

HAZARD COMMUNICATION PROGRAM

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HAZARD COMMUNICATION PROGRAM

Penn Fencing, Inc.

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HAZARD COMMUNICATION PROGRAM

Penn Fencing, Inc.

1.1 INTRODUCTION

This written Hazard Communication program (Hazcom) has been developed and implemented by Penn Fencing in order to comply with the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard. This program will be maintained in production office and is available for review upon request.

1.2 RESPONSIBILITY

HAZARD COMMUNICATION OFFICER - CHAD GALBREATH

- Ensure overall adherence to this program
- Ensure that all employees are trained
- Advise employees of any special precautions to follow when conducting non-routine tasks
- Provide hazardous chemical information to other personnel and/or subcontractors who may be exposed
- Review and update this program as necessary

SAFETY DATA SHEET (SDS) COORDINATOR - CHAD GALBREATH

- Establish and monitor the SDS program
- Update the SDS log and Hazardous Chemical list
- Maintain and update the company's list of hazardous chemicals
- Ensure that all primary and secondary containers are appropriately labeled
- Provide other employers with information regarding the chemicals/hazardous materials
- Inform other employers of the labeling systems used in the workplace
- Verify that each container of hazardous chemicals in the workplace is appropriately labeled.
- Verify that secondary containers in the shop are appropriately labeled
- Verify that secondary containers at jobsites are appropriately labeled
- Ensure that safety data sheets are available for all chemicals used at the workplace

EMPLOYEES

- Attend all training
- Know where Safety Data Sheets can be obtained
- Report containers with worn, torn, or missing labels to your foreman
- Read and understand all hazard warning labels

1.3 DEFINITIONS

A full list of definitions can be found at 29 CFR 1910.1200(c). Common terms used throughout this program include:

CHEMICAL - Any substance or mixture of substances

CLASSIFICATION - to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

CONTAINER - any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. Pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

EXPOSURE OR EXPOSED - an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

HAZARD CATEGORY - the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

HAZARD CLASS - the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

HAZARDOUS CHEMICAL - any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

PRODUCT IDENTIFIER - the name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

SUBSTANCE - chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

USE - to package, handle, react, emit, extract, generate as a byproduct, or transfer

1.4 HAZARD CLASSIFICATION

All chemicals must be classified by their hazards. Before distribution, chemical manufacturers and importers must:

- evaluate chemicals produced in their workplaces or imported by them in order to determine the hazard classes, and where appropriate, the category of each class that apply to the chemical being classified.
- identify and consider the full range of available scientific literature and other evidence concerning the potential hazards.
- consult Appendix A to §1910.1200 regarding classification of health hazards
- consult Appendix B to §1910.1200 regarding the classification of physical hazards
- follow the procedures in Appendices A and B to classify the hazards of the chemicals in mixtures

Penn Fencing may choose to classify chemicals based on the above criteria if the company chooses not to rely on the classification performed by the chemical manufacturer or importer. However, in most cases the manufacturer or importer's classification will be used.

1.5 SAFETY DATA SHEETS

Safety Data Sheets (SDS), formerly known as material safety data sheets, communicate information regarding the hazards of a particular chemical. SDSs are prepared by a chemical's manufacturer, importer, or distributor in accordance to OSHA's Hazcom standard.

Penn Fencing retains a copy of the SDS for each hazardous chemical used in the workplace. SDSs will be maintained in an organized fashion and will be readily accessible during each work shift to employees when in their work areas. A copy of the SDS log will be maintained in Warehouse 1 for all employees to view at will.

The SDS Program Coordinator will ensure that SDSs are received and appropriately filed in the Penn Fencing SDS log. In order to continually maintain the SDS log and list of hazardous chemicals, the following procedure will be used:

1. Appropriate safety data sheets will be distributed to Penn Fencing with or before the initial shipment of each chemical, and with the first shipment after an SDS is updated.
2. Upon receipt, the SDSs shall be reviewed for the following items before inserting it into the company's SDS log:
 - a. That the SDS is appropriately updated and current,
 - b. That the SDS appropriately describes and matches the chemical being used,
 - c. If there are any new or introduced hazards, and
 - d. The warning and caution sections have been modified.
3. If a chemical which does not have a current SDS on file is received, the SDS coordinator must:
 - a. Immediately contact the chemical manufacturer or distributor to request that the SDS be faxed or emailed to the SDS coordinator.

- b. If the manufacturer or distributor is unable to produce a SDS upon request, the Hazard Communication Officer should be notified immediately and the chemical is to be returned to the sender.
4. The SDS Coordinator will update the SDS log's table of contents and the Hazardous Chemical list (Attachment B) with the product identifier and manufacturer name.
5. If an updated SDS is received, the update should replace the obsolete SDS. Old SDSs must be retained in a separate file. Do not throw them away.

For each particular jobsite, the trucks will maintain the SDSs for chemicals/hazardous materials being used at that site.

An overview of the required sections and how to read an SDS can be found in section 2.1 of this program.

1.6 HAZARDOUS CHEMICAL LISTS

A list of all hazardous chemicals; whether solid, liquid, or gas; that are known to be present in the workplace is maintained in Attachment B of this document.

The list is organized by a product identifier for each chemical that is referenced on the appropriate safety data sheet. A duplicate list is to be kept in the front of each SDS book and may also be maintained electronically.

The SDS Coordinator is responsible for updating this list whenever any new chemicals are introduced to the workplace.

1.7 LABELING

Each container of a hazardous chemical that is used in or around the work area must be properly labeled, tagged, or marked with a product identifier; signal word; hazard statement(s); pictogram(s); precautionary statement(s); and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party. The labels must be prominently displayed, and in English, although other languages may also be included, if necessary.

Worn and torn labels must be replaced. It is the responsibility of employees to report inappropriate labels or the need to replace them to their foreman. Labels are not to be defaced or removed. If a label needs to be changed, please report it to Chad Galbreath. It is the ultimate responsibility of the Hazard Communication Officer to ensure that appropriate labels are in place and that replacement labels are available.

It is the responsibility of Chad Galbreath to verify that each container of hazardous chemicals in the workplace is appropriately labeled.

EXEMPTIONS

The following chemicals are exempt from the container labeling requirement:

- Hazards not otherwise classified
- The hazard label for solid materials may be transmitted to the customer at the time of initial shipment or with the SDS
- Portable secondary containers which will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

ALTERNATIVE LABELING SYSTEMS

For hazardous chemical containers that have no labels from the manufacturer (usually secondary containers that are used when contents from a manufacturer's container are poured into another container), Chad Galbreath will assure that labels that provide the required information are affixed to the container.

Alternative labeling systems such as the National Fire Protection Association (NFPA) 704 Hazard Rating and the Hazardous Material Information System (HMIS III) may be used to convey the hazards associated with chemicals in workplace containers. After June 1, 2016, the information supplied on these labels must be consistent with the revised HCS, e.g., no conflicting hazard warnings or pictograms. Information regarding the HMIS III and NFPA 704 rating systems can be found in Section 2.3.

In lieu of labeling, Penn Fencing may choose to convey all hazards associated with chemicals in stationary process containers to employees through the use of signs, placards, process sheets, batch tickets, operating procedures, as long as the alternative method identifies the containers to which it is applicable and conveys the information required to be on a label. If written materials are used, they will be readily accessible to the employees in their work areas throughout each shift.

1.8 NON-ROUTINE TASKS & UNLABELED PIPES

Employees must be informed of the hazards of non-routine tasks. Before any non-routine task is performed, employees must contact the Hazard Communication Officer to be advised of any special precautions to follow. The Hazard Communication Officer will provide the following information about the activity as it relates to the specific chemicals expected to be encountered:

- Specific chemical name(s) and hazard(s);
- Personal protective equipment required and safety measures to be taken;
- Measures that have been taken to lessen the hazards including ventilation, respirators, presence of other employees(s); and
- Emergency procedures.

In addition, any other personnel who could be exposed as a result of this work will be informed so that appropriate safety measures can be taken.

There are zero non-routine tasks known to exist at Penn Fencing's workplace.

Employees will be informed about the hazards associated with chemicals transferred through unlabeled pipes in the work area by the Hazard Communication Officer and/or foremen.

1.9 MULTI-EMPLOYER WORKSITES

Before performing any work at Penn Fencing, Chad Galbreath will ensure that all temporary workers, subcontractors, and/or any employees of other employers who may be exposed to hazardous chemicals are provided with the following information:

- Location of onsite SDS for each hazardous chemical that they may be exposed to while working
- Precautionary measures that need to be taken to protect employees during normal operating conditions in foreseeable emergencies
- The labeling system used in the workplace
- Procedures to follow if they are exposed.

In addition, Penn Fencing should contact each contractor or sub-contractor before work is started to gather and disseminate any information concerning chemical hazards the sub-contractor is bringing into the workplace, and vice versa.

1.10 PROGRAM MAINTENANCE & COMPLIANCE

The Hazard Communication Officer will review and update this hazard communication program as necessary and at the following instances:

- Whenever there is a change in personnel affecting this program
- Whenever there is a change in process that involves a change in, or addition of a non-routine task
- Whenever a deficiency in a current process is noted

Any direct or intentional violation or non-compliance with this program may result in the termination of the person or persons involved, in accordance with company policy.

1.11 TRAINING

All employees will be provided with effective information and training on hazardous chemicals in their work area upon initial assignment and whenever a new chemical hazard is introduced into the work area. Employees shall be informed of:

- The requirements of OSHA's Hazard Communication Standard
- Any operations in the employees' work areas where hazardous chemicals are present
- The location and availability of this written Hazard Communication program, hazardous chemical lists, and safety data sheets

Annual refresher training will be conducted by a qualified representative designated by Penn Fencing. Training shall consist of the following components, at minimum:

- Methods and observations that may be used to detect the presence of release of a hazardous chemical in the work area,
- The physical, health, simple asphyxiation, combustible dust, and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area,
- Measures employees can take to protect themselves from these hazards, including specific procedures to protect employees from exposure to hazardous chemicals (work practices, emergency procedures, and personal protective equipment to be used), and
- The details of this Hazard Communication program
- An explanation of the labels received on shipped containers and the workplace labeling system used by Penn Fencing
- Safety Data Sheets, including the order of information and how employees can obtain and use the appropriate hazard information

Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals.

HAZARDOUS CHEMICAL AWARENESS

HAZARDOUS CHEMICAL AWARENESS

2.1 SECTIONS OF AN SDS

The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format. This provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well). In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in Appendix D of 29 CFR 1910.1200. The SDS preparers may also include additional information in various section(s).

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., fire fighting). This information should be helpful to those that need to get the information quickly. Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

A description of all 16 sections of the SDS, along with their contents, is presented below:

SDS Section 1: Identification

This section identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).¹

SDS Section 2: Hazard(s) Identification

This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category1).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.
- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

SDS Section 3: Composition/Information on Ingredients

This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

SUBSTANCES

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

MIXTURES

- Same information required for substances.
- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
 - Present above their cut-off/concentration limits or
 - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
 - A trade secret claim is made,
 - There is batch-to-batch variation, or
 - The SDS is used for a group of substantially similar mixtures.

CHEMICALS WHERE A TRADE SECRET IS CLAIMED

- A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

SDS Section 4: First-Aid Measures

This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

SDS Section 5: Fire-Fighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective equipment or precautions for firefighters.

SDS Section 6: Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up)

SDS Section 7: Handling and Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements)

SDS Section 8: Exposure Controls/Personal Protection

This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).
- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

SDS Section 9: Physical and Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture.

The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Upper/lower flammability or explosive limits;
- Odor;
- Vapor pressure;
- Odor threshold;
- Vapor density;
- pH;
- Relative density;
- Melting point/freezing point;
- Solubility(ies);
- Initial boiling point and boiling range;
- Flash point;
- Evaporation rate;
- Flammability (solid, gas);
- Partition coefficient: n-octanol/water;
- Auto-ignition temperature;
- Decomposition temperature; and
- Viscosity.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property. Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential

SDS Section 10: Stability and Reactivity

This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other. The required information consists of:

REACTIVITY

- Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

CHEMICAL STABILITY

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

OTHER

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations, or environmental conditions that may lead to hazardous conditions).
- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

SDS Section 11: Toxicological Information

This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA

SDS Section 12: Ecological Information (non-mandatory)

This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment. The information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
- Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient (K_{ow}) and the bioconcentration factor (BCF), where available.
- The potential for a substance to move from the soil to the groundwater (indicate results from adsorption studies or leaching studies).
- Other adverse effects (e.g., environmental fate, ozone layer depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and/or global warming potential).

SDS Section 13: Disposal Considerations (non-mandatory)

This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. To minimize exposure, this section should also refer the reader to Section 8 (Exposure Controls/Personal Protection) of the SDS. The information may include:

- Description of appropriate disposal containers to use.
- Recommendations of appropriate disposal methods to employ.
- Description of the physical and chemical properties that may affect disposal activities.
- Language discouraging sewage disposal.
- Any special precautions for landfills or incineration activities.

SDS Section 14: Transport Information (non-mandatory)

This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea. The information may include:

- UN number (i.e., four-figure identification number of the substance).
- UN proper shipping name.
- Transport hazard class(es).
- Packing group number, if applicable, based on the degree of hazard.
- Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)).
- Guidance on transport in bulk (according to Annex II of MARPOL 73/78 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code))).
- Any special precautions which an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises (indicate when information is not available).

SDS Section 15: Regulatory Information (non-mandatory)

This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS. The information may include:

- Any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, Department of Transportation, Environmental Protection Agency, or Consumer Product Safety Commission regulations)

SDS Section 16: Other Information

This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

2.2 CHEMICAL LABELING

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown below. Supplemental information can also be provided on the label as needed.

SAMPLE LABEL	
<p style="text-align: center;">PRODUCT IDENTIFIER</p> <p>CODE _____ Product Name _____</p> <p style="text-align: center;">SUPPLIER IDENTIFICATION</p> <p>Company Name _____ Street Address _____ City _____ State _____ Postal Code _____ Country _____ Emergency Phone Number _____</p> <p style="text-align: center;">PRECAUTIONARY STATEMENTS</p> <p>Keep container tightly closed. Store in cool, well ventilated place that is locked. Keep away from heat/sparks/open flame. No smoking. Only use non-sparking tools. Use explosion-proof electrical equipment. Take precautionary measure against static discharge. Ground and bond container and receiving equipment. Do not breathe vapors. Wear Protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified.</p> <p>In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO₂) fire extinguisher to extinguish.</p> <p>First Aid If exposed call Poison Center. If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.</p>	<p style="text-align: center;">HAZARD PICTOGRAMS</p> <p style="text-align: center;"></p> <p style="text-align: center;">SIGNAL WORD Danger</p> <p style="text-align: center;">HAZARD STATEMENT Highly flammable liquid and vapor. May cause liver and kidney damage.</p> <p style="text-align: center;">SUPPLEMENTAL INFORMATION</p> <p>Directions for use _____ _____ _____</p> <p>Fill weight: _____ Lot Number _____ Gross weight: _____ Fill Date: _____ Expiration Date: _____</p>

PICTOGRAMS & HAZARDS

<p>HEALTH HAZARD</p>  <ul style="list-style-type: none"> ▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity 	<p>FLAME</p>  <ul style="list-style-type: none"> ▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides 	<p>EXCLAMATION MARK</p>  <ul style="list-style-type: none"> ▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
<p>GAS CYLINDER</p>  <ul style="list-style-type: none"> ▪ Gases Under Pressure 	<p>CORROSION</p>  <ul style="list-style-type: none"> ▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals 	<p>EXPLODING BOMB</p>  <ul style="list-style-type: none"> ▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
<p>FLAME OVER CIRCLE</p>  <ul style="list-style-type: none"> ▪ Oxidizers 	<p>ENVIRONMENT (Non-Mandatory)</p>  <ul style="list-style-type: none"> ▪ Aquatic Toxicity 	<p>SKULL & CROSSBONES</p>  <ul style="list-style-type: none"> ▪ Acute Toxicity (fatal or toxic)

2.3 HAZARDOUS MATERIAL IDENTIFICATION SYSTEM LABELING SYSTEM

The Hazardous Material Identification System (HMIS III) provides a format for hazard determinations, complies with the OSHA Hazard Communication Standard, and simplifies the employee training and information process. This system was developed by the paint manufacturers (National Paint and Coatings Association) to address situations more common to their environment than those encountered by firefighters.

The HMIS provides clear, recognizable information to employees by standardizing the presentation of chemical information. This is accomplished by using color codes corresponding to the hazards of a product, assigning numeric ratings to indicate the degree of severity of health effects, flammability, and stability/reactivity hazards, along with providing alphabetical codes to designate appropriate personal protective equipment (PPE) employees should use while handling the material.

Hazard severity is indicated by a numerical rating that ranges from zero (0), indicating a minimal hazard, to four (4), indicating a severe hazard. The information is arranged using a color bar system as follows. A blue bar at the top provides health information, a red bar at second from the top indicates flammability, a yellow or orange bar second from the bottom physical properties or instability/reactivity, and a white bar at the bottom addresses personal protective equipment.

With this system, the white section is used to indicate what level of protective equipment is required. Instead of a hazard ranking, a level of protection is indicated by a letter, with each letter specifying a different level of protection. A wide variety of icons include the physical hazards, target organs, as well as the continued use of icons for PPE.

As of June 1, 2016, all alternative labeling must have been updated to the Hazard Communication standard.

HMIS LABEL & KEY



HMIS Label - Health

The health section conveys the health hazards of the material. In the latest version of the HMIS label, the blue health bar has two spaces, one for an asterisk and one for a numeric rating.

If present the asterisk signifies a chronic health hazard, meaning that long term exposure to the material could cause a health problem such as emphysema or kidney damage.

The numeric ratings for the HMIS system are as follows.

- 4** - Life Threatening – Major or permanent damage may result from single or repeated overexposures.
- 3** - Major injury likely unless prompt action is taken and medical treatment is given.
- 2** - Temporary or minor injury may occur.
- 1** - Irritation or minor reversible injury may occur.
- 0** - No significant risk to health.

HMIS Label - Flammability

OSHA defines a flammable liquid as "any liquid having a flash point below 100 degrees F. (37.8 degrees C.), except any mixture having components with flash points of 100 degrees F. (37.8 degrees C.) or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids shall be known as Class I liquids." A flammable material can be a solid, liquid or gas.

The numeric ratings for the HMIS system are as follows.

- 4** - Flammable gases or very volatile flammable liquids with flash points below 73°F, and boiling points below 100°F. Materials may ignite spontaneously with air. (Class IA).
- 3** - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73°F and boiling points above 100°F, as well as liquids with flash points between 73° F and 100° F. (Classes IB & IC).
- 2** - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100°F but below 200°F. (Classes II & IIIA).
- 1** - Materials that must be preheated before ignition will occur. Includes liquids, solids, and semi-solids having a flash point above 200°F. (Class IIIB).
- 0** - Materials that will not burn.

HMIS Label - Physical Hazard (HMIS® III)

These hazards are assessed using the OSHA criterion of physical hazard. Seven such hazard classes are recognized:

- Water Reactive
- Explosives
- Pyrophoric materials
- Oxidizers
- Organic Peroxides
- Compressed gases
- Unstable Reactives

The numeric ratings for the HMIS system are as follows.

- 4** - Materials which are readily capable of explosive water reaction, detonation or explosive decomposition, polymerization, or self-reaction at normal temperature and pressure.
- 3** - Materials that may form explosive mixtures with water and are capable of detonation or explosive reaction in the presence of a strong initiating source. Materials may polymerize, decompose, self-react, or undergo other chemical change at normal temperature and pressure with moderate risk of explosion.
- 2** - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.
- 1** - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.
- 0** - Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

HMIS Label - Reactivity or Stability (HMIS 1 & 2 - Now Obsolete)

"Reactive or Unstable" means a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature. The numeric ratings for the HMIS system are as follows.

- 4** - Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperatures and pressures. This degree should include materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.
- 3** - Materials which in themselves are capable of detonation or of explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This degree should include materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without requiring heat or confinement.
- 2** - Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This degree should include materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. It should also include those materials which may react violently with water or which may form potentially explosive mixtures with water.
- 1** - Materials which in themselves are normally stable, but which can become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently.
- 0** - Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

HMIS Label – Personal Protection

A	=	Safety glasses
B	=	Safety glasses, gloves
C	=	Safety glasses, gloves, chemical apron
D	=	Face shield, gloves, chemical apron
E	=	Safety glasses, gloves, dust respirator
F	=	Safety glasses, gloves, chemical apron, dust respirator
G	=	Safety glasses, gloves, vapor respirator
H	=	Splash goggles, gloves, chemical apron, vapor respirator
I	=	Safety glasses, gloves, dust and vapor respirator
J	=	Splash goggles, gloves, chemical apron, dust and vapor respirator
K	=	Air line hood or mask, gloves, full chemical suit, boots
X	=	Ask foreman

Note: before using any respirator contact EH&S for assistance.

2.4 NFPA 704

The NFPA has a hazard identification marking system that it developed in 1961. The system was intended to provide basic information to emergency personnel so they can evaluate what firefighting techniques to employ when they enter a facility where hazardous materials are present. The system does not provide any detailed hazard information, but it is acceptable as an in-plant labeling system as long as training regarding the system is provided. Also, the safety data sheets (SDSs) must be available to provide the required detailed chemical hazard information.

The NFPA system identifies hazards by categorizing them by Health, Flammability, and Instability. Five divisions ranging from 0 – no hazard, to 4 – severe hazard, indicate the degree of severity for each hazard numerically.

The square-on-point label contains four colored squares with a number appearing in each square. The blue square indicates health hazard, the red square represents flammability, and the yellow square indicates instability. The fourth square represents a special hazard, such as unusual reactivity with water. The usual symbol for alerting firefighting personnel to the possible hazard of using water is the letter W with a line through it.

NFPA 704 LABEL

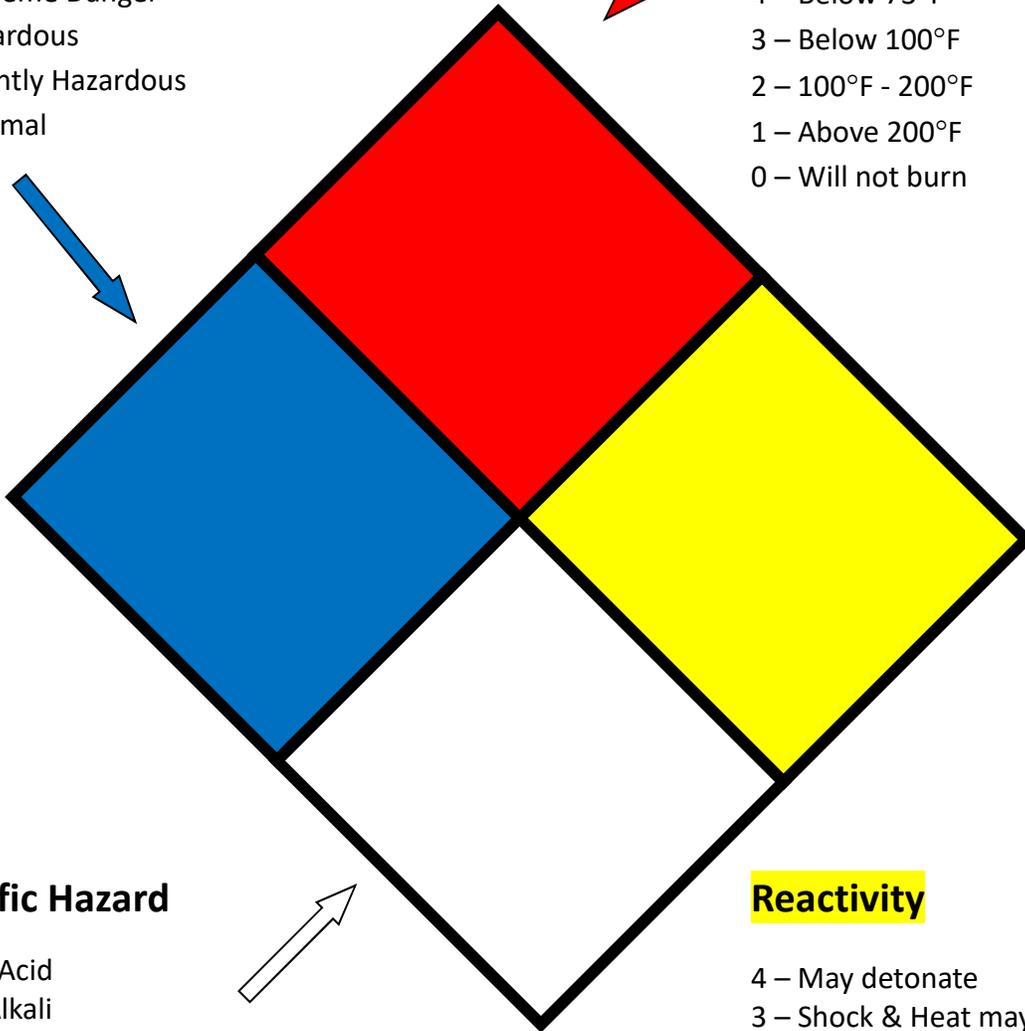
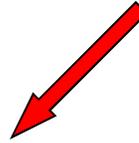
Health Hazard

- 4 – Deadly
- 3 – Extreme Danger
- 2 – Hazardous
- 1 – Slightly Hazardous
- 0 – Normal



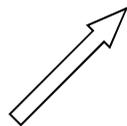
Fire Hazard

- Flash Points
- 4 – Below 73°F
 - 3 – Below 100°F
 - 2 – 100°F - 200°F
 - 1 – Above 200°F
 - 0 – Will not burn



Specific Hazard

- ACID – Acid
- ALK – Alkali
- COR – Corrosive
- OXY – Oxidizer
- ☢ – Radioactive
- W – Use no Water



Reactivity

- 4 – May detonate
- 3 – Shock & Heat may detonate
- 2 – Violent Chemical change
- 1 – Unstable if heated
- 0 – Stable

2.5 CRYSTALLINE SILICA

Silica is a term which refers broadly to the mineral compound silicon dioxide (SiO₂) and can be in the form of crystalline silica or amorphous silica. Crystalline silica is significantly more hazardous to employees than amorphous silica, and the term “silica” refers specifically to crystalline silica.

Crystalline silica is the basic component of sand, quartz, and granite rock. In addition to causing the disabling and irreversible lung disease known as silicosis, crystalline silica has been classified as a human carcinogen by the International Agency for Research on Cancer (IARC). Crystalline silica is an important industrial material and occupational exposure occurs across a broad range of industries.

More than two million U.S. workers are exposed to crystalline silica. OSHA estimates that more than 840,000 of these workers are exposed to silica levels that exceed the new permissible exposure limit (PEL). Processes associated historically with high rates of silicosis include sandblasting, sand-casting foundry operations, mining, tunneling, and granite cutting. Workers may be exposed to crystalline silica in a variety of industries, including, but not limited to: construction, mining, foundry work, stone cutting, ceramics or pottery work, glass manufacturing, shipyards, or manufacturing.

At this time, Penn Fencing has no regular exposure to respirable crystalline silica nor do we anticipate that to change. This program was created and implemented to protect our workers against secondary exposure and the minimal potential for any added job tasks in the future that could bring exposure to respirable crystalline silica.

In the event that a task is added or changed in which exposure to respirable crystalline silica becomes a potential, supplemental training and administrative, engineering and personal protective equipment controls will be implemented to comply with OSHA’s Crystalline Silica standard.

Health Effects

Occupational exposure to crystalline silica dust has long been known to produce pulmonary silicosis, a disabling, nonreversible, incurable lung disease caused by the inhalation of respirable crystalline silica particles. Additionally, there is evidence that exposure to crystalline silica-containing dusts causes or is associated with the following conditions: lung cancer, tuberculosis, chronic obstructive pulmonary disease (including emphysema and bronchitis), autoimmune diseases or immunologic disorders, chronic renal disease, and subclinical renal changes. Smoking adds to the damage. Silicosis was considered to be the most serious occupational hazard during the 1930’s when federal, state, and professional efforts started to focus attention on prevention strategies.

Once the microscopic particles are deposited in the lungs, they cause tissue damage and lead to the formation of fibrosis (scar tissue). This scarring decreases the lungs' ability to extract oxygen from the air. Smoking adds to the damage. There are three types of silicosis:

- **Chronic silicosis:** Usually occurs after 10 or more years of exposure to crystalline silica at low levels. This is the most common type of silicosis. Symptoms may not appear in the early stages of chronic silicosis. In fact, chronic silicosis may go undetected for 15 to 20 years after exposure. Eventually, silicosis can result in respiratory failure and death.
- **Accelerated silicosis:** Results from exposure to higher levels of crystalline silica and occurs 5 to 10 years after exposure. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in chronic silicosis.
- **Acute silicosis:** Can occur after only weeks or months of exposure to very high levels of crystalline silica. Death occurs within months. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Acute silicosis may develop after short periods of overexposure

As silicosis progresses, symptoms may include: shortness of breath, severe cough, weakness, occasional bluish skin at the ear lobes or lips, fatigue, or loss of appetite. Due to the presence of silica in the lungs, the body's ability to fight infections may be weakened and other illnesses (such as tuberculosis) may result and can cause fever, weight loss, night sweats, chest pains, or respiratory failure. These symptoms can become worse over time, leading to death.

General Requirements

Penn Fencing has made a commitment to prevent silicosis at the worksite by taking the necessary steps to reduce employee exposure. It is our goal to comply with OSHA's Crystalline Silica standard, 29 CFR 1926.1153, and to ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of OSHA's permissible exposure limit (PEL) of 50 µg/m³ calculated as an 8-hour TWA.

This plan will be available for examination and copying, upon request, to each employee covered by 29 CFR 1926.1153, their designated representatives, the Assistant Secretary and the Director. The plan will be reviewed and evaluated for effectiveness at least annually and updated as necessary.

Control Methods

In order to reduce our workers' exposure to silica, tools will be operated and maintained in accordance with the manufacturer's instructions in order to minimize dust emissions. The following tasks involve exposure to respirable crystalline silica. Penn Fencing plans to utilize the control methods outlined below in order to reduce exposure:

- **Walk-behind saws** – Integrated water delivery systems with continuously fed water to the blades. Respiratory protection with an APF 10 is required when used indoors, in an enclosed area, or outdoors for more than 4 hours.
- **Handheld and stand-mounted drills (including impact and rotary hammer drills)** – A commercially available shroud or cowling with dust collection system that provides the air flow recommended by the tool manufacture, or greater, and having a filter with 99% or greater efficiency and filter-cleaning mechanism. A HEPA filtered vacuum will be used when cleaning holes.

- **Jackhammers and handheld powered chipping tools** - Water delivery system with continuously stream or spray at the point of impact. Respiratory protection with an APF 10 is required when used indoors, in an enclosed area, or outdoors for more than 4 hours. OR a tool equipped with a shroud and dust collection system will be used along with a filter with 99% or greater efficiency and a filter cleaning mechanism. Respiratory protection with an APF 10 is required when used indoors, in an enclosed area, or outdoors for more than 4 hours.

When control methods are not feasible or practical, Penn Fencing will conduct an exposure assessment for each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level of 25 in accordance with OSHA's prescribed methods, detailed at 29 CFR 1926.1153(d).

When it is not feasible to fully and properly comply with the engineering controls, work practice controls, and respiratory protection described in OSHA's exposure Methods table outlined in 29 CFR 1926.1153(c)(1), the following measures will be implemented:

- Ensure that no employee is exposed to an airborne concentration of respirable silica in excess of 50 µg/m³ (micrograms of silica per cubic meter of air), calculated as an 8-hour TWA
- Assess the exposure of each employee who is or may be expected to be exposed to respirable silica at or above the action level of 25 µg/m³
- Use engineering and work practice controls to reduce and maintain employee exposure to respirable silica to or below the PEL, unless such controls are not feasible.
- Reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection.

Housekeeping

Housekeeping practices that have the potential to expose workers to silica such as dry sweeping, dry brushing and use of compressed air on surfaces that could contribute to employee exposure of respirable silica shall be replaced with methods that minimize the likelihood of exposure where feasible. Some alternative measures consist of wet sweeping HEPA-filtered vacuuming and ventilation systems that effectively capture the dust clouds.

Access

Access to worksites will be restricted when deemed a necessary precaution in order to minimize the number of employees exposed to respirable crystalline silica through exposures generated by Penn Fencing or other employers or personnel. Access will be restricted through the use of signage, barricades, structural barriers such as walls, or other means determined by the jobsite supervisor.

The regulated work area will be limited to access by authorized persons, their representatives designated to conduct monitoring or observation, or any person authorized by OSHA. Signs will be posted at all entrances that read:

DANGER
RESPIRABLE CRYSTALLINE SILICA
MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS
WEAR RESPIRATORY PROTECTION IN THIS AREA
AUTHORIZED PERSONNEL ONLY

Medical Surveillance

If employees will be required to use a respirator for 30 or more days per year due to silica exposure as outlined in 29 CFR 1926.1153, medical surveillance will be offered at no cost to the employee.

Penn Fencing will ensure that medical surveillance complies with the following:

- All medical examinations and procedures required are performed by a PLHCP
- An initial (baseline) medical examination is made available within 30 days of initial assignment unless the employee has received a medical examination in the last three years that meet OSHA's exam requirements.
- Medical examinations shall be available at least every three years.

Exams will include at least the following items:

- A medical & occupational history to collect data on worker exposure
- Physical examination with special emphasis on the respiratory system
- Chest X-rays
- Pulmonary function testing
- Testing for latent tuberculosis

A form that may be used to document if an employee declines participation in the medical surveillance program is located at the end of this section.

Worker Responsibilities

Signs warning workers of hazardous work areas will be posted. These signs will contain the hazards and specify any personal protective equipment that is required. Workers are responsible for the following:

- Using engineering controls properly
- following safe work practices
- Participating in air monitoring and training programs
- Using the appropriate type of respirator when necessary
- Washing hands and face before eating, drinking, etc.
- Eating, drinking, etc. Only in areas where there is no crystalline silica dust;

- If possible, wearing disposable or washable work clothes and change into clean clothing before leaving the worksite.

Training

Workers will be trained about the jobs that present a silica hazard, crystalline silica's health effects, engineering and work practice controls to reduce exposures, the importance of maintenance and good housekeeping, the proper type and fitting of respirators (according to the facility's written respiratory protection program), Hazcom, and the proper use and care of personal protective equipment at least annually.

Employees required to handle or use poisons, caustics, and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene, and personal measures required.

Training for employees who operate sandblasting, abrasive blasting, and hydroblasting equipment; and employees who work in close proximity to these operations will be trained before performing these operations, and at least annually.

Medical Surveillance Declination

I understand that due to my occupational exposure to respirable crystalline silica, I am at risk of developing silicosis or other silica-related disease. I understand that medical surveillance and screening allow for early identification of exposure-related health effects, so that actions to avoid further exposure and prevent or address adverse health outcomes can be taken. I understand that silica-related diseases can be fatal, encompass a variety of target organs, and may have public health consequences when considering the increased risk of a latent tuberculosis (TB) infection becoming active.

I have been given the opportunity to participate in a medical surveillance program, at no charge to me. However, I decline the offer to participate in a medical surveillance program at this time.

_____ Employee Name (Print)	_____ Signature	_____ Date
_____ Supervisor Name (Print)	_____ Signature	_____ Date

ATTACHMENT A: OSHA STANDARDS:

Hazard Communication

- 29 CFR 1910.1200
- 29 CFR 1926.59

Silica

- 29 CFR 1910.1053
- 29 CFR 1926.1153

ATTACHMENT B: HAZARDOUS CHEMICALS LIST

ATTACHMENT C: TRAINING DOCUMENTATION

OSHA's Employee Responsibilities

- Read the OSHA Poster at the workplace.
- Comply with all applicable OSHA standards.
- Follow all lawful employer safety and health rules and regulations and wear or use prescribed protective equipment while working.
- Report hazardous conditions to the supervisor.
- Report any work-related injury or illness to the employer, and seek treatment promptly.
- Exercise rights under the Act in a responsible manner.

New Hire Training Summary:

The following items must be reviewed with employees upon initial assignment and whenever new chemicals are introduced into the work environment:

- Information on hazardous chemicals in the employee's work area.
- The requirements of the OSHA Hazard Communication Standard.
- Operations in the employee's work area where hazardous chemicals are present.
- The location and availability of this written hazard communication program, including the hazardous chemical list (Attachment B), and safety data sheets (SDS).
- Review one or more SDSs for chemicals used in the employee's work area to review the hazards associated with chemicals in the work area.
- 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 measures employees can take to protect themselves from these hazards, including specific procedures that have been implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used
- The details of this hazard communication program, including an explanation of the labels received on shipped containers and the workplace labeling system used in the workplace; the safety data sheet, including the order of information and how employees can obtain and use the appropriate hazard information.

Upon completing the review of the above information, have new employees sign the new hire training log on the following page.

