countries:
Australia, Canada, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:

HEALTH (NFPA): 2, HEALTH (HMIS): 2, FLAMMABILITY: 3, REACTIVITY: 0
This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING

Employees should be made aware of all hazards of this material (as stated in this MSDS) before handling it.

NOTICE

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process. Unless updated, this Material Safety Data Sheet is valid until 09/08/2007.

Zinc



Material Safety Data Sheet

CHEMTREC Transportation
Emergency Phone: 800-424-9300

Pittsburgh Poison Control
Center
Health Emergency No.: 412-681-6669

NOTE: The CHEMTREC Transportation
Emergency Phone is to be used only in the
event of chemical emergencies involving a
spill, leak, fire, exposure or accident involving
chemicals

Section 1 - Chemical Product / Company Information

Product Name: CARBOZINC 11 / CARBOZINC 11
FG BASE **Revision Date:** 06/04/2007

Identification Number: PLMSDS 0250A1NL **Supercedes :** 05/23/2007

Product Use/Class: SOLvent Based Organic Zinc - FOR
INDUSTRIAL USE ONLY **Preparer:** Regulatory, Department

Manufacturer: Carboline Company
350 Hanley Industrial Ct.
St. Louis, MO 63144

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight %	Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA-CEIL
ETHYL ALCOHOL	64-17-5	25.0		1000 PPM	N/E	1900 MGM3	N/E
MICROCRYSTALLINE SILICA	14808-60-7	20.0		0.025 MG/M3 (respirable)	N/E	0.1 MG/M3 (respirable)	N/E
ISOPROPANOL	67-63-0	15.0		200 PPM	400 PPM	400 PPM	N/E
ETHYL POLYSILICATE	11099-06-2	15.0		N/E	N/E	N/E	N/E
2BUTOXY ETHANOL	111-76-2	15.0		25 PPM	N/E	N/E	N/E
METHYL ALCOHOL	67-56-1	10.0		200 PPM	250 PPM	120 MGM3	NE
ALUMINUM SILICATE	1332-58-7	10.0		2 MGM3	N/E	260 MGM3	N/E
MICA	12001-26-2	5.0		N/E	N/E	5 MGM3	NE
CARBON BLACK	1333-86-4	5.0		N/E	N/E	N/E	N/E
ETHYL BENZENE	100-41-4	0.3		100 PPM	125 PPM	N/E	N/E
						435 MGM3	N/E

Section 3 - Hazards Identification

Emergency Overview: FLAMMABLE liquid and vapor. Contains SILICA which can cause cancer. Risk of Cancer depends on duration and level of exposure.

Effects Of Overexposure - Eye Contact: May cause eye irritation.

Effects Of Overexposure - Skin Contact: Direct skin contact may cause irritation. May be harmful if absorbed through the skin.

Effects Of Overexposure - Inhalation: Harmful if inhaled, may affect the brain or nervous system, causing dizziness, headache, or nausea. May cause nose and throat irritation.

Effects Of Overexposure - Ingestion: Harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Crystalline silica is known to cause silicosis, a noncancerous lung disease. Exposure is by route of inhalation. If material is in a liquid matrix it is unlikely to be inhaled.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Medical Conditions Prone to Aggravation by Exposure: If you have a condition that could be aggravated by exposure to dust or organic vapors, see a physician prior to use.

Section 4 - First Aid Measures

First Aid - Eye Contact: If material gets into eyes, flush with water immediately for 15 minutes. Consult a physician.

First Aid - Skin Contact: In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Launder clothing before reuse. If rash or irritation develops, consult a physician.

First Aid - Inhalation: If inhaled, remove to fresh air. Administer oxygen if necessary. Consult a physician if symptoms persist or exposure was severe.

First Aid - Ingestion: If swallowed do not induce vomiting. Seek immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point, F: 56F (13C)
(Setaflash)

Lower Explosive Limit, %: 0.8
Upper Explosive Limit, %: 36.0

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Flammable Liquid. Vapors are heavier than air and will accumulate. Vapors will form explosive concentrations with air. Vapors travel long distances and will flashback. Use mechanical ventilation when necessary to keep percent vapor below the "Lower Explosion Level" (LEL). Eliminate all ignition sources. Keep away from sparks, open flames and heat sources. All electric equipment and installations should be made and grounded in accordance with the National Electrical Code. In areas where explosion hazards exist, workers should be required to use non-ferrous tools and to wear conductive and non-sparking shoes.

Special Firefighting Procedures: Flammable. Cool fire-exposed containers using water spray.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Wear appropriate personal protection clothing and equipment. Follow exposure controls/personal protection guidelines in Section 8. Contain and soak up residual with an absorbent (clay or sand). Take up absorbant material and seal tightly for proper disposal. Dispose of in accordance with local, state and federal regulations. Refer to Section 15 for SARA Title III and CERCLA information.

Section 7 - Handling And Storage

Handling: Do not get in eyes, on skin, or on clothing. Keep container tightly closed when not in use. Wear personal protection equipment. Do not breathe vapors. Wash thoroughly after handling. If pouring or transferring materials, ground all containers and tools. Do not weld, heat, cut or drill on full or empty containers. Use only in accordance with Carboline application instructions, container label and Product Data Sheet. Avoid breathing vapors or spray mist.

Storage: Keep away from heat, sparks, open flames and oxidizing agents. Keep containers closed. Store in a cool, dry place with adequate ventilation.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use explosion-proof ventilation when required to keep below health exposure guidelines and Lower Explosion Limit (LEL).

Respiratory Protection: Use only with ventilation to keep levels below exposure guidelines listed in Section 2. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use MSHA/NIOSH approved supplied air respirator. Follow all current OSHA requirements for respirator use.

Skin Protection: Recommend impervious gloves and clothing to avoid skin contact. If material penetrates to skin, change gloves and clothing. The use of protective creams may be beneficial to certain individuals. Protective creams should be applied before exposure.

Eye Protection: Recommend safety glasses with side shields or chemical goggles to avoid eye contact.

Other protective equipment: Eye wash and safety showers should be readily available.

Hygienic Practices: Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Use of a hand cleaner is recommended. Launder contaminated clothing before reuse. Leather shoes can absorb and allow hazardous materials to pass through. Check shoes carefully after soaking before reuse.

Section 9 - Physical And Chemical Properties

Boiling Range:	149 F (65 C) - 336 F (169 C)	Vapor Density:	Heavier than Air
Odor:	Solvent	Odor Threshold:	N/D
Appearance:	Viscous Green, Grey, Red or Black Liquid	Evaporation Rate:	Slower Than Ether
Solubility in H2O:	N/D		
Freeze Point:	N/D	Specific Gravity:	1.07
Vapor Pressure:	N/D	PH:	N/D
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Heat, sparks and open flames.

Incompatibility: Keep away from strong oxidizing agents, heat and open flames.

Hazardous Decomposition Products: Carbon monoxide, nitrogen oxides, and unidentified organic compounds. Consider all smoke and fumes from burning material as very hazardous. Welding, cutting or abrasive grinding can create smoke and fumes. Do not breathe any fumes or smoke from these operations.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Product LD50: N/D

Product LC50: N/D

<u>Chemical Name</u>	<u>CAS Number</u>	<u>LD50</u>	<u>LC50</u>
ETHYL ALCOHOL	64-17-5	7060 MG/KG, ORAL, RAT	20000 PPM/10 HRS, RAT, INHALATION
MICROCRYSTALLINE SILICA	14808-60-7	NOT AVAILABLE	NOT AVAILABLE
ISOPROPANOL	67-63-0	4720MG/KG RAT,ORAL	22500 PPM/8HRS RAT,INHALATION
ETHYL POLYSILICATE	11099-06-2	NOT AVAILABLE	NOT AVAILABLE
2BUTOXY ETHANOL	111-76-2	1746 MG/KG, RAT, ORAL	700PPM/7HRS MOUSE, INHALATION
METHYL ALCOHOL	67-56-1	2080MG/KG RAT ORAL	NOT AVAILABLE
ALUMINUM SILICATE	1332-58-7	NOT AVAILABLE	NOT AVAILABLE
MICA	12001-26-2	NOT AVAILABLE	NOT AVAILABLE
CARBON BLACK	1333-86-4	NOT AVAILABLE	NOT AVAILABLE
ETHYL BENZENE	100-41-4	3500 MG/KG RAT,ORAL	NOT AVAILABLE

Section 12 - Ecological Information

Ecological Information: No data

Section 13 - Disposal Information

Disposal Information: Dispose of in accordance with State, Local, and Federal Environmental regulations. Responsibility for proper waste disposal is with the owner of the waste.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Flammable Liquid NOS	Packing Group: II
DOT Technical Name:	Ethanol, Isopropanol	Hazard Subclass: N/A
DOT Hazard Class:	3	Resp. Guide 128
		Page:
DOT UN/NA Number:	UN 1993	

Additional Notes: None.

Section 15 - Regulatory Information

CERCLA - SARA HAZARD CATEGORY

This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and

312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA SECTION 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS Number</u>
2BUTOXY ETHANOL	111-76-2
METHYL ALCOHOL	67-56-1
ETHYL BENZENE	100-41-4

TOXIC SUBSTANCES CONTROL ACT

All components of this product are listed on the TSCA inventory.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(B) Substances exist in this product

U.S. STATE REGULATIONS AS FOLLOWS:

NEW JERSEY RIGHT-TO-KNOW

The following materials are non-hazardous, but are among the top five components in this product.

PENNSYLVANIA RIGHT-TO-KNOW

The following non-hazardous ingredients are present in the product at greater than 3%.

<u>Chemical Name</u>	<u>CAS Number</u>
WATER	7732-18-5
TITANIUM DIOXIDE	13463-67-7

CALIFORNIA PROPOSITION 65

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS Number</u>
MICROCRYSTALLINE SILICA	14808-60-7
CARBON BLACK	1333-86-4
ETHYL BENZENE	100-41-4

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards:

<u>Chemical Name</u>	<u>CAS Number</u>
TOLUENE	108-88-3

INTERNATIONAL REGULATIONS AS FOLLOWS:

CANADIAN WHMIS

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B2 D2A D2B

Section 16 - Other Information

HMIS Ratings

Health: 3

Flammability: 3

Reactivity: 0

Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, GR/LTR MIXED (UNTHINNED): CZ11: 479; CZ11 FG: 539 (Shop Use Only)

REASON FOR REVISION: Formatting error in previous revision

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained herein is, to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations

APPENDIX B

Emergency Spill Response Teams

Contact these contractors in this order in case of an emergency:

SCS ENVIRONMENTAL GROUP, LLC

114 BAILEY DRIVE

OLIVE BRANCH, MISSISSIPPI 38654

662-893-6700 OFFICE

901-619-5178 CELL

US ENVIRONMENTAL SERVICES

1855 VETERAN DRIVE

SOUTHAVEN, MISSISSIPPI 38671

866-281-3232 OFFICE

662-280-3232 OFFICE

Disposal Service

JIM'S TANK CLEANING SERVICE

PO 281431

WEST MEMPHIS, AR 38168

901-357-7237 OFFICE

APPENDIX C

INCIDENT CHECKLIST

The Emergency Coordinator must complete this checklist in the event of any explosion, fire, spill, or any other emergency that results in the implementation of this procedure.

Emergency Coordinator _____ Date _____

TASK	INITIAL	DATE/TIME
Has the appropriate emergency signal been sounded alerting all personnel?		
Has a quick but accurate assessment of the emergency been made?		
Has hazard area been evacuated?		
Have injured personnel received medical attention?		
Have the following emergency personnel and agencies been contacted (where applicable)? <ol style="list-style-type: none"> 1. National Response Center 2. Fire Department 3. Police Department 4. Hospitals 5. Local EMA 6. Tennessee Department of Public Safety 7. Other 		
Have all evacuated employees been accounted for?		
Have missing employees been identified and locations where they are likely to be found?		
Has missing employee's information been given to the proper authorities?		
Have the impacts to the community been assessed and action taken to protect the community?		
Have the materials in the spill, fire, or explosion been identified?		
Has the ambulance been poisoned near the assembly area?		
Have the environmental effects been assessed and addressed to limit overall impact?		

TASK	INITIAL	DATE/TIME
Has the location of the command post been determined and announced?		
Has the site been secured to control ingress and egress?		
Have all appropriate feed lines and sources of ignition, including power, been shut down? Identify:		
Has the necessary information been communicated to outside agencies and the community?		
Has the quantity of the spilled material been determined?		
Have the proper handling precautions been determined?		
Have off-site emergency response personnel been notified?		
Have emergency equipment and personal protective equipment been secured?		
Has the spill been contained?		
Has spill been contained?		
Has spilled material been absorbed and/or transferred to a recovery container?		
Has emergency equipment been decontaminated?		
Has cleanup debris been transferred to a recovery container?		
Have recovery containers been labeled?		
Has end of emergency been signaled?		
Has Incident Report been completed?		
Has necessary reports been filed with appropriate regulatory agencies?		
Have emergency supplies been restocked?		
Has incident been assessed and contingency plan revised accordingly?		

APPENDIX D

EMERGENCY EQUIPMENT INVENTORY TABLE

We supply our employees with hardhats, safety glasses, goggles, gloves, respirators, fresh air hoods, and disposable coveralls.

EQUIPMENT CATEGORY	EQUIPMENT TYPE	EQUIPMENT TYPE	LOCATION
Personal Protective Equipment, and Safety Equipment	<input type="checkbox"/> Hardhats	<input type="checkbox"/> Disposable Coveralls	Office
	<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> Respirators	Office
	<input type="checkbox"/> Goggles	<input type="checkbox"/> Fresh Air Hoods	Office
	<input type="checkbox"/> Gloves		Office
First Aid Equipment	<input type="checkbox"/> First Aid Book	<input type="checkbox"/> ½'x5yds Waterproof Tape	Office
	<input type="checkbox"/> Burn Gel Packs	<input type="checkbox"/> 3"x3" Gauze Pads	Office
	<input type="checkbox"/> Wound Closures	<input type="checkbox"/> 2" Medi Rip	Office
	<input type="checkbox"/> Antiseptic Wipes	<input type="checkbox"/> Anti-diarrheal	Office
	<input type="checkbox"/> Alcohol Wipes	<input type="checkbox"/> Allergy Relief	Office
	<input type="checkbox"/> Plastic Disposable Tweezers	<input type="checkbox"/> Antacid	Office
	<input type="checkbox"/> Splinter Out	<input type="checkbox"/> Non-Aspirin	Office
	<input type="checkbox"/> Disposable Thermometers	<input type="checkbox"/> Pain-Away	Office
	<input type="checkbox"/> Scissors	<input type="checkbox"/> Ibuprofen	Office
	<input type="checkbox"/> Triple Antibiotic	<input type="checkbox"/> Cold Relief	Office
	<input type="checkbox"/> Itch Relief	<input type="checkbox"/> Ice Pack	Office
	<input type="checkbox"/> Blistex	<input type="checkbox"/> Blood Stopper Compress	Office
	<input type="checkbox"/> Muscle Gel Relief	<input type="checkbox"/> Triangular Bandage	Office
	<input type="checkbox"/> Micro shield <input type="checkbox"/> Aleve	<input type="checkbox"/> Nitrile Gloves	Office
	<input type="checkbox"/> Thera Tears	<input type="checkbox"/> Eye-Wash-4oz Bottle	Office
	<input type="checkbox"/> Plastic Strips	<input type="checkbox"/> Eye- Wash-5 pk 1 oz bottles	Office
	<input type="checkbox"/> Elastic Strips	<input type="checkbox"/> Antiseptic Spray	Office
	<input type="checkbox"/> Extra Long Strips	<input type="checkbox"/> Burn Away	Office

	<input type="checkbox"/> Comfort Strips	<input type="checkbox"/> Cool & Sooth Gel Packs	Office
	<input type="checkbox"/> Knuckle Bandages	<input type="checkbox"/> Non-stick pads	Office
	<input type="checkbox"/> Fingertip Bandages		Office
Bloodborne Pathogens Infection Kit	<input type="checkbox"/> Clean-up Absorbent Pac	<input type="checkbox"/> Disposable Cardboard Scraper	Office
	<input type="checkbox"/> Disposable Apron	<input type="checkbox"/> Red Biohazard Plastic Bags w/ Ties	Office
	<input type="checkbox"/> Disposable Face Mask/Shield	<input type="checkbox"/> 8oz. Pour bottle Chlorine concentrate	Office
	<input type="checkbox"/> Disposable Nitrile Gloves	<input type="checkbox"/> Disposable Paper Towels	Office
	<input type="checkbox"/> Disposable Shoe Covers	<input type="checkbox"/> Benzalkonium Chloride Towelettes	Office
Fire Extinguishing Equipment	<input type="checkbox"/> Fire Extinguisher		Office Building
	<input type="checkbox"/> Fire Extinguisher		Paint Storage
	<input type="checkbox"/> Fire Extinguisher		Waste Paint Storage
	<input type="checkbox"/> Fire Extinguisher		Waste Paint Pour-up
	<input type="checkbox"/> Fire Extinguisher		Building 'A'
	<input type="checkbox"/> Fire Extinguisher		Building 'B'
	<input type="checkbox"/> Fire Extinguisher		Building 'C'
Spill Control Equipment	<i>Kit 1</i>	<i>Kit 2</i>	<i>Kit 1</i> - Paint Storage
	<input type="checkbox"/> Broom	<input type="checkbox"/> Broom	
	<input type="checkbox"/> Goggles (2)	<input type="checkbox"/> Goggles (2)	<i>Kit 2</i> -Between Building B&C
	<input type="checkbox"/> Shovel	<input type="checkbox"/> Shovel	
	<input type="checkbox"/> 5-gallon buckets-2	<input type="checkbox"/> 5-gallon buckets-2	
	<input type="checkbox"/> 2-pair of gloves	<input type="checkbox"/> 2-pair of gloves	
	<input type="checkbox"/> oil dry	<input type="checkbox"/> oil dry	

	<i>Kit 3</i> <input type="checkbox"/> Broom		<i>Kit 3- Building A</i>
	<input type="checkbox"/> Goggles (2)		
	<input type="checkbox"/> Shovel		
	<input type="checkbox"/> 5-gallon buckets-2		
	<input type="checkbox"/> 2-pair of gloves		
	<input type="checkbox"/> oil dry		
Communications and Alarm Systems	<input type="checkbox"/> Cell phones		Designated Employees
	<input type="checkbox"/> Telephones		Main Office

	<p align="center">Safety Regulation Manual</p>	<p>M & D Procedure No. 021 Page 1 of 7 Revision No:</p>
	<p align="center">Hot Work Program</p>	

I. Purpose:

In accordance with OSHA, the following program has been developed to ensure the health and safety of employees who will be working with potential ignition sources (hot work). M & D, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety and health process.

II. Scope

In order to ensure that this program is properly implemented, the Safety Coordinator has been designated as Policy Administrator. This procedure applies to all employees who work with devices that are considered ignition sources.

III. General Requirements

Fire Prevention and Protection

Basic Precautions

- 1) **Fire Hazards** – All fire hazards in the vicinity of any welding, cutting, or brazing operation will be removed from the area or guarded against possible ignition.
- 2) **Guarding** – If the object to be welded or cut cannot be readily moved, then guards will be used to confine all sources of ignition to protect the immovable hazards.
- 3) **Restrictions** – If the object to be cut or welded cannot be moved and all fire hazards in the vicinity cannot be removed or guarded against ignition, then welding and cutting operations will not be performed.

Combustible Materials

Care will be taken to remove all combustibles from flooring including cracks or holes. The same precaution will be taken in cracks or holes in walls and ceilings.

Fire Extinguishers

A type ABC or CO₂ fire extinguisher will be maintained in a state of readiness for immediate use at the location of all welding, cutting, and brazing operations. Pressurized water hoses may also be required by some host facilities.

Fire Watch

Fire watchers will have fire extinguishers readily available and will be trained in the proper use of fire extinguishers. They will be familiar with procedures for sounding emergency alarms and will maintain fire watch for at least 30 minutes after completion of operations.

	<p align="center">Safety Regulation Manual</p>	<p>M & D Procedure No. 021 Page 2 of 7 Revision No:</p>
	<p align="center">Hot Work Program</p>	

Authorization

The following personnel have been designated by management of this facility to authorize welding, cutting, and brazing operations:

- 1) Facility Plant Operations
- 2) Facility Maintenance Supervision

Floors

- 1) Where combustible materials such as paper clippings, wood shavings, textile fibers, or fine metal shavings are on the floor, the floor shall be swept clean for a radius of 35 feet.
- 2) Where the flooring is constructed of combustible materials, the floors shall be kept wet, covered with wet sand, or covered by fire resistant shields. Personnel operating arc welding or cutting equipment will be protected from shock!

Prohibited Areas

Welding, cutting, or brazing operations shall not be permitted in the following areas:

- 1) Areas not authorized by management.
- 2) In sprinkled buildings while protection is impaired.
- 3) Presence of explosive atmospheres.
- 4) Near large quantities of exposed combustible materials.

Relocation of Combustibles

All combustibles will be relocated at least 35 feet from the work site. Where relocation is impractical, combustibles will be covered or shielded with metal or flame-proofed materials.

Combustible Walls and Ceilings

Where welding or cutting is to be performed on or near walls, partitions, ceilings, or roofs of combustible construction, fire resistant shields or guards shall be provided to prevent ignition.

Non combustible Walls

If welding or cutting is to be performed on a metal wall, ceiling, partition, or roof, precautions shall be taken to prevent ignition of a combustible material on the other side of the wall due to conduction or radiation.

Combustible Coverings

Welding, cutting, or brazing operations shall not be conducted on a metal partition, wall, ceiling, or roof, having a combustible coating, or on walls or partitions of combustible sandwich type panel construction.

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Piping

- 1) No welding, cutting, or brazing operations will be conducted on any type of piping until the content of that piping is discovered and considered safe.
- 2) No welding, cutting or brazing operations will be conducted on any type of piping positioned close enough to walls, ceilings, partitions, or flooring to cause ignition by conduction or radiation.

Supervision

Personnel designated by management of M & D Coatings Inc. responsible for welding, cutting, and brazing operations, will be responsible for and ensure the following:

- 1) The proper operating condition of equipment used in welding, cutting and brazing operations.
- 2) Determination of combustible or hazardous materials that is present or likely to be present.
- 3) Protection of combustible materials from ignition by guidelines held within this procedure.
- 4) Authorization has been obtained by host facility personnel before performing welding, cutting, and brazing operations.
- 5) The cutter or welder has secured approval that conditions are safe before starting any welding, cutting, or brazing operations.
- 6) Fire protection and fire extinguishers are properly located and operational at the site.
- 7) Where fire watch is required, the supervisor shall ensure personnel assigned duties of fire watch are aware of their duties and remain for at least 30 minutes after operations have ceased.

Welding or Cutting Used Containers

No welding, cutting, or brazing operations will be performed on any used container unless the container has been cleaned so thoroughly as to be certain there are no flammable materials being present in the container.

Confined Spaces

The following requirement will be followed during any welding, cutting, or brazing operation in any confined space of the host facility. Confined space procedures held within confined space policies of the host facility will be followed in conjunction with this policy and reviewed thoroughly by supervision, entry personnel, and safety observers, before entry into any confined space.

- 1) When welding operations are to be suspended for any period of time, such as breaks or shift change, all electrodes will be removed from the stingers so accidental contact cannot occur. All energy sources will be disconnected from welding equipment.

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- 2) Torch valves shall be closed and the gas supply positively shut off during suspended times of cutting or fuel-gas welding operations.
- 3) Only stingers and electrodes from welding equipment, torches and gas lines will be allowed in confined spaces. No compressed gas cylinders or welding machines will be allowed in any confined space of the host facility.
- 4) Any operation covered by this policy in a confined space will require forced air ventilation.

IV. Personnel Protection

Fall Protection

A welder or helper working on platforms, scaffolding, or runways shall be protected from falling by the use of railing, safety harnesses, or life lines.

Eye Protection

The following are minimum requirements of eye protection for personnel conducting operations or helping in operations covered by this policy:

- 1) Welding hoods will be worn by personnel performing, or helping perform, welding or fuel-gas cutting/welding.
- 2) Goggles or full-face shields will be worn for all brazing operations.
- 3) At no time will operations be conducted without the use of eye protection at least to the levels listed above.

Protective Clothing

All employees exposed to the physical hazards associated with welding, cutting, and brazing operations will utilize appropriate personal protective equipment at the level dictated by the type of operation to be performed and by authorizing personnel.

The following are minimum requirements of protective clothing for personnel conducting operations or helping in operations covered by this policy:

- 1) Leather welding gloves
- 2) Long sleeved shirt
- 3) Protective toe footwear
- 4) Protective welding shirt

Protective Screening

The following are minimum requirements of protective screening to be utilized by personnel conducting operations or helping in operations covered by this policy:

Screening will be utilized if personnel not conducting welding operations are subject to glare produced by welding operations and are not protected to the extent of personnel performing these operations.

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Confined Spaces

- 1) Air Replacement – All welding and cutting operations carried on in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or potentially oxygen deficient atmospheres. All air forced into a confined area will be clean and respirable.
- 2) Oxygen shall never be used for ventilation.

Zinc

- 1) Confined Spaces – Welding or cutting involving zinc-bearing base, filler metals, or metals coated with zinc-bearing materials shall require air replacement.
- 2) Indoors – Such operations involving zinc-bearing base, filler metals, or metals coated with zinc-bearing materials will be done using local exhaust.

Lead

- 1) Confined spaces – Welding or cutting involving lead-based paint shall be done using respiratory protection.
- 2) Indoors – Such operations will require local exhaust ventilation at a minimum. A Safety Specialists or Industrial Hygienist shall be consulted for instruction and possible monitoring.
- 3) Outdoors – Such operations will be done after consulting a Safety Engineer or Industrial Hygienist.

Beryllium

- 1) Any welding or cutting indoors, outdoors, or in confined spaces involving beryllium-containing base of filler metals, shall be done using local exhaust ventilation and airline respirators. A Safety Engineer or Industrial Hygienist shall be consulted for instruction.

Cadmium

- 1) Any Welding or cutting indoors or in confined spaces involving cadmium-bearing or cadmium-coated base metals shall be done using local exhaust ventilation and possible respiratory protection. A Safety Engineer or Industrial Hygienist shall be consulted for instruction.

Stainless Steel

- 1) Oxygen cutting, using a chemical flux or iron powder, or gas shielded arc cutting shall be done using mechanical ventilation to remove fumes generated.

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Cleaning compounds

- 1) Special care shall be taken by employees of this facility in using cleaning compounds, because of their potential toxicity or flammability. The manufacturer's suggestions will be followed in the use of any cleaning solvent after review by management of the MSDS.

V. Inspections of Welding, Cutting, and Brazing Equipment

Daily Pre-Use Inspections

- 1) Welding Equipment & Fuel-Gas Equipment – All equipment utilized during welding operations will be inspected prior to each daily use for the following:
- 2) Cleanliness – equipment will be kept free from excessive lint, oils, and flammable or combustible materials.
- 3) Serviceability – all equipment will be kept in a serviceable condition and will be insured of the capability of safe operation by Pre-Use daily inspections.
- 4) If any discrepancies are found during inspection, equipment will not be used until corrected or replaced.

Monthly Inspections

A recorded monthly inspection will be made of all equipment utilized in welding, cutting, and brazing operations and will be kept on file by the Maintenance Supervisor.

VI. Storage of Compressed Gases

Fuel Gas Storage:

- 1) Away from all sources of heat
- 2) With valve protection cap
- 3) In a well ventilated, well protected, dry location
- 4) At least 20 feet from highly combustible materials
- 5) In an assigned area
- 6) Not be placed in unventilated areas (lockers)
- 7) Empty cylinders will have valve closed and tagged

Oxygen Storage

- 1) Oxygen will not be stored near any highly combustible materials, especially oil or grease, or near reserve stocks of Acetylene.

	Safety Regulation Manual	M & D Procedure No. 021 Page 7 of 7 Revision No:
	Hot Work Program	

- 2) Oxygen will be stored at least 20 feet from any highly combustible materials or separated by a noncombustible barrier at least 5 feet high and having a fire resistance rating of one and a half (1 ½) hours.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 022 Page 1 of 5 Revision No:</p>
	<p align="center">Machine Guarding Safety Program</p>	

I. Purpose:

It is the policy of M & D Coatings Inc. to permit only trained and authorized employees to operate machinery, tools, or equipment at any time. This policy is applicable to:

- * daily operators of machinery, tools, and equipment; and
- * those who only occasionally have cause to use machinery, tools, or equipment.

This written Machine/Equipment Safety and Guarding Plan describes methods and practices for care and use of machines, equipment, and tools that can be read and understood by all managers, supervisors, and employees at M & D Coatings, Inc.. This written plan is intended to be used to:

- * create an awareness of the hazards among our workforce,
- * standardize procedures for use and care of the equipment,
- * provide a consistent format for training employees on the proper procedures to be used,
- * minimize the possibility of injury or harm to our employees, and
- * demonstrate M & D, Inc.'s compliance with machine safety and equipment usage requirements for general industry in Subpart O and P of 29 CFR 1910.

This plan is also intended to demonstrate M & D's compliance with machine and tool safety requirements for construction in Subpart I of 29 CFR 1926.

II. Administrative Duties

The HR Director/Safety Coordinator is responsible for developing and maintaining this written Machine/Equipment Safety and Guarding Plan. This person is solely responsible for all facets of the plan and has full authority to make necessary decisions to ensure the success of this plan. The plant manager and maintenance superintendent is also qualified, by appropriate training and experience that is commensurate with the complexity of the plan, to administer or oversee our machine/equipment safety program and conduct the required evaluations.

If, after reading this plan, you find that improvements can be made, please contact your supervisor and/or safety committee. We encourage all suggestions because we are committed to creating a safe workplace for all our employees and a safe and effective machine/equipment safety and guarding program is an important component of our overall safety plan. We strive for clear understanding, safe work practices, and involvement in the program from every level of the company.

	Health & Safety Manual	M & D Procedure No. 022 Page 2 of 5 Revision No:
	Machine Guarding Safety Program	

III. Pre-Operational Procedures

Hand tools must be inspected prior to use to ensure that:

- * For tools with jaws, jaws are not sprung to the point of slippage.
- * For impact tools, they are free of mushroom heads.
- * For tools with wooden handles, the handles are free of splinters or cracks and are tight in the tool.
- * The tool is otherwise safe for use.

Any machine or power-operated tool, function, or process which may cause injury will be guarded. All permanent guards are securely attached in good working order and all removable guards are in place on the machine or equipment before starting use. Guards meet these minimum general requirements:

- * Prevent contact - The guards prevent hands, arms, or any part of an employee's body or clothing from making contact with dangerous moving parts.
- * Secure - Guards are not easy to remove or alter. Guards and safety devices are made of durable material that will withstand the conditions of normal use. They are firmly secured to the machine.
- * Protect from falling objects - The guards ensure that no objects can fall into moving parts.
- * Create no new hazards - If a guard creates a hazard of its own such as shear point, a jagged edge, or an unfinished surface which can cause a laceration, then employees must not use the piece of machinery or equipment.

If a guard is defective, damaged, or in any way does not meet the requirements of these procedures, employees may not use the machine, and must immediately notify (enter your answer) and _____.

Where the operation of a machine or accidental contact with it can injure employees in the vicinity, the hazard is either controlled or eliminated.

Employees must locate and put on necessary and appropriate personal protective equipment (PPE) for use with the machinery or equipment before beginning use.

Employees must make sure that work areas are well-lit, dry, and clean before beginning work. Sawdust, paper and oily rags are a fire hazard and can damage machinery and equipment.

Employees must change loose/baggy clothing or take off jewelry that could become entangled in the machinery or equipment they are to use. Hair should be short or pulled back

Only qualified personnel may install or repair equipment. Employees must notify the supervisor if machinery or equipment is in need of any type of repair.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 022 Page 3 of 5 Revision No:</p>
	<p align="center">Machine Guarding Safety Program</p>	

If a lock or tag is in place on a piece of machinery or equipment, it may not be removed and the machinery or equipment may not be used.

IV. Operating Procedures

Employees may not remove a guard for any reason while operating any piece of machinery or equipment.

All necessary personal protective equipment (PPE) is worn while the machinery or equipment is running.

If an employee is distracted or unable to focus on the work with the machinery or equipment, they must stop work with that machinery or equipment.

Upon finishing with a piece of equipment, tool, or machine, basic maintenance must be performed. It should be kept sharp, oiled, and stored properly, as appropriate.

Problem equipment must be immediately reported to the supervisor so it can be repaired or replaced.

Employees must always use the proper piece of machinery or equipment for the job.

Electric cables and cords are kept clean and free from kinks. Equipment may never be carried by its cord.

V. Training Program

Under no circumstances will an employee operate a piece of machinery or equipment until he/she has successfully completed this company's machinery and equipment training program. This includes all new operators or users of machinery and equipment, regardless of claimed previous experience.

The company training program includes classroom instruction and operational training on each specific piece of machinery and equipment to be utilized by the employee in the assigned work area.

The HR Director/Safety Coordinator will identify all new employees in the employee Orientation Program and make arrangements with department management to schedule the classroom instruction and operational training for those employees previously identified in this section as needing training.

Classroom training consists of:

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 022 Page 4 of 5 Revision No:</p>
	<p align="center">Machine Guarding Safety Program</p>	

- * Review general safety training media.
- * Review of these written procedures by employee.
- * Successful completion of examination.

Operational training consists of:

- * Pre-operational procedures.
- * Basic maintenance for machinery and equipment.
- * Operational review of each piece of machinery, tool, or equipment the employee is expected to operate.

The Plant Manager is responsible for designating an Operations Trainer in each department/area.

Department management is responsible for scheduling the employee with the Department Operations Trainer to complete the operational training program after successful completion of the classroom training or re-training segment.

VI. New Equipment Start-up Inspection Procedures

The procedures in this section are required at the following times:

- * during and after the installation of new equipment,
- * during and after the rearrangement of existing equipment into a new layout, and
- * during the relocation of existing equipment.

While work is in progress on installation of new equipment qualified personnel with specific expertise, must be involved from the beginning to the end of the installation process.

Corrections that need implementation during the installation should be done as needed.

Before operation of the equipment in the workplace, all qualified personnel must signify that the equipment meets all expectations in their area of concern.

The Plant Manager or his/her designee in conjunction with the Maintenance Superintendent is accountable for all phases of installation and for making sure equipment is safe and efficient to run before letting employees operate it. Once these individuals have verified completion, the equipment can be put into service.

VII. Inspections

Machinery, tools, and equipment will be inspected regularly to insure safety and serviceability. Operators and maintenance inspects all machinery, equipment, cords and accessories before

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 022 Page 5 of 5 Revision No:</p>
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each use and as scheduled per the manufacturer's recommendations.

VIII. Recordkeeping

The Plant Manager or his/her designee is responsible for maintaining records of inspections of machinery, tools, and equipment.

The Plant Manager with the assistance of the HR Director/Safety Coordinator maintains records in employee safety files of individuals trained and certified for machinery and equipment.

IX. Disciplinary Procedures

Constant awareness of and respect for machine, tool, and equipment safety procedures and compliance with all safety rules are considered conditions of employment. Supervisors and individuals in the HR/Safety Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this machine, tool, and equipment safety program.

X. Program Evaluation

Although we may not be able to eliminate all problems, we try to eliminate as many as possible to improve employee protection and encourage employee safe practices. Therefore, the HR Director/Safety Coordinator is responsible for evaluating and updating this written plan. The evaluation will include a review of reported accidents, as well as near misses, to identify areas where additional safety measures need to be taken.

The HR Director/Safety Coordinator will also conduct a periodic review to determine the effectiveness of the program. This review may include:

- * a walk-through of the facility, and
- * interviews with employees to determine whether they are familiar with the requirements of this program and if safety measures are being practiced.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 023 Page 1 of 2 Revision No:</p>
	<p align="center">Housekeeping Procedure</p>	

I. Purpose:

M & D Coatings Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health & safety process. This procedure provides the minimum standards for housekeeping and orderliness expected of each employee and subcontractor at all Sunshine Mill's, Inc. facilities.

II. Scope

In order to ensure that this program is properly implemented, M & D Coatings Inc's HR Director/Safety Coordinator has been designated as policy coordinator. This procedure applies to all employees.

III. Definitions

Housekeeping/Orderliness: At any time, each piece of equipment, tool, material or apparatus shall be stored, stacked, located, placed, temporarily spotted or set up for manipulation in such a manner to render an accident highly improbable. A clean and orderly workplace is a safe workplace. M & D, Inc. expects each and every employee and subcontractor to do his/her part in assuring a clean and orderly workplace.

IV. General

Each supervisor shall take the initiative of encouraging and enforcing their employees to follow this procedure. Supervisors shall maintain an orderly work area in which routine housekeeping activities occur daily. Supervisors shall ensure that trash, scraps, and other wastes do not accumulate in the work area. The work area should be cleaned daily and when there is an accumulation of debris, trash, scraps, etc.

All employees are responsible for maintaining their work area in an orderly condition at all times and clean up and dispose of debris, scraps, or other waste daily.

Each work group is responsible for the orderliness and housekeeping associated with their work area.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 023 Page 2 of 2 Revision No:</p>
	<p align="center">Housekeeping Procedure</p>	

V. Minimum Requirements

The following minimum orderliness and housekeeping requirements are expected of all M & D Coatings Inc's. employees and subcontractors:

- 1.) Access walkways, exits, electrical panels and emergency equipment will not be blocked with materials, tools, ladders, scaffolds, welding leads, air hoses, electrical cords, etc.
- 2.) Electrical extension cords, light stringers, air hoses, and welding leads shall be elevated above the work surface (ideally 8 ft. over walkways) or be placed in a protective tract to prevent slip, trip, and fall hazards, and also to prevent damage to equipment.
- 3.) Welding rods, nuts, bolts, and washers shall be kept in proper containers.
- 4.) Shackles, slings, chokers, ladders, and safety equipment shall be removed from the work area when not needed. When not in use, these items shall be properly stored.
- 5.) Flammable and combustible liquids shall not be stored in a work area in excess of a daily application. These materials must be stored in appropriate containers depending on the amount and classification.
- 6.) Trash receptacles shall be placed in appropriate locations.
- 7.) All nails shall be removed from scrap lumber.
- 8.) Rubbish, trash, and debris shall be removed from the work area daily.
- 9.) All locations where drinking water is dispensed will require an adequate trash receptacle for the disposal of used drinking cups.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 024 Page 1 of 3 Revision No:</p>
	<p align="center">Accident/Incident Reporting/Investigation Program</p>	

I. Purpose:

This Accident Reporting and Investigation Plan describes methods and practices for reporting and investigating accidents. No matter how conscientious the safety effort at a company, accidents happen occasionally due to human or system error. Therefore, this written plan is intended to provide a means to deal with all workplace accidents in a standardized way and demonstrate our company's compliance with the reporting requirements of 29 CFR 1904. In addition, it is the policy of the company to comply with all workers' compensation laws and regulations. This procedure establishes the process for reporting and investigating accidents, near-miss incidents, and occupational injuries or illnesses so information can be obtained to prevent the occurrence of similar incidences and improve M&D Coatings, Inc. Health and Safety Program.

II. Administrative Duties

The Health & Safety Administrator is responsible for developing and maintaining this written Accident Reporting and Investigation Plan. This department is solely responsible for all facets of the plan and has full authority to make necessary decisions to ensure the success of this plan. Supervision is also qualified, by appropriate training and experience that is commensurate with the complexity of the plan, to administer or oversee our Accident Reporting and Investigation Plan and conduct investigations.

III. Accident Reporting Procedures

The Company President notifies the Health & Safety Administrator as soon as possible of serious accidents that is defined an event where three or more employees are injured in the same incident or a death occurred. This can include major property damage accidents and serious near-miss incidents.

The Company President shall provide the Health & Safety Administrator any preliminary information about the accident/incident. The Company President shall secure the accident/incident scene to the best of their ability and allow no one other than authorized personnel to enter until the Accident Investigation Team arrives or as directed by the Health & Safety Administrator. The accident/incident scene shall not be disturbed unless action is required to protect other employees or property in the area.

IV. Accident Investigation Procedures

Thorough accident investigations will help the company determine why accidents occur, where they happen, and any trends that might be developing. Such identification is critical to preventing and controlling hazards and potential accidents. For all accident investigations the Health & Safety Administrator shall immediately appoint an Accident Investigation Team and direct them to report immediately to the accident/incident scene. If OSHA conducts an investigation of the accident, the Health & Safety Administrator shall act as liaison between M&D Coatings, Inc. and OSHA. The Health & Safety Administrator will coordinate activities with the OSHA investigation

	Health & Safety Manual	M & D Procedure No. 024 Page 2 of 3 Revision No:
	Accident/Incident Reporting/Investigation Program	

and the Accident Investigation Team.

The Accident Investigation Team shall as a minimum:

- Collect or preserve any evidence
- Analyze all information
- Identify and obtain statements from all witnesses
- Conduct a methodical investigation of the accident and the events leading up to the accident.
- Conduct Post Injury Drug Tests
- Determine the corrective action to be taken to prevent future accidents
- Take corrective action

The Accident Investigation Team shall prepare a preliminary accident report. The report shall contain only factual data about the accident including an in-depth "Root Cause" analysis of all factors that contributed to the accident including deficiencies, violation of Health and Safety Procedures, and oversights in management that may have allowed conditions or circumstances to exist. The report shall include any observation and recommendations made to prevent a similar accident/incident from reoccurring.

V. Recordkeeping

Health & Safety Administrator or his/her designee is responsible for maintaining records and documentation.

VI. Annual Summary Posting

At the end of each calendar year the Health and Safety Administrator will post the OSHA summary in accordance with the current standard.

VII. Employee Involvement and Training

This plan is an internal document guiding the action and behaviors of employees, so they need to know about it. Accident/Incident Training thoroughly explains to all employees why the Accident Reporting and Investigation Plan was prepared and how employees may be affected by it. Employees are informed in how to report an injury or illness.

Employees are also provided limited access to our injury and illness records. Copies of relevant accessible records are provided by the next business day to all employees, former employees, and representatives that request them. Employees, former employees, and personal representatives who request accessible records will also receive them by the end of the next business day. However, authorized employee representatives will only receive requested accessible records within seven calendar days. All initial copies are provided to requestors free of charge. Additional copies involve a reasonable charge.

Our company does not discriminate against employees for:

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 024 Page 3 of 3 Revision No:</p>
	<p align="center">Accident/Incident Reporting/Investigation Program</p>	

- * Reporting a work-related fatality, injury, or illness;
- * Filing a safety and health complaint;
- * Asking for access to occupational injury and illness records; or
- * Exercising any rights afforded by the Occupational Safety and Health Act.

VIII. Program Evaluation

The Accident Reporting and Investigation Plan is evaluated and updated by Health & Safety Administrator to determine whether the plan is being followed and if further training may be necessary.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 025 Page 1 of 1 Revision No:</p>
	<p align="center">Material Handling Physical Lifting Program</p>	

I. Purpose

In accordance with OSHA, the following program has been developed to ensure the health and safety of employees involved in physically lifting heavy objects. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety and health process.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as policy administrator. This procedure applies to all employees who perform heavy lifting.

III. General Requirements

Lifting heavy objects is a common source of injuries which can be avoided if planning is performed.

- 1) Ensure that you are safely able to lift the load. If there is any question get another employee to assist with the lift.
- 2) Ensure you have good footing. Slips contribute to back injuries.
- 3) Lift with your legs NOT your back.
- 4) Ask for assistance with bulky, unstable objects; they are hard to handle regardless of their size.
- 5) Ensure that the object you are preparing to lift has no sharp edges, splinters or other hand hazards.
- 6) Ensure your path is clear, level, and smooth.
- 7) Face the object you are lifting. NEVER TWIST OR REACH TO THE SIDE WHEN LIFTING.
- 8) Get a firm grasp on the object, then bend your knees and lift in a steady smooth motion.
- 9) If you need to maneuver the load, turn your feet, NOT your back.
- 10) When two or more employees are working together to move an object, one person must be in charge of the move. This person needs to ensure everyone is informed of their task and gives clear signals during the actual movement of the object.
- 11) Thorough planning of hand placement, number of people required, travel path, object positioning and utilization of available material handling equipment, will result in safe, efficient material handling.

Remember: Always plan your lift.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 026 Page 1 of 3 Revision No:</p>
	<p align="center">Sandblasting Safety Procedure</p>	

I. Purpose

In accordance with OSHA, the following program has been developed to ensure the health and safety of employees involved in sandblasting activities. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety and health process.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as policy administrator. This procedure applies to all employees who perform sandblasting activities.

III. General Requirements

PPE (Personal Protective Equipment)

Fully operational air fed blast hood: check for properly functioning regulator and gauge, cape and inner collar should be intact.

There shall be no leaks or holes in the apparatus.

Check for the proper inner and outer shields.

A dust mask is required under the blast hood.

Use proper inner and outer shields that are in good operational condition.

Long sleeves, long legged pants and heavy leather gloves are required.

Other employees in the immediate area may be required to wear air fed blast hoods, air fed respirators, goggles, dust masks and ear plugs depending on their proximity to the sandblasting operation.

Other Safety Equipment Required

Automatically operating deadman type remote control shutoff switches (this is the same for pot tenders as well).

Do not disable the deadman feature or the remote control shutoff switch.

Anti-Whip cables must be used at hose connections.

Sandblast pots must be properly grounded, both during abrasive blasting and filling operations.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 026 Page 2 of 3 Revision No:</p>
	<p align="center">Sandblasting Safety Procedure</p>	

General Operations Rules:

Ensure proper footing before pressing the trigger, the back pressure from the nozzle can cause you to lose your balance.

Check all fittings daily; make sure the sandblast nozzle is tight.

Check the actuator on the deadman switch for proper length.

Do not defeat the deadman feature of the remote shutoff switch. This is cause for disciplinary action up to and including termination.

Point the nozzle only at the work surface or the ground.

Do not operate the sandblast pot unless the remote control shutoff switch is operating properly.

Always wear eye protection in the immediate area.

Do not make repairs on the equipment unless you are qualified and can ensure the pressure has been shut off.

General Operating Requirements:

Abrasive blasting operation in an urban/industrial setting should be performed indoors, in an approved blasting enclosure and conform to all regulations set out by OSHA.

If the abrasive blasting operation is outdoors, where people, property, or the environment may be affected, the company or individual performing the sandblasting must tarp the area surrounding the object being blasted to minimize escape of fugitive dust emissions.

The employer/individual performing the sandblasting shall ensure all practicable measures be taken to prevent fugitive dust emissions from entering the ventilating/heating systems of buildings, vehicles, property, etc. in the surrounding vicinity.

An outdoor blasting area shall be kept free of spent grit to prevent windblown particles.

Sandblasting of outdoor buildings, bricks, facades, etc. must be tarped around the working area, to minimize dust emissions as much as possible.

Avoid sandblasting on windy days where people are directly downwind.

Prevent paint chips, abrasive blast material (before blasting) and grit waste from coming into contact with storm water runoff from Industry.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 026 Page 3 of 3 Revision No:</p>
	<p align="center">Sandblasting Safety Procedure</p>	

The operator is responsible to ensure that all practical measures are taken to clean all equipment, property, etc. that may have been impacted by the blasting.

Operating Requirements: Suspected Hazardous Substances

Prior to any abrasive blasting, determine if it is likely that the paint being removed contains heavy metals such as lead. (See Lead Procedure Number 028).

Heavy metals may be found in residential applications prior to the late 1970's. wastes meeting the hazardous criteria must be disposed of as hazardous substances.

To protect the environment the spent paint, paint chips, grit waste, etc. must be collected and disposed of appropriately.

Segregate waste whenever possible to reduce treatment, disposal, and management costs.

It is the responsibility of the generator of the waste to properly identify, contain, and Dispose of hazardous materials.

If you are accidentally sandblasted, immediately see a doctor. This is a serious injection type wound and must be seen by a physician.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 027 Page 1 of 2 Revision No:</p>
	<p align="center">Water blasting Safety Procedure</p>	

I. Purpose

In accordance with M & D Coatings, Inc. company procedures, the following program has been developed to ensure the health and safety of employees involved in water blasting activities. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety and health process.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as policy administrator. This procedure applies to all employees who perform water blasting activities.

III. General Requirements

PPE (Personal Protective Equipment)

The following personal protective equipment is required:

Hard hats with a clear face shield attached, safety glasses or goggles are required in addition to the face shield.

Steel toe boots, rubber gloves and a rain suit are also required when water blasting.

General Operations Rules:

Inspect equipment daily for leaks, cracks in hoses, damaged valves, and gauges.

Ensure proper footing before pressing the trigger, the back pressure from the nozzle can cause you to lose your balance.

Hand and foot controls with emergency dump valves are to be used at all times.

Inspect the work site BEFORE beginning work for any electrical hazards as well as other hazards that might be visible. Remember you are working with water!

Do not work off of a ladder or similar type perch.

Shut down the engine of the machine before attempting any repairs.

You are responsible for ensuring the equipment is operational.

You are the person most responsible for your own safety.

Ensure that there is adequate lighting in the work area. The water overspray reduces the lights ability to illuminate the work area.

	Health & Safety Manual	M & D Procedure No. 027 Page 2 of 2 Revision No:
	Water blasting Safety Procedure	

An injury when using water blasting equipment can be an injection type injury and MUST be treated as such by the attending physician.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 028 Page 1 of 2 Revision No:</p>
	<p align="center">Spray Painting Safety Procedure</p>	

I. Purpose

In accordance with OSHA and standard 29 CFR 1917.153, the following M&D Coatings, Inc. program has been developed to ensure the health and safety of employees involved in water blasting activities. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety and health process.

II. Scope

In order to ensure that this program is properly implemented, the Health and Safety Administrator has been designated as policy administrator. This procedure applies to all employees who perform spray paint activities.

III. General Requirements

PPE (Personal Protective Equipment)

The following personal protective equipment is required:

An air fed respirator is required when working in a confined space.

A chemical cartridge respirator is required when applying toxic materials, always check the label or information material to ensure that the cartridge will protect against the particular material you are working with.

A dust mask is used when applying non-toxic materials in open air.

The chemical make up of each paint material will determine whether long sleeved shirts, long legged pants, eye protection and gloves are required. Please see your supervisor if you are unsure of the PPE to be used.

General Operations Rules:

Inspect equipment daily for leaks, cracks in hoses, damaged valves, and gauges.

Inspect all fittings daily, check hoses for weak, worn or damaged areas caused by traffic, sharp corners, pinching or kinking.

Never put your hand or finger directly over the spray tip.

Always use a new dust mask.

Clean chemical cartridge respirators after each use.

If a respirator is used by more than one employee always make sure that it has been disinfected before issuing.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 028 Page 2 of 2 Revision No:</p>
	<p align="center">Spray Painting Safety Procedure</p>	

(For more information on respirators and cartridges refer to M&D Procedure Number 004).

Disconnect the pressure source from the airless spray gun or conventional spray pot and release the pressure prior to performing any repairs.

Never exceed the pressure rating on any component in the system.

Never alter or modify any component in the system.

Tighten all fluid connections before each use and replace any leaking connections before proceeding.

M & D Company Inc. will follow all OSHA requirements as required and when applicable.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 029 Page 1 of 7 Revision No:</p>
	<p align="center">Lead Exposure Protection Program</p>	

I. Purpose:

29 CFR 1926.62 Standard

All construction work involving exposure or potential exposure to lead is covered by the Standard. This includes lead paint abatement, work on bridges and steel structures that are coated with lead-containing materials, demolition of structures where lead or materials containing lead are present, and removing or encapsulating materials containing lead.

II. Scope

This plan applies to all M & D Coatings, Inc. employees and subcontractors that will be working around any operation involving lead.

III. Controls

METHODS OF COMPLIANCE

The OSHA standard requires that M & D Coatings, Inc. follow certain steps to reduce your exposure to lead. These must be followed in a specified order. If these steps are not sufficient or feasible to reduce exposures to or below the PEL, M & D Coatings, Inc. will provide workers with personal protective equipment.

Compliance Program

Prior to the start of a job involving lead exposure, M & D Coatings, Inc. will establish and implement a written compliance program. That program will address a number of specific items, which are outlined in the standard at 1926.62(e)(2). The written program must include the following:

- A description of each activity in which lead is released into the air.
- The procedures that will be used to achieve compliance, including engineering controls.
- Air monitoring results that identify where the lead is being released into the air.
- The work practices to be used.

M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our health and safety process.

	<p align="center">Health & Safety Manual</p>	<p>M & D Procedure No. 029 Page 2 of 7 Revision No:</p>
	<p align="center">Lead Exposure Protection Program</p>	

IV. Exposure Limits

AL (Action Level) The action level is 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air calculated as an 8-hour time weighted average (TWA). If exposures are at or over the action level, your employer must begin to comply with the standard by implementing a number of provisions of the standard. These include periodic exposure monitoring, biological monitoring, and employee training. The purpose of the Action Level is to establish a lower level of exposure, which requires your employer to begin to provide you protection before your exposure goes over the Permissible Exposure Limit (PEL).

PEL (Permissible Exposure Limit) The PEL is a Time Weighted Average (TWA) exposure limit averaged over an 8-hour work shift. The PEL is 50 micrograms of lead per cubic meter ($\mu\text{g}/\text{m}^3$) of air. If a worker is exposed to lead in excess of the PEL for 30 days or more per year, the employer must begin to find ways to reduce the air concentration of lead. If that is not possible, then approved respirators must be issued to each worker that is exposed.

V. Exposure Assessment

M & D Coatings, Inc. is required to determine the airborne level of lead exposure you are exposed to in work involving lead. This is termed exposure assessment. Personal air monitoring is required in order to determine your exposure level.

Initial Assessment

An initial assessment of exposure must be conducted to determine whether workers are exposed over the Action Level for all work involving lead. One full shift of personal air samples for each job classification in each work area is required. Sampling must be representative of workers' regular daily exposure.

Periodic Assessments

If the initial assessment indicates exposures over the AL, or the PEL, the M & D Coatings, Inc. is required to conduct exposure assessments:

- Every 6 months if the worker exposure is at or above the AL
- Quarterly if exposure is above the PEL.

Additional assessments will be made whenever a change occurs in practices, procedures, equipment, personnel, or other factors that could be expected to result in a change in lead exposures.

Protection of Employees During Exposure Assessment

This standard is unique. It recognizes that there are a number of jobs and tasks in construction where exposure to lead will likely be over the PEL, in some cases at very high exposure levels. This is particularly true for work performed on bridges, steel structures, and demolition projects. The standard requires that, if a contractor is engaged in any presumed exposure activities, the workers must be protected by specified measures **BEFORE** exposure assessments are made. In other

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words, the contractor cannot assign jobs for these tasks, collect personal samples, wait for results from the lab, and then provide workers protection.

VI. Categories of Presumed Exposure

1) Tasks for which exposures must be assumed to be over the PEL but less than 10 times the PEL. These include the following activities where lead-containing paint or coatings are present:

- Manual demolition of structures (e.g., dry wall)
- Manual scraping
- Manual sanding
- Heat gun application
- Power tool cleaning with dust collection systems
- Spray painting with leaded paint

2) Tasks where exposures are presumed to be greater than 10 times the PEL, but less than 50 times the PEL. These include the following activities where lead-containing paint or coatings are present:

- Cleanup activities where dry expendable abrasives are used
- Abrasive blasting enclosure movement or removal
- Using lead-containing mortar

3) Tasks presumed to result in exposures greater than 50 times the PEL. These include the following activities where lead-containing paint or coatings are present:

- Abrasive blasting
- Welding
- Cutting
- Torch burning

For all three categories of work tasks with **presumed** exposures over the PEL, M & D Coatings, Inc. is required, to provide, before doing the exposure assessment :

- Appropriate respiratory protection
- Appropriate personal protective clothing and equipment
- Changing areas that are free of lead
- Hand washing facilities
- Biological monitoring that measures the amount of lead in the blood

VII. Employee Notification

M & D Coatings, Inc. will notify you in writing, within 5 working days after completion of exposure assessments, of the results that represent your individual exposure. If a coworker wore the

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personal air monitor and the results of that sample are intended to represent your exposure, you also will be notified in writing.

The contractor also must allow workers or their designated representatives to observe any lead exposure monitoring that is conducted.

- How contractors on multi-contractor sites will inform workers of exposure to lead.

In addition, the compliance program must provide for frequent and regular inspections of job sites, materials, and equipment by a competent person. The written program also must be provided upon request to affected workers and their representatives.

VIII. Administrative Controls

One method to limit employee exposure to lead is to limit the time during which employees are exposed. If administrative controls are used, the M & D Coatings, Inc. will maintain certain records, including the names and ID numbers of affected employees and the length of time the worker was on the job.

IX. Respiratory Protection

Respirators must be provided at no cost to workers when:

- Exposures exceed the PEL
- An employee requests one

Where respirators are used, M & D Coatings, Inc. will refer to our written respiratory protection program (Please see Procedure Number 004 Respiratory Protection) which complies with the OSHA respirator standard under 29 CFR 1910.134. That standard requires fit testing (for negative pressure respirators) and medical certification that the employee can safely use a respirator, among other requirements.

X. Protective Clothing and Equipment

M & D Coatings, Inc. is required to provide protective clothing to each employee exposed to lead over the PEL. The clothing is to be provided at no cost to the employee M & D Coatings, Inc. is responsible for cleaning, laundering, disposal, repair, and replacement of such gear.

M & D Coatings, Inc. will ensure that no worker wears contaminated clothing or equipment off the job and that such clothing and equipment is removed after the job only in the change areas provided

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XI. Housekeeping & Hygiene Practices

The standard requires that all work areas covered by the standard be kept as free of lead accumulation as practicable through the recommended use of high efficiency particulate air (HEPA) vacuums.

Hygiene Facilities

The standard has a number of provisions that address the fact that lead is a health hazard to workers from routes of exposure other than breathing air that contains lead dust. These aspects of the standard are designed to protect workers from ingesting lead and from tracking lead around the job site and into their homes. Included are the requirements for cleaning:

- Change areas
- Showers
- Eating facilities

Change Areas

Where workers are exposed over the PEL, or where workers are performing presumed exposure tasks, clean change areas will be provided. These areas will include separate storage areas for protective clothing and equipment and for street clothes. No worker will leave the job wearing contaminated clothing or equipment. Disciplinary action up to and including termination will occur.

Showers

Showers or hand washing facilities will be provided so workers may remove lead dust from themselves prior to eating, drinking, smoking, or leaving the site. M & D Coatings, Inc. will provide soap and clean towels.

Eating Facilities

Lead-free eating areas or lunchroom facilities will be provided for workers exposed over the PEL. Workers using these facilities must wash their hands and face prior to eating, drinking, smoking, or applying cosmetics, and they must not enter the area wearing contaminated clothing.

XII. Medical Surveillance

Medical surveillance is an important provision because the lead we inhale or ingest ends up in our blood. Therefore, the medical surveillance program centers around the determination of the level of lead in the worker's blood.

Initial Surveillance

Initial surveillance of your blood lead level must be made before you begin any work where there is lead exposure. This gives M & D Coatings, Inc. a base line against which to judge future blood sample results. The initial test is required if you are exposed at or above the Action Level on any one day, or you are engaged in lead work covered by any of the three presumed exposure category work tasks.

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Following the initial blood sample, additional blood samples are required on a schedule of every 2 months during the lead exposure job for the first 6 months, and every 6 months after that.

Medical Examinations

Medical examinations involve an examination by a licensed physician in accordance with criteria established in the standard. M & D Coatings, Inc. will make available medical exams to those workers exposed to lead in excess of the action level for more than 30 days in any consecutive 12-month period based on the following schedule:

- Annually for each worker whose blood lead level was at or above 40 µg/dl
- When a worker has signs or symptoms of lead poisoning
- When a worker wants medical advice about having children or a worker is pregnant
- When a worker has problems breathing while wearing a respirator

Medical examinations must be made available to you at no cost and at reasonable times and places. Your employer is entitled to receive ONLY the physician's written medical opinion that addresses whether the worker has any medical condition that could put the worker's health at increased risk from exposure to lead. M & D Coatings Inc., will provide you a copy of this medical opinion.

Medical Removal Protection (MRP)

If your blood lead level is at or above 50 µg/dl, M & D Coatings, Inc. will provide another blood lead test within 2 weeks. If the second test is also at or above 50 µg/dl, you qualify for Medical Removal Protection (MRP).

This means that you must be removed from any job with lead exposures. If M & D Coatings, Inc. does not have any other job for you that does not involve lead exposure, we will pay you MRP benefits, which maintain your total earnings, seniority, and other employee rights and benefits for a period of up to 18 months (or as long as your job would have lasted) or until your blood lead level drops below 40 µg/dl.

If M & D Coatings, Inc. moves you to a non-lead exposed job, your earnings, seniority, and benefits cannot be reduced. If you file for workers' compensation, the amount the employer must pay you is reduced by the amount of your compensation payment.

XIII. Employee Information and Training

The standard requires that M & D Coatings, Inc. provide you training prior to and annually thereafter at the time of job assignment where you are subject to exposure to lead at or above the Action Level.

Signs

M & D Coatings, Inc. will post the following sign in each work area where employees' exposure to lead is above the PEL:

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**WARNING:
LEAD WORK AREA
POISON
NO SMOKING OR EATING**

XIV. Recordkeeping

M & D Coatings, Inc. will establish and maintain accurate records covering a number of matters, including exposure monitoring, medical surveillance, medical removals, and objective data used to establish the basis for avoiding the requirement to conduct initial exposure monitoring. All of these records will be available to you, whether you are a current or past employee, or to your designated representative.

	<p align="center">Safety Regulation Manual</p>	<p>M & D Procedure No. 030 Page 1 of 7 Revision No:</p>
	<p align="center">Substance Abuse Policy</p>	

I. Purpose:

To help ensure a safe, healthy and productive work environment for employees of M & D Coatings, Inc. and others on M & D Coatings, Inc. property, to protect M & D Coatings, Inc. property and assets and to assure efficient operations, M & D Coatings, Inc. has adopted this policy on drugs, alcohol and other prohibited items. That commitment is jeopardized when an M & D Coatings, Inc. employee illegally uses drugs on or off the job.

It is the responsibility of M & D Coating, Inc.'s supervisors to counsel employees whenever they see changes in the performance or behavior that suggest an employee has a drug problem. Although it is not the supervisor's job to diagnose personal problems, the supervisor should encourage such employees to seek help and advise them about available resources for getting help. Everyone shares responsibility for maintaining a safe work environment, and co-workers should encourage anyone who has a drug problem to seek help.

The goal of this policy is to balance our respect for individuals with the need to maintain a safe, productive drug-free environment. The intent of this policy is to offer a helping hand to those who need it, while sending a clear message that the illegal use of drugs and the abuse of alcohol are incompatible with employment at M & D Coatings, Inc.

II Company Property and Premises

For purposes of this policy, the term "M & D Coating, Inc.'s property" or "M & D Coating Inc.'s premises" is used in its broadest sense and includes all property, facilities, land, offices, living quarters, buildings, structures, fixtures, installation, trailers, equipment, automobiles, trucks, all other vehicles, and parking areas, whether owned, leased, used or under the control of M & D Coatings, Inc. This may also include other work locations, including the job site of the customer, or to and from those locations while in the course and scope of M & D Coatings, Inc. employment.

III Prohibitions

Therefore, M & D Coatings, Inc. has established the following policy, pursuant to T.C.A. Section 50-9-100 et. Seq.:

- It is a violation of M & D Coatings, Inc. policy for any employee to use, possess, sell, trade, offer for sale, or offer to buy illegal drugs or otherwise engage in the illegal use of drugs on or off the job.
 - Illegal drugs, controlled substances, mood or mind-altering substances, "look-alike" substances, designer and synthetic drugs, and certain inhalants at detectable levels or established levels. ("Illegal drugs", for purposes of this policy, include drugs, which are not legally obtainable and drugs, which are legally obtainable but have been obtained illegally. "Detectable levels" or "Identifiable trace quantities", for purposes of this policy, is the presence of an illegal or prohibited drug or substance found in the body fluids at level of detection above the lowest cut-off level as established by the analytical methods used by the testing laboratory.) (See Section IIIC for alcohol levels and Section VII B for drug levels).
 - Unauthorized alcohol beverages; intoxicating substances, except as specifically authorized for M & D Coatings, Inc. functions or events.

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- Equipment, paraphernalia and literature pertaining to illegal drug or substance use.
- It is a violation of M & D Coatings, Inc. policy to use prescription drugs and over-the-counter medications except under the following conditions:
 - The drugs have been prescribed by a licensed physician for the person in possession of the drugs.
 - The drugs/medications are kept in their original containers(s).
 - A registered/licensed pharmacist filled the prescription within the last twelve (12) months for the person possessing the drug/medication and the drug/medications in the original container(s) from the pharmacy.
 - M & D Coatings, Inc., at all times, reserves the right to have a physician determine if a prescription drug or medication produces hazardous effects and may restrict the employees work activity.
- It is a violation of M & D Coatings, Inc. policy to be under the influence of licit or illicit drugs or alcohol on M & D Coatings, Inc. premises or during M & D Coatings, Inc. business working hours or while having a detectable amount of an illegal or prohibited drug or substance found in the body fluids at levels of detection above the lowest cut-off level as established by the analytical methods used by the testing laboratory. Alcohol levels equal to or in excess of .04 percent blood alcohol content while on M & D Coatings, Inc. property/premises will be considered a violation of this policy.
- It is a violation of M & D Coatings, Inc. policy for any employee to report to work under the influence of or impaired by alcohol and the use of alcohol off M & D Coatings, Inc. premises that adversely affects the individual's work performance, his own or others safety at work, or the M & D Coatings, Inc.'s regard or reputation in the community.
- Switching or adulterating any specimen submitted for testing.
- Refusing consent to testing or to submit a specimen for testing when requested by management.
- Failing to adhere to the requirements of any drug or alcohol treatment or counseling program in which the employee is enrolled.
- Conviction under any criminal drug statute for a violation occurring in the workplace. Refusing to sign a statement agreeing to abide by the M & D Coating, Inc.'s Substance Abuse Policy/Program.

IV. Arrest or Conviction under Criminal Drug Statute

As a condition of employment, employees must abide by the terms of this policy and must notify M & D Coatings, Inc. in writing of any conviction of a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such violation.

The M & D Coatings, Inc. offers resource information on various means of employee assistance in our community, including but not limited to drug and alcohol programs. Employees are encouraged to use the resource file; which is located in the main office. In addition, we will distribute this information to employees for their confidential use.

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V. Specific Requirements

Because of the importance of this policy, M & D Coatings, Inc. reserves the right, at all times, and employee accepts as a condition of employment, that while on the premises and property described above and circumstances warrant, to have M & D Coatings, Inc. supervisors and or authorized search and inspection specialist, including scent trained dogs, conduct searches and inspections of employee's, or other person's personal property and effects to include, but not limited to. Living quarters, lockers, baggage, offices, desks, tool boxes, clothing, and vehicles, for the purpose of determining if such employee or other person(s) are using, possessing, selling, manufacturing, distributing, concealing or transporting any of the prohibited items and substances contained in this policy. Any person who is found in violation of any portion of the policy will be removed from M & D Coatings, Inc. property and will be subject to disciplinary action as follows:

- Anyone caught selling or distributing prohibited substances on the M & D Coatings, Inc. property/premises will be terminated.
- Anyone refusing to provide a specimen for drug or alcohol testing will be terminated.
- Any employee who has a positive drug or alcohol screen for a prohibited item will be subject to disciplinary action, which may include immediate termination. Disciplinary action will be at the employer's sole discretion when, in the employer's determination, the employee's use of drugs or alcohol threatens or jeopardizes other M & D Coatings, Inc. employees, property, or accounts, clients and customers.

VI. Testing, Searches and Inspections

The employee's supervisor (with the officer(s) of M & D Coatings, Inc.'s approval) has the right to conduct an on-the-spot search and inspection of employee's, or others personal property and effects, as described above, if said supervisor has a reasonable suspicion* that employee, or others, are in direct violation of any part of this policy. All searches and inspections conducted by outside authorized specialists will be in the presence of an M & D Coatings, Inc. representative. Searches will be performed with concern for the privacy of each employee or individual. Testing, as defined herein, may require employees and others present on M & D Coatings, Inc. property to submit to a urine drug test and/or blood test. These tests may be utilized under the following circumstances:

- Pre-employment. Required of any qualified applicant or candidate as a condition of consideration of employment with M & D Coatings, Inc. Any applicant with confirmed positive test results will be denied employment.
 - Applicants will be required to submit voluntarily to a urinalysis test at a laboratory chosen by M & D Coatings, Inc., and by signing a consent agreement form that contains a list of common medications and substances which may alter or affect the outcome of a drug or alcohol test. This form will also have a space for the donor to provide any information that he/she considers relevant to the test, including the identification of currently or recently used prescription medication or other relevant information. This form will release M & D Coatings, Inc. from liability. The information form should be kept by the job applicant or employee for their personal use. If the job applicant or employee has a positive confirmed test result a medical review officer will attempt to contact the individual in order to privately discuss the findings with that person. The job applicant or employee

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should keep the form as a “reminder” to discuss this information at that time. The MRO will take this information into account when interpreting any positive confirmed test results. The information provided shall be treated as confidential and will not be given to the employer. Employees and job applicants have the right to consult with a MRO for technical information regarding prescription and non-prescription medicine.

- Substance abuse testing for job applicants and employees will include a urinalysis screen for the following drugs:
 - Alcohol: (not required for job applicant testing) Any “Alcoholic Beverage”, all liquid medications containing ethyl alcohol (ethanol). Please read the label for content. For example: Vicks Nyquil™ is 25% (50 proof) ethyl alcohol, Comtrex™ is 20% (40 proof), Contac Severe Cold Formula Night Strength™ is 25% (50 proof) and Listerine™ is 26.9% (54 proof).
 - Amphetamines: “speed”, “uppers”, etc.
 - Cannabinoids: THC, marijuana, hashish, “pot”, “grass”, “hash”, etc.
 - Cocaine: “coke”, “crack”, etc.
 - Phencyclidine: PCP, “angel dust”
 - Opiates: Narcotics, Heroin, codeine, Morphine, “smack”, “dope”, etc.
 - If the physician, official, or lab personnel have reasonable suspicion to believe that the job-applicant has tampered with the specimen, the applicant will not be considered for employment.
 - M & D Coatings, Inc. will not discriminate against applicants for employment because of a past history of drug or alcohol abuse. It is the current illegal use and/or abuse of alcohol, preventing employees from performing their jobs properly, that M & D Coatings, Inc. will not tolerate.
- **Post-accident.** Following any on-the-job injury that requires treatment at a medical facility, or following a serious or potentially serious accident or incident involving damage to M & D Coatings, Inc. property; including, but not limited to vehicles and other equipment. All persons involved and within the immediate vicinity of the incident may be required to be tested.
 - **Reasonable Suspicion.** When an employee’s supervisor has a reasonable suspicion* that an employee, or other person on M & D Coatings, Inc. property, is intoxicated, using or under the influence of prohibited drugs and substances. Whenever M & D Coatings, Inc. suspects that an employee’s work performance or on the job behavior may have been affected in any way by alcohol or drugs, or that an employee has otherwise violated this policy. When an employee or person is found in possession of suspected illicit or unauthorized drugs and/or alcohol or when any of these items are found in an area controlled or used exclusively by designated employees.
 - **Random.** All employees will be subject to random drug testing at locations and frequency as specified by M & D Coatings, Inc.
 - **Return to Duty.** An employee who has been suspended by M & D Coatings, Inc. for violation of this policy may not return to duty until the employee has passed a drug and/or alcohol test and certain other conditions are met (as described under part VIII of this policy).
 - **Routine Fitness.** A covered employer must require an employee to submit to a drug or alcohol test if the test is conducted as part of a routinely scheduled employee fitness-for- duty medical examination where the examinations are required by; law, regulation, are part of the covered employer’s established policy, or one that is scheduled routinely for all members of an employment classification group.

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For Purposes of this Policy:

*"Reasonable suspicion" is a belief based on objective and articulate facts either physical, behavioral, or work performance related that are sufficient to lead a prudent supervisor to suspect that the employee, or other person, is using a prohibited drug, alcohol or substance.

VII. Procedures

Any employee reporting to work visibly impaired will be deemed unable to perform required duties and will not be allowed to work. If possible the employee's supervisor will first seek another supervisor's opinion to confirm the employee's status. Next, the supervisor will consult privately with the employee to determine the cause of the observation, including whether substance abuse has occurred. If, in the opinion of the supervisor, the employee is considered impaired, the employee will be sent home or to a medical facility by taxi or other safe transportation alternative – depending on the determination of the observed impairment – and accompanied by the supervisor or other employee if necessary. A drug or alcohol test may be in order. An impaired employee will not be allowed to drive.

- Specimen Collection. Specimen collection facilities will be established convenient to M & D Coatings, Inc. locations. Specimen collections will be conducted in accordance with standard industry practices in order to assure the integrity of the specimen.
- Confidentiality. All test results will remain confidential and under the control of the MRO. M & D Coatings, Inc. will keep drug test results information in a secure location separate from personnel files to minimize the exposure and possible breach of confidentiality.
- Contest/Explanation of Test Results. Employees and job applicants who have a positive confirmed drug or alcohol test result may explain or contest the result to the medical review officer within five (5) working days after receiving written notification of the test result from the medical review officer; if an employee's or job applicant's explanation or challenge is unsatisfactory to the medical review officer, the medical review officer shall report a positive test result back to the M & D Coatings, Inc.; a person may contest the drug test result pursuant to rules adopted by the Tennessee Department of Labor.

VIII. Reinstatement

Any M & D Coatings, Inc. employee who has been suspended for violation of this policy may be considered for reinstatement if all of the following conditions are met:

- Work is available.
- A statement is obtained from a drug and alcohol assessment counselor stating that the employee is fit for duty. If the counselor recommends further treatment, the employee must remain in an approved treatment program and may return to duty if, the managers of said treatment program and the MRO agree the employee is fit for duty. The employee's expense for assessment, treatment and all rehabilitation will be the sole responsibility of the employee.

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- The employee agrees to and passes a return to duty drug and/or alcohol test.
- The employee agrees to additional drug and/or alcohol test during the next 5 years. M & D Coatings, Inc. will determine the timing of these additional tests.
- Any other conditions deemed necessary by M & D Coatings, Inc.

IX. Employee Assistance

Employees who have substance abuse problems and voluntarily request assistance will be directed to a provider of such services without disciplinary action, provided the request of M & D Coatings, Inc. management to submit to a “random”, “post accident” or “reasonable suspicion” drug or alcohol test. Whether or not the employee is allowed to continue to work at M & D Coatings, Inc. facilities during treatment will depend on the recommendation of the treatment provider as it pertains to the employee’s ability to perform the duties identified in the appropriate M & D Coatings, Inc. job description.

Referral to an Employee Assistance Program is readily available from State and Federal Agencies. Information regarding treatment centers is available through most major medical facilities. Numerous medical clinics that specialize in these services are listed in the Yellow Pages.

The selection of the EAP facility, assessment counselor, and approved treatment programs as well as the costs of said services are the responsibility of the employee.

NOTICE

This Substance Abuse Policy/Program does not constitute a contractual undertaking by M & D Coatings, Inc. M & D Coatings, Inc. does not, through this policy, assume or offer to assume any obligations beyond that which applicable law may impose. M & D Coatings, Inc. reserves the rights to alter, amend, or discontinue any policy or program included in the Substance Abuse Policy/Program with or without notice at its sole discretion. The failure of M & D Coatings, Inc. to exercise any function in any particular way shall not be considered a waiver of M & D Coatings, Inc.’s right to exercise such function or preclude M & D Coatings, Inc. from exercising that prerogative in some other way. The employee is responsible to notify M & D Coatings, Inc., its agents, including but not limited to insurance carriers, testing laboratory, medical review officer and testing administrators of any administrative or civil action brought pursuant to this section.

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**DRUG AND ALCOHOL SCREENING
NOTIFICATION AND CONSENT
MEDICAL AUTHORIZATION AND RELEASE**

I HEREBY ACKNOWLEDGE that I have received and read the M & D Coatings, Inc.'s Substance Abuse Policy and understand that I must abide by it as a condition of employment. I also understand that as part of my application for employment and during my employment I may be required to submit to a drug and/or alcohol test and that submission to such testing is a condition of employment and disciplinary action, including termination, may result if I refuse to submit to such testing, or if the test results in a violation of M & D Coatings, Inc.'s Policy concerning substance abuse.

I understand that failing or refusing to submit to a drug and/or alcohol test may result in denial of workers' compensation and/or unemployment benefits.

THE UNDERSIGNED STATES THAT HE OR SHE HAS READ THE PREVIOUS ACKNOWLEDGEMENT AND UNDERSTANDS THE CONTENTS THEREIN.

Employee Signature

Date

Employee Name

Social Security Number

Witness

Date

	<p align="center">Safety Regulation Manual</p>	<p>M & D Procedure No. 031 Page 1 of 2 Revision No:</p>
	<p align="center">Quality Assurance Plan</p>	

I. Purpose:

M & D Coatings, Inc. strives to maintain Quality Assurance to provide our customers the best service possible.

II. Maintain an Accurate Flow of Project Information

Establish detailed scope of work.
Establish site contacts.
Analyze project specifications.
Dispense Technical Data Sheets for mixing instructions, application instructions, and equipment specifications.

III. Select Applicators

The selected applicators should have proven experience using the coatings to be applied.

IV. Maintain Daily Quality Control Inspections

In order to maintain the quality of our service we document our work using a Quality Control Form

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	Quality Assurance Plan	

V. Equipment and Standards Used in Quality Control

Equipment Used	Standards of Quality Control	Observed Value
Elcometer 345	SSPC-PA2	
Positector 6000 Dry Film Gauge	SSPC-PA2	
NBS Film Thickness Calibration	ASTM D-1186	
Taylor Sling Psychrometer	ASTM E-337	
Tinker-Razor Holiday Detector	AWWA D102-78 Sect.	
	8.4	
Photographic Surface Preparation	ASTM D-2200 ^	
	SSPC-VIS 1	
Wet Film Gauges	ASTM D-1212 ^ D713	
Textex Press-O-Film		
Blast Nozzle Needle Pressure Gauge	0-160 psig	
Magnetic Surface Temperature Thermometers	0-150°F	
Magnetic Surface Temperature Thermometers	0-500°F	

Estimator/Project Manager _____

Date _____

Superior _____

Date _____

Foreman _____

Date _____

	<p align="center">Health & Safety Manual</p>	<p>M&D Procedure No. 032 Page 1 of 7 Revision No:</p>
	<p align="center">Benzene Work Program</p>	

I. Purpose:

In accordance with OSHA, the following program has been developed to ensure the health & safety of employees working with Benzene. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety & health process.

II. Scope

In order to ensure that this program is properly implemented, the Health & Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees who could possibly work with or around Benzene.

III. Benzene

Written program

M & D Coatings, Inc. will review and evaluate this standard practice instruction, on an annual basis, when changes occur to governing regulatory sources that require revision, related company procedures that require a revision, when facility operational changes occur that require a revision, when there is an accident or close-call that relates to this area of safety, and anytime the procedures fail. This written program will be communicated to all affected personnel.

M& D Coatings, Inc. will establish and implement a written program to reduce employee exposure of benzene to or below the PEL, which is an airborne concentration of benzene in excess of one part of benzene per million parts of air (1 ppm) as an 8-hour time-weighted average, primarily by means of engineering or work practice controls.

This written program will also include a schedule for development and implementation of the engineering and work practice controls. These plans are to be reviewed and revised as deemed appropriate based on the most recent exposure monitoring data, to reflect the current status of the program.

The written compliance program will be furnished upon request for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives.

Hazard overview

Benzene is a naturally occurring substance produced by volcanoes and forest fires and present in many plants and animals, but it is also a major industrial chemical made from coal and oil. It evaporates into the air very quickly and dissolves slightly in water. It is highly flammable, its vapors can form explosive mixtures, and is formed from both natural processes and human activities. As a pure chemical, benzene is a clear, colorless liquid with a sweet odor.

In industry, benzene is widely used in the United States to make other chemicals, some types of plastics, resins, nylon and synthetic fibers, detergents, rubbers, lubricants, dyes, drugs, and

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pesticides. It ranks in the top 20 chemicals for production volume. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.

Some facts about benzene include the following:

Benzene can pass into the air from water and soil.

It reacts with other chemicals in the air and breaks down within a few days.

Benzene in the air can attach to rain or snow and be carried back down to the ground.

It breaks down more slowly in water and soil, and can pass through the soil into underground water.

Benzene does not build up in plants or animals.

Outdoor air contains low levels of benzene from tobacco smoke, automobile service stations, exhaust from motor vehicles, and industrial emissions.

Indoor air generally contains higher levels of benzene from products that contain it such as glues, paints, furniture wax, and detergents.

Air around hazardous waste sites or gas stations will contain higher levels of benzene.

Leakage from underground storage tanks or from hazardous waste sites containing benzene can result in benzene contamination of well water.

People working in industries that make or use benzene may be exposed to the highest levels of it.

Health affects

Brief oral or inhalation exposure to benzene at high levels can cause death; however, the main effects of these exposures are drowsiness, dizziness, headaches, and unconsciousness. These symptoms subside after exposure stops.

Long-term exposures at various levels can cause cancer and may affect normal blood production, possibly resulting in severe anemia and internal bleeding. Studies show that benzene is harmful to the immune system, increasing the chance for infections and possibly lowering the body's defense against tumors. Exposure to benzene has also been linked with genetic changes.

The most common exposure to benzene comes from breathing air containing benzene. Dermal exposure is also possible.

Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death.

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Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. It is not known whether benzene exposure affects the developing fetus in pregnant women or fertility in men.

The Department of Health and Human Services (DHHS) has determined that benzene is a known human carcinogen. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs.

Several tests can show if you have been exposed to benzene. There is test for measuring benzene in the breath; this test must be done shortly after exposure. Benzene can also be measured in the blood, however, since benzene disappears rapidly from the blood, measurements are accurate only for recent exposures.

In the body, benzene is converted to products called metabolites. Certain metabolites can be measured in the urine. However, this test must be done shortly after exposure and is not a reliable indicator of how much benzene you have been exposed to, since the metabolites may be present in urine from other sources.

Respiratory Protection

- For employees who use respirators, M & D Coatings, Inc. must provide respirators that comply with the requirements of this paragraph. Respirators must be used during:
- Periods necessary to install or implement feasible engineering and work-practice controls.
- Work operations for which M & D Coatings, Inc. establishes that compliance with either the TWA or STEL through the use of engineering and work-practice controls is not feasible; for example, some maintenance and repair activities, vessel cleaning, or other operations for which engineering and work-practice controls are infeasible because exposures are intermittent and limited in duration.
- Work operations for which feasible engineering and work-practice controls are not yet sufficient, or where M & D Coatings, Inc. can document that benzene is used in a workplace less than a total of 30 days per year, M & D Coatings, Inc. will use engineering controls, work practice controls or respiratory protection or any combination of these controls to reduce employee exposure to benzene to or below the PELs, except when M & D Coatings, Inc. will use engineering and work practice controls, if feasible, to reduce exposure to or below 10 ppm as an 8-hour TWA., to reduce employee exposure to or below the PELs.
- Emergencies.

M & D Coatings, Inc. must:

- Select, and provide to employees, the appropriate NIOSH approved respirators. M & D Coatings, Inc. must use the assigned protection factors listed in Table 1 to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), M & D Coatings, Inc. must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used.

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- Provide employees with any organic vapor gas mask or any self-contained breathing apparatus with a full facepiece to use for escape.
- Use an organic vapor cartridge or canister with powered and non-powered air-purifying respirators, and a chin-style canister with full facepiece gas masks.
- Ensure that canisters used with non-powered air-purifying respirators have a minimum service life of four hours when tested at 150 ppm benzene at a flow rate of 64 liters per minute (LPM), a temperature of 25° C, and a relative humidity of 85%; for canisters used with tight-fitting or loose-fitting powered air-purifying respirators, the flow rates for testing must be 115 LPM and 170 LPM, respectively.
- Any employee who cannot use a negative-pressure respirator must be allowed to use a respirator with less breathing resistance, such as a powered air-purifying respirator or supplied-air respirator.

M & D Coatings, Inc. will also ensure that all employees are notified of the information that is contained in the M & D Coatings, Inc. Respiratory Protection Program. This respiratory protection program was established in accordance with 29 CFR 1910.134.



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Table 1—Assigned Protection Factors ⁵					
Type of respirator ^{1,2}	Quarter mask	Half mask	Full facepiece	Helmet/hood	Loose-fitting facepiece
1. Air-Purifying Respirator	5	310	50		
2. Powered Air-Purifying Respirator (PAPR)		50	1,000	⁴ 25/1,000	25
3. Supplied-Air Respirator (SAR) or Airline Respirator					
• Demand mode		10	50		
• Continuous flow mode		50	1,000	⁴ 25/1,000	25
• Pressure-demand or other positive-pressure mode		50	1,000		
4. Self-Contained Breathing Apparatus (SCBA)					
• Demand mode		10	50	50	
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)			10,000	10,000	
Notes:					
¹ Employees may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration					
² The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.					
³ This APF category includes filtering facepieces, and half masks with elastomeric facepieces.					
⁴ The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.					
⁵ These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).					

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Protective Clothing

Personal protective clothing and equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided by M & D Coatings, Inc. at no cost to the employee and M & D Coatings, Inc. shall assure its use where appropriate. Eye and face protection shall meet the requirements of 29 CFR §1910.133.

Medical Surveillance

M & D Coatings, Inc. shall make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level 30 or more days per year; for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year; for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year prior to the effective date of the standard when employed by their current employer; and for employees involved in the tire building operations called tire building machine operators, who use solvents containing greater than 0.1 percent benzene.

Compliance Program

A compliance program shall be implemented when the PEL is exceeded. The PEL for Benzene is an airborne concentration of Benzene in excess of five micrograms per cubic meter of air (5 ug/m(3)), calculated as an eight-hour time-weighted average exposure (TWA).

This program will be provided for examination and copying upon the request of affected employees, their representatives, the Assistant Secretary and the Director.

Training

M & D Coatings, Inc. will provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (*e.g.*, flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.

Employee training shall include at least:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
- The physical and health hazards of the chemicals in the work area;
- The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and,
- The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

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Retraining

M & D Coatings, Inc. shall be provided for all affected employees as a minimum under the following conditions:

- 1) Whenever there is a change in job assignments.
- 2) Whenever there is a change in personal protective equipment.
- 3) Whenever there is a change in equipment that presents a new hazard.
- 4) Whenever there is a change in processes that presents a new hazard.
- 5) Whenever their work takes them into hazardous areas.
- 6) Whenever there is a change in Benzene safety procedures.
- 7) Whenever safety procedure fails resulting in a near-miss, illness, or injury.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards, or use of equipment or procedures. The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.

Certification

This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, the identity of each employee trained, the signature of the person conducting the training and the dates of training. These records must be kept for one year.

Program Review

This program must be reviewed and updated annually or more often to reflect significant changes in M & D Coatings' compliance status.

	<p align="center">Health & Safety Manual</p>	<p>M&D Procedure No. 033 Page 1 of 2 Revision No:</p>
	<p align="center">NORM – Natural Occurring Radioactive Material Work Program</p>	

I. Purpose:

The following program has been developed to ensure the health & safety of employees working with Natural Occurring Radioactive Material (NORM). M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety & health process.

II. Scope

In order to ensure that this program is properly implemented, the Health & Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees who could possibly work with or around NORM.

III. Natural Occurring Radioactive Material (NORM)

NORM Exposure

Technology Enhanced Naturally Occurring Radioactive Materials (TENORM) is the term used to describe exposures. TENORM is produced when radionuclides that occur naturally in ores, soils, water, or other natural materials are concentrated or exposed to the environment by activities, such as uranium mining or sewage treatment. M & D Coatings, Inc.'s employees are not exposed to any Naturally Occurring Radioactive Materials or any radionuclides from Technology Enhanced Naturally Occurring Radioactive Materials.

Employee Protection

Methods for protection against radiation are time, distance and shielding. The amount of radiation exposure increases as the time spent near the source of radiation increases. The farther away people are from a radiation source, the less their exposure. The greater the thickness and density of shielding around a radiation source, the smaller the exposure. Personal Protective Equipment (PPE) and personal hygiene are also important for protecting the employee from exposure to NORM.

Training

Employees should be trained in the hazards, location, methods to identify the hazards and methods used to protect the employees. This training should be conducted before any exposure occurs and annually thereafter. Employees should also be trained in respiratory protections selection, such as HEPA filters on respirators, and the limitations of the respiratory protection. The training should address potential exposures for both routine emergency situations.

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	NORM – Natural Occurring Radioactive Material Work Program	

Program Review

This program must be reviewed and updated annually or more often to reflect significant changes in M & D Coatings' compliance status.

	<p align="center">Health & Safety Manual</p>	<p>M&D Procedure No. 034 Page 1 of 4 Revision No:</p>
	<p align="center">Cadmium Work Program</p>	

I. Purpose:

In accordance with OSHA, the following program has been developed to ensure the health & safety of employees working with Cadmium. M & D Coatings, Inc. wishes to convey to the employees the importance of this program as an operating fixture of our safety & health process.

II. Scope

In order to ensure that this program is properly implemented, the Health & Safety Administrator has been designated as Policy Administrator. This procedure applies to all employees who could possibly work with or around Cadmium.

III. Cadmium

Written program

M & D Coatings, Inkwell review and evaluate this standard practice instruction, on an annual basis, when changes occur to governing regulatory sources that require revision, related company procedures that require a revision, when facility operational changes occur that require a revision, when there is an accident or close-call that relates to this area of safety, and anytime the procedures fail. This written program will be communicated to all affected personnel.

Compliance Program

A compliance program shall be implemented when the PEL is exceeded. The PEL for Cadmium is an airborne concentration of cadmium in excess of five micrograms per cubic meter of air (5 ug/m³), calculated as an eight-hour time-weighted average exposure (TWA).

This program will be provided for examination and copying upon the request of affected employees, their representatives, the Assistant Secretary and the Director.

Hazard overview

Cadmium is a natural element in the earth's crust. It is usually found as a mineral combined with other elements such as oxygen (cadmium oxide), chlorine (cadmium chloride), or sulfur (cadmium sulfate, cadmium sulfide). It doesn't have a definite taste or odor.

All soils and rocks, including coal and mineral fertilizers, have some cadmium in them. The cadmium that industry uses is extracted during the production of other metals like zinc, lead, and copper.

Cadmium does not corrode easily and has many uses. In industry and consumer products, it is used for batteries, pigments, metal coatings, and plastics.

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Health effects

Breathing high levels of cadmium severely damages the lungs and can cause death. Eating food or drinking water with very high levels severely irritates the stomach, leading to vomiting and diarrhea.

Long term exposure to lower levels of cadmium in air, food, or water leads to a build up of cadmium in the kidneys and possible kidney disease. Other potential long term effects are lung damage and fragile bones.

Animals given cadmium in food or water show high blood pressure, iron-poor blood, liver disease, and nerve or brain damage. We don't know if humans get any of these diseases from eating or drinking cadmium.

Skin contact with cadmium is not known to cause health effects in humans or animals.

Exposure to cadmium happens mostly in the workplace where cadmium products are made. The general population is exposed from breathing cigarette smoke or eating cadmium contaminated foods. Exposure can occur from a variety of methods, including the following:

Breathing contaminated workplace air (battery manufacturing, metal soldering or welding);

Eating foods containing it; low levels in all foods (highest in shellfish, liver, and kidney meats);

Breathing cadmium in cigarette smoke (doubles the average daily intake);

Drinking contaminated water; and

Breathing contaminated air near the burning of fossil fuels or municipal waste;

Breathing high levels of cadmium severely damages the lungs and can cause death. Eating food or drinking water with very high levels severely irritates the stomach, leading to vomiting and diarrhea.

Long term exposure to lower levels of cadmium in air, food, or water leads to a build up of cadmium in the kidneys and possible kidney disease. Other potential long-term effects are lung damage and fragile bones.

Animals given cadmium in food or water show high blood pressure, iron-poor blood, liver disease, and nerve or brain damage. It is not known if humans get any of these diseases from eating or drinking cadmium.

Skin contact with cadmium is not known to cause health effects in humans or animals, but the Department of Health and Human Services (DHHS) has determined that cadmium and cadmium compounds may reasonably be anticipated to be carcinogens.

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Tests are available in some medical laboratories that measure cadmium in blood, urine, hair, or nails.

Blood levels show recent exposure to cadmium, and urine levels show both recent and earlier exposure. Urine tests can indicate kidney damage. The reliability of tests for cadmium levels in hair or nails is unknown.

Tests are available to measure cadmium in your liver and kidney. The tests are expensive, but can help a doctor evaluate your risk of kidney disease.

Cadmium Exposure

M & D Coatings, Inc.'s employees are not involved in any operation where Cadmium is omitted. M & D Coatings, Inc.'s employees do not perform tasks in which the employees would be exposed to Cadmium during maintenance of ventilation systems and the changing of ventilation filters.

Respiratory Protection

M & D Coatings, Inc. has a respiratory protection in place. Please see M&D Procedure No. 004 for complete details.

Medical Surveillance

A medical surveillance program will be established and provided for employees who are or may be exposed to cadmium at or above the action level.

Training

M & D Coatings, Inc. shall provide training to each employee that could be exposed to Cadmium. The training will be conducted initially to ensure that the hazards associated with Cadmium are understood by all affected employees, and that the knowledge, skills and personal protective equipment required are acquired by employees.

The training shall as a minimum include the following:

- 1) Each authorized employee shall receive training in the recognition of applicable hazards involved with the particular job and job site, as well as the methods and means necessary for safe work.
- 2) The specific nature of the operation which could result in exposure to Cadmium.
- 3) The purpose, proper selection, fitting, use and limitation of personal protective equipment (PPE)
- 4) The adverse health effects associated with excessive exposure to Cadmium.
- 5) The engineering controls and work practices associated with the employee's job assignment, including training of employees to follow relevant good work practices.
- 6) The contents of any compliance plan in effect.
- 7) The employee's right of access to records under 29 CFR 1910.20.

Scheduled refresher training will be conducted on an annual basis.

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Retraining

M & D Coatings, Inc. shall be provided for all affected employees as a minimum under the following conditions:

- 1) Whenever there is a change in job assignments.
- 2) Whenever there is a change in personal protective equipment.
- 3) Whenever there is a change in equipment that presents a new hazard.
- 4) Whenever there is a change in processes that presents a new hazard.
- 5) Whenever their work takes them into hazardous areas.
- 6) Whenever there is a change in Cadmium safety procedures.
- 7) Whenever safety procedure fails resulting in a near-miss, illness, or injury.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards, or use of equipment or procedures. The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.

Certification

This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, the identity of each employee trained, the signature of the person conducting the training and the dates of training. These records must be kept for one year.

Emergency Action Plan

M & D Coatings, Inc. employees will utilize the worksite company's emergency action plan in the case of an emergency situation involving substantial releases of Cadmium and for any other emergency situation when on site.

Program Review

This program must be reviewed and updated annually or more often to reflect significant changes in M & D Coatings' compliance status.