

# Hazard Communication with Global Harmonization System Best Practices



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## Introduction

Hazardous chemicals and materials are part of our everyday work environment. Used correctly, hazardous chemicals are an important part of the work we do. Often we do not give these chemicals a second thought until there is an accident. Hazardous chemicals can pose many hazards that include flammability, reactivity, corrosiveness, and toxicity. When employees know what chemicals are being used, how to use them safely, and what to do in the event of an emergency, the workplace is much safer. The key is to have a system in place that advises everyone about precautions needed to avoid accidents. Clear and well-planned communication is essential and required by OSHA regulations. Effective May 25th, 2012 the Occupational Safety Health Administration (OSHA) incorporated the Global Harmonization System (GHS) into the CFR1910.1200 “Right to Know” Hazard Communication Standard to assist in providing a safer workplace for employees.

The GHS provides standardized:

- 16 Section Safety Data Sheet or SDS (Formerly known as Material Safety Data Sheets)
- 2 new Signal Words
- 9 Pictograms
- Standardized container label
- Hazard Classifications for Physical, Health and Environmental
- New Hazard Classification Rating System

**According to OSHA, “the standard that gave the workers the right to know, now gives them the right to understand. In order to ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers.”**

## Scope

This information was prepared to assist you in developing your Hazard Communication Program with the GHS components. To be effective this must relate to **your operations and your employee exposures**. Hazardous chemicals and materials include those that are flammable, corrosive, reactive, toxic or explosive and/or may present physical, health or environmental hazard. You must consider all possible routes of entry into the body including inhalation, ingestion, absorption through the skin, and injection. You should also consider the hazards associated with toxic gas reactions from any chemicals being mixed. The Hazard Communication Program should not be confused with a Chemical Hygiene Plan or Hazardous Material Containment and Clean-up Operational Plan. These are associated with chemical laboratories and highly trained first responder and are different and distinct programs.

## Hazardous Chemicals by Department

Chemicals or materials containing hazardous chemicals are found in many municipal departments, schools, and utilities. Because chemicals are so common in the workplace, some departments may think they have no exposure and do not fall within the requirements of the OSHA standard. Listed below are some examples by municipal department of materials that will meet the “hazardous” definition.

- **Administrative** – Custodial cleaning and disinfecting supplies, and fire extinguishing agents.
- **Public Works** – Lubricants, fuels, solvents, grinding wheel dust, welding byproduct fumes, oxygen and acetylene gas cylinders, paints, pressure treated wood products, and custodial supplies.
- **Law Enforcement** – Firearms cleaning solvents, lubricants, pepper spray, lab chemicals, and custodial supplies.
- **Fire Departments** – Fuels, chemical firefighting foams, fire extinguisher agents, hydraulic fluids, and custodial supplies.
- **Rescue Personnel** – Disinfecting products, lubricants, and oxygen tanks.
- **Educational Facilities** – Toner, ink cartridges, solvents, motor oils and lubricants, cleaning supplies, paints, glues, byproducts from machine shop and industrial arts classes, welding fumes, and chemicals used in the chemistry labs.
- **Water and Pollution Control Facilities** – Process chemicals such as lime, polymers, chlorine, fuels, lubricants and chemicals used in the lab.
- **Parks & Recreation** – Fuels, fertilizers, weed killers, lime, and pool supplies.

## Hazard Communication Program Overview

OSHA Standard 29 CFR 1910.1200, which has been adopted by Maine Department of Labor and is applicable to municipalities and quasi-municipal entities, requires the development of a written Hazard Communication Program, which must include the following elements:

- A list of all hazardous chemicals and materials used in the workplace – A documented and dated review of the list should be conducted at least annually.
- Locations of hazardous material and chemical storage or bulk chemical storage areas.
- The procedures used to collect and maintain SDS ([Safety Data Sheets](#)).
- Location of SDS (Safety Data Sheets) in each facility.
- A description of the labeling system used for secondary containers, process containers, or bulk storage areas.
- The procedures used to ensure that all containers and process piping are properly labeled.
- Information on the GHS – 16 section SDSs (Safety Data Sheets).
- Information on the 9 Pictograms required by the GHS.
- Signal Words “Warning” or “Danger”.
- Information of the standardized shipping labels required by the GHS.

- Employee training, frequency, and documentation.
- Procedures for safely conducting non-standard work practices.
- Procedures for ensuring contractors and other non-employees are informed of the hazardous chemicals and materials in the workplace.

**NOTE:** Changes have been made to the required Program, consistent with the adoption of the United Nations GHS. Please refer to the following OSHA link: <https://www.osha.gov/dsg/hazcom/side-by-side.html> for a side-by-side comparison of the changes.

## Steps to Develop Your Program

### Responsibility

Designate a Hazard Communication Program Coordinator. This responsible party ensures that:

- A. The program is being implemented properly.
- B. The program is maintained and updated as processes and chemicals are changed.
- C. Training is provided to employees at time of hire, when new chemicals are introduced, and refresher training is done as required or needed. (The training program can be coordinated by an individual or a safety sub-committee.)

### Inventory Your Hazardous Chemicals and Materials

Identify the hazardous materials and chemicals used in your workplace. Product labels and Safety Data Sheets are important sources of this information. One way to do this is to complete a hazardous material and chemical inventory, which lists all chemicals and products used in all areas of the workplace. Include all departments. Implement a procedure to account for new purchases and remove any chemicals that have been disposed. ([Attachment A provides an example](#))

## Labeling

**This paragraph was extensively re-written in the GHS 2012.** While the old version had a simple performance-oriented approach to labels, the new GHS rule sets forth detailed and specific provisions for labeling. Also a new mandatory labeling system is required and details specific information to be provided for each hazard class and category once a chemical is classified. ([Attachment B](#))

Chemical manufacturers and importers must provide a label that includes:

- Product identifier.
- Supplier information which is to include name, address and phone number of manufacturer, importer or distributor.
- Signal word, pictogram, and hazard statement for each hazard class and category.

- Precautionary statements.

**\*NOTE:** *The old version did not require the use of pictograms, specific signal words, or precautionary statements.*

**Relevant OSHA Standards. See 29CFR1910.1200 for detail:**

**(f)(7)** The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by paragraph (f)(6) of this section to be on a label. The employer shall ensure the written materials are readily accessible to the employees in their work area throughout each work shift.

**(f)(8)** The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

**(f)(9)** The employer shall not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

**(f)(10)** The employer shall ensure that workplace labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.

## Labeling Secondary Containers

The contents of the original container are frequently transferred to secondary containers. Secondary containers could be beakers, bottles, buckets, spray bottles or other temporary containers used in the course of operations. When a secondary container is used for longer than one shift or does not meet the requirements outlined in the Permanent Container Labels section, above, a label needs to be applied to the secondary container.

### **Requirements:**

- Chemical Name
- Hazard Statement
- Signal Word
- Pictogram
- Manufacturer information

The GHS label or label elements can also be used for workplace bulk containers (e.g., storage tanks). Label information could be displayed in the work area, rather than on the individual containers. Some examples of workplace situations where chemicals may be transferred from supplier containers include: storage vessels, piping or

process reaction systems or temporary containers where the chemical will be used by one worker within a short timeframe. (Immediate Use)

OSHA does permit use of alternative labeling systems for bulk storage as long as the format is appropriate to the workplace and communicates the information as effectively as the GHS label. (Such as using HMIS or NFPA labeling systems) ([See Attachment I & J for examples](#)).

***However the use of different labeling systems can lead to confusion and should be avoided. Consistent use of the current OSHA Global Harmonization System throughout the organization is strongly encouraged.***

## Safety Data Sheets

Safety Data Sheets (SDS) must be supplied or made available for access by manufacturers and distributors for all hazardous materials prior to or no later than June 1st, 2015. As each SDS comes into the workplace:

- Check to see that all required information is present.
- Review all sections and make sure you are conducting your operations with the chemical in a proper manner.
- Obtain the SDS before the material is received at your workplace. This allows time for the SDS to be reviewed, employees informed of hazards, trained on any personal protective equipment required and trained on proper use of the chemical or material.
- Ensure that you are capable of properly handling and storing the material.
- SDSs should be maintained in a master binder at a central location or a master electronic file.
- Individual site locations should maintain a binder or electronic database containing all SDSs used at that location.

***Electronic versions of Safety Data Sheets may be maintained if all of the following criteria are met:***

- The employee has unrestricted access to the computer(s) or device(s) containing the files and they are in close proximity of their worksite.
- The files cannot be on a computer or device that is password protected if the employee is unaware of the password.
- The files should be stored on the computer's local drive so they can be accessed even in the event of a network or internet connection failure.
- A battery backup or auxiliary power source should be provided for the computer or device storing the SDS information.

A Sample Safety Data Sheet may be viewed in ([Attachment C](#)).



It will be helpful to make a list all of your hazardous materials in a spreadsheet. This list will help you check that you have a new SDS sheet for all of your hazardous materials.

*NOTE: Not all manufacturers have converted to the GHS system and some have only partially converted. The Maine Department of Labor has requested employers track their efforts to contact manufacturers for update GHS information.*

## **Develop a Written Hazard Communication Program.**

The most important part of any hazard communication effort is the development of a written program. It helps ensure that employees know the hazards of the materials used, how to avoid health, environmental and physical hazards, and know the procedure to follow in collecting and distributing hazardous material information. ([Attachment D](#))

## **Training Requirements**

### **Provide Training**

Training is the best way to make sure that all employees understand your Hazard Communication Program. The training should inform employees about the OSHA Standard with the new GHS incorporated updates.

Training should include:

- Review contents of each 16 section SDS format. ([Attachment E](#)) - The type and location of hazardous materials in the workplace.
- GHS Hazard Classification Types and Rating Systems. ([Attachment F](#))
- A review NFPA and HMIS Rating Systems for Secondary Container labeling.
- A review of the 9 Pictograms and meanings. ([Attachment G](#)) - Health, Physical and Environmental hazards.
- All safety and emergency procedures associated with use and storage of hazardous chemicals or materials.

Training should occur at time of hire for new employees, when new hazardous chemicals or materials are introduced into the workplace, when process changes create a new hazard, or when the employer has a reason to believe that employees do not understand the program.

### **Training Should Cover the Following Points:**

- Requirements of the OSHA standard.
- Information on any operations in the area where hazardous chemicals or materials are present.
- Procedures for detecting and identifying hazardous materials or chemicals.
- Safe handling procedures.





- Storage procedures.
- Emergency Response procedures.
- The use of labels, pictograms, signal words and SDS (in GHS Format).
- How employees can access SDS files.
- How to interpret and understand SDS information.
- Your written hazard communication program.
- Non-routine tasks involving hazardous materials.
- Communication with contractors regarding hazardous materials in their area of operations or any hazardous material the contractor may bring on site.

## Program Management

### Communicate to Management

A successful program means that all levels of management are involved. Make sure that all levels within your organization are aware of the program, follow the program, know where information is located, and are well informed.

### Evaluate, Update, and Maintain Your Program

To make sure your program will provide employee protection, it should be evaluated annually and updated. More frequent review may be required as circumstances warrant. Monitor and track all chemicals coming into the workplace and be attentive to any changes in materials and/or suppliers. ([Attachment H](#)) Make sure you update and maintain the following:

- SDS files include an updated and current chemical inventory list.
- Secondary Container and Bulk Area Labeling.
- Written Policy.
- Training.

### Maintain SDS for Discontinued Materials

You need to maintain MSDS or SDS records for materials that are no longer used by your organization for a period of thirty years. (Under [29CFR1910.1020](#) Medical Records Standard) These can be kept in your master SDS binder under “Discontinued “SDS/MSDS” or may be filed in another location. The written policy should indicate where SDS/MSDS information, both current and discontinued are located.

This information is intended to assist you in your loss control efforts. “Best Practices” are developed from available current information but may not address every possible cause of loss. We do not assume responsibility for the elimination of all hazards that could possibly cause accidents or losses. Adherence to these recommendations does not guarantee the fulfillment of your obligation under local, state, or federal laws.

## Sources of Additional Help

**MMA, Risk Management Services** Please call Loss Control Services @ (800) 590-5583 or visit our website:

<http://www.memun.org/InsuranceServices/RiskManagementServices/LossControl.aspx>

**OSHA Standards:** 29 CFR 1910.1200, 29CFR1910.1020, and 29 CFR 1926.59.

<http://www.osha.gov/>

**Hazard Communication Updates and Questions and Answers:**

<http://www.osha.gov/dsg/hazcom/index.html>

**Maine Municipal Association On-Line Training:**

<https://firstnetcampus.com/mma2/entities/mma/logon.htm>

**Maine Department of Labor, SafetyWorks:** <http://www.safetyworksmaine.com>

**NIOSH Pocket Guide:** <https://www.cdc.gov/niosh/npg/npgsyn-a.html>

**International Chemical Safety Cards (ICSCs):** <http://www.cdc.gov/niosh/ipcs/>

**National Fire Protection Association:** <http://www.nfpa.org>

**ACGIH:** <http://www.acgih.org/>





# Attachment A






## Hazardous Chemicals Inventory

Date: \_\_\_\_\_

			Product Usage

<p><b>2</b></p> 	<p><b>1</b> Sulfuric Acid</p> <p><b>3</b> Danger! May be harmful if swallowed. Causes severe skin burns and eye damage. Fatal if inhaled. Harmful to aquatic life.</p> <p><b>4</b></p> <p>Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.</p> <p><b>5</b></p> <p><b>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.</b></p> <p><b>In case of fire Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.</b></p> <p>See Safety Data Sheet for further details regarding safe use of this product.</p> <p>Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA Telephone : +18003255832</p>	<p><b>2</b></p> 
<p><b>1</b> Product Identifier</p> <p><b>2</b> Pictograms</p> <p><b>3</b> Signal word, "Danger!"</p>	<p><b>4</b> Hazard Statements</p> <p><b>5</b> Precautionary Statements</p> <p><b>6</b> Supplier Information</p>	

# Attachment C

	<h2 style="margin: 0;">GHS SAFETY DATA SHEET</h2> <p style="margin: 0;"><b>WELD-ON® 763™ Low VOC Styrene Rubber Cement</b></p>	Date Revised: <b>FEB 2010</b> Supersedes: <b>OCT 2009</b>			
<b>SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION</b>					
<b>PRODUCT NAME:</b> WELD-ON® 763™ Low VOC Styrene Rubber Cement <b>PRODUCT USE:</b> Low VOC Styrene Rubber Cement <b>SUPPLIER:</b> _____ <b>MANUFACTURER:</b> IPS Corporation 17109 South Main Street, Carson, CA 90248-3127 P.O. Box 379, Gardena, CA 90247-0379 Tel. 1-310-898-3300 <b>EMERGENCY:</b> Transportation: Tel. 800.424.9300, 703.527.3887 CHEMTREC (International) <b>Medical:</b> Tel. 800.451.8346, 760.602.8703 3E Company (International)					
<b>SECTION 2 - HAZARDS IDENTIFICATION</b>					
<b>GHS CLASSIFICATION:</b>					
<b>Health</b> Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B	<b>Environmental</b> Acute Toxicity: None Known Chronic Toxicity: None Known	<b>Physical</b> Flammable Liquid Category 2			
<b>GHS LABEL:</b>   <b>OR</b>   <b>Signal Word:</b> Danger <b>WHMIS CLASSIFICATION:</b> CLASS B, DIVISION 2					
<b>Hazard Statements</b>		<b>Precautionary Statements</b>			
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness EUH019: May form explosive peroxides		P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation			
<b>SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS</b>					
	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight	
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	54 - 71	
All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing. * Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).					
<b>SECTION 4 - FIRST AID MEASURES</b>					
<b>Contact with eyes:</b>	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.				
<b>Skin contact:</b>	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.				
<b>Inhalation:</b>	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.				
<b>Ingestion:</b>	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.				
<b>SECTION 5 - FIREFIGHTING MEASURES</b>					
<b>Suitable Extinguishing Media:</b>	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal	
<b>Unsuitable Extinguishing Media:</b>	Water spray or stream.	Health	2	2	
<b>Exposure Hazards:</b>	Inhalation and dermal contact	Flammability	3	3	
<b>Combustion Products:</b>	Oxides of carbon, hydrogen chloride and smoke	Reactivity	0	0	
<b>Protection for Firefighters:</b>	Self-contained breathing apparatus or full-face positive pressure airline masks.			3-Serious	
				4-Severe	
<b>SECTION 6 - ACCIDENTAL RELEASE MEASURES</b>					
<b>Personal precautions:</b>	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).				
<b>Environmental Precautions:</b>	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.				
<b>Methods for Cleaning up:</b>	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.				
<b>Materials not to be used for clean up:</b>	Aluminum or plastic containers				
<b>SECTION 7 - HANDLING AND STORAGE</b>					
<b>Handling:</b>	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.				
<b>Storage:</b>	Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.				
<b>SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION</b>					
<b>EXPOSURE LIMITS:</b>	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	
<b>Engineering Controls:</b>	Use local exhaust as needed.				
<b>Monitoring:</b>	Maintain breathing zone airborne concentrations below exposure limits.				
<b>Personal Protective Equipment (PPE):</b>					
<b>Eye Protection:</b>	Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.				
<b>Skin Protection:</b>	Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.				
<b>Respiratory Protection:</b>	Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.				

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Milky, medium syrupy liquid  
 Odor: Ketone  
 pH: Not Applicable  
 Melting/Freezing Point: 86 °C (187 °F) Based on first melting component: MEK  
 Boiling Point: 80 °C (176 °F) Based on first boiling component: MEK  
 Flash Point: -9 °C (16 °F) TCC based on MEK  
 Specific Gravity: 0.880 @23 °C ( 73 °F)  
 Solubility: Solvent portion soluble in water. Resin portion separates out.  
 Partition Coefficient n-octanol/water: Not Available  
 Auto-ignition Temperature: 515 °C (959 °F) based on MEK  
 Decomposition Temperature: Not Applicable  
 VOC Content: When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 490 g/l.

Odor Threshold: 5.4 ppm (MEK)  
 Boiling Range: 80 °C (176 °F)  
 Evaporation Rate: > 1.0 (BUAC = 1)  
 Flammability: Category 2  
 Flammability Limits: LEL: 1.4% based on MEK  
 UEL: 11.4% based on MEK  
 Vapor Pressure: 78 mm Hg @ 20 °C (68 °F) MEK  
 Vapor Density: >2 (Air = 1)  
 Other Data: Viscosity: Medium bodied

**SECTION 10 - STABILITY AND REACTIVITY**

Stability: Stable  
 Hazardous decomposition products: None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.  
 Conditions to avoid: Keep away from heat, sparks, open flame and other ignition sources.  
 Incompatible Materials: Oxidizers, strong acids and bases, amines, ammonia

**SECTION 11 - TOXICOLOGICAL INFORMATION**

Likely Routes of Exposure: Inhalation, Eye and Skin Contact  
 Acute symptoms and effects:  
 Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
 Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.  
 Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
 Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.  
 Chronic (long-term) effects: None known to humans  
 Toxicity: LD50 LC50  
 Methyl Ethyl Ketone (MEK) Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) Inhalation 8 hrs. 23,500 mg/m<sup>3</sup> (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

**SECTION 12 - ECOLOGICAL INFORMATION**

Ecotoxicity: None Known  
 Mobility: In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 490 g/l.  
 Degradability: Biodegradable  
 Bioaccumulation: Minimal to none.

**SECTION 13 - WASTE DISPOSAL CONSIDERATIONS**

Follow local and national regulations. Consult disposal expert.

**SECTION 14 - TRANSPORT INFORMATION**

Proper Shipping Name: Adhesives  
 Hazard Class: 3  
 Secondary Risk: None  
 Identification Number: UN 1133  
 Packing Group: PG II  
 Label Required: Class 3 Flammable Liquid  
 Marine Pollutant: NO

**EXCEPTION for Ground Shipping**  
 DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.  
 Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

**TDG INFORMATION**  
 TDG CLASS: FLAMMABLE LIQUID 3  
 SHIPPING NAME: ADHESIVES  
 UN NUMBER/PACKING GROUP: UN 1133, PG II

**SECTION 15 - REGULATORY INFORMATION**

Precautionary Label Information: Highly Flammable, Irritant  
 Symbols: F, Xi  
 Risk Phrases: R11: Highly flammable.  
 R20: Harmful by inhalation.  
 R36/37: Irritating to eyes and respiratory system.  
 Safety Phrases: S9: Keep container in a well-ventilated place.  
 S16: Keep away from sources of ignition - No smoking.  
 S25: Avoid contact with eyes.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECLTCL, Japan MITI (ENCS)  
 R66: Repeated exposure may cause skin dryness or cracking  
 R67: Vapors may cause drowsiness and dizziness  
 S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S33: Take precautionary measures against static discharges.  
 S46: If swallowed, seek medical advice immediately and show this container or label.

**SECTION 16 - OTHER INFORMATION**

Specification Information:  
 Department issuing data sheet: IPS, Safety Health & Environmental Affairs All ingredients are compliant with the requirements of the European  
 E-mail address: <EHSinfo@ipscorp.com> Directive on RoHS (Restriction of Hazardous Substances).  
 Training necessary: Yes, training in practices and procedures contained in product literature.  
 Reissue date / reason for reissue: 2/23/2010 / Updated GHS Standard Format  
 Intended Use of Product: Adhesive for bonding/cementing Styrene plastic piping and fittings

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



## Attachment D

### Sample Written Hazard Communication Program

#### Hazard Communication Program

##### I. Organization Policy

The (Organization Name here) of \_\_\_\_\_ is committed to the prevention of hazardous material and chemical incidents that could result in injury and/ or illness to any employee or property damage. The Occupational Safety and Health Administration's (OSHA) Hazard Communication standard (29 CFR 1910.1200) is based on the concept that employees have a need, a "right to know" and a "right to understand" the identities and hazards of chemicals or hazardous materials they work with during the course of their employment. The following Hazard Communication Program has been established by (Organization Name here) \_\_\_\_\_ to meet that standard.

The Program Coordinator, \_\_\_\_\_, has overall responsibility for the program.

The department managers are responsible for managing and maintaining the program and chemical inventory in their respective areas and ensuring all their employees are trained regarding the chemical hazards and safe work practices to employ while handling, storing and using hazardous chemicals.

Employees are responsible for understanding the chemicals they work with and hazards associated with them along with safe work practices and wearing appropriate personal protective equipment while using hazardous chemicals.

##### II. Container Labeling

Each department manager will verify that all containers received for use will be clearly labeled as to:

- Product Identifier
- Signal Word
- Pictograms
- Hazard Statements
- Precautionary Statements
- Supplier Identification

**Secondary containers** may be labeled with an identical label used on the original containers in which the chemical was received, or with alternative labels that meet the requirements for the standard. Alternative labeling systems such as the National Fire Protection Association (NFPA) 704 Hazard Rating and the Hazardous Material Information System (HMIS) are permitted for secondary containers used in the workplace. However, the information supplied on these labels must be consistent with the revised Hazard Communication Standard, e.g., no conflicting hazard warnings or pictograms.

**'Immediate-use' containers** – such as containers of oil that will be placed directly into a vehicle engine – do not have to be labeled unless mandated by the Program Administrator.

### III. Safety Data Sheets (SDS)

The department managers are responsible for ensuring that Safety Data Sheets are obtained, added to the chemical inventory, and placed in the SDS binder or electronic file in their respective work areas. They will also ensure that a copy of the SDS will be forwarded to the Program Coordinator so she/he can place it in the master SDS notebook or file.

Employees will be informed of new or changed chemical hazards as part of their ongoing Hazard Communication training. This training will be documented and kept in the SDS notebook and employee training file.

When an employee purchases a chemical from a local retailer, they must ask for a copy of the SDS specific for that chemical. If this is not provided, they cannot purchase the chemical and bring it into work until the SDS is obtained and reviewed for hazards. Chemicals purchased through a purchasing program with a distributor or manufacturer must be shipped with an SDS. Chemicals cannot be received unless a SDS is obtained with the purchase.

Individuals responsible for the program will determine the best location to keep the SDS inventory database, list and notebook so that it is readily available for all employees.

Old MSDS or SDS will be removed from the active SDS book and placed in a separate notebook or file that must be maintained for 30 years.

### IV. Employee Training and Information

Prior to starting work, each new employee will attend a health and safety orientation that includes the following information and training:

- Location and availability of the written Hazard Communication Program, Chemical Inventory, and SDS notebooks or data.
- An overview of the requirements contained in the Hazard Communication Standard.
- The hazardous chemicals present at his/her work area.
- The physical, health and environmental hazards of the chemicals.
- Understanding of the container labeling format and the information provided on it.
- Understanding the Safety Data Sheet and what is contained in each of the 16 sections.
- Understanding what the “Signal” words mean.
- Understanding the 9 Pictograms.
- Understanding the GHS hazard classification numbering system.



- Understanding the NFPA and HMIS labeling systems.
- Symptoms of acute and long-term overexposure.
- How to determine the presence or release of hazardous chemicals in the work area.
- How to reduce or prevent exposure to hazardous chemicals through use of control procedures, safe work practices, and personal protective equipment.
- Steps the (Organization Name) \_\_\_\_\_ has taken to reduce or prevent exposure to hazardous chemicals.
- Procedures to follow in the event of overexposure to hazardous chemicals.
- Prior to introducing a new chemical hazard into any department, each employee in that department will be given information and training as outlined above for the new chemical hazard.

**Notes on training:**

- Training will be provided at the time of initial assignment of tasks where occupational exposure to a hazardous chemical may take place.
- Training will be provided when a new chemical or a new hazard is introduced in the work area using the new chemical's Safety Data Sheet.
- Training will be repeated when a supervisor feels an employee is in need of additional training or after observation of unsafe work practices in using a chemical.
- Training records will be maintained.

**V. Hazardous Non-Routine Tasks**

Occasionally, an employee may be asked to perform a task that is not part of their normal job. Before taking on a new task, the affected employee will be given information by their supervisor about any hazardous chemicals that might be used during the activity. This information will include:

- a. Specific chemical hazard.
- b. Protective and safety measures the employee should use.
- c. Measures the (Organization Name) \_\_\_\_\_ has taken to reduce hazards, which might include ventilation, personal protective equipment, use of a buddy system, and emergency procedures.
- d. Training provided for this purpose will be documented and kept with the SDS notebook and employee training file.

**VI. Informing Contractors**

It is the responsibility of the Program Coordinator and/ or supervisor to provide contractors with the following information:

- a. Hazardous chemicals to which they may be exposed while working for the (Organization Name) \_\_\_\_\_, and the procedure for obtaining the appropriate SDS.
- b. Steps contracted employees may take to reduce the possibility of exposure by using appropriate protective measures.
- c. An explanation of the chemical secondary container or bulk area labeling system used by (Organization Name)\_\_\_\_\_.

It is also the responsibility of the Program Coordinators and/or identified staff to identify and obtain SDS for chemicals the contractor brings into the work area. Employees of the town will be informed of any potential chemical hazards brought in by outside contractors.

#### VII. Chemicals in Unlabeled Pipes

Work activities may sometimes be performed by employees in areas where chemicals are transferred through unlabeled pipes. At this time, (Organization Name) has identified that there are no pipes carrying hazardous chemicals in areas where town employees may be working. If, at some future point, employees encounter unlabeled pipes that may contain hazardous chemicals, the employee will contact their supervisor for information regarding:

- a. The chemicals in the pipes.
- b. Potential Hazards.
- c. Safety Precautions to be taken.

#### VII. Obtaining the Written Hazard Communication Program

Copies of the (Organization Name) \_\_\_\_\_ written Hazard Communication Program are available at the \_\_\_\_\_ (Location).

**Date Implemented:**

**Review Dates:**

## Attachment E

### Hazard Communication Safety Data Sheets

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

**Section 1, Identification** includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

**Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.

**Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.

**Section 4, First-aid measures** includes important symptoms/ effects, acute, delayed; required treatment.

**Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.

**Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.

**Section 7, Handling and storage** list precautions for safe handling and storage, Compatibilities.

**Section 8, Exposure controls/personal protection** lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

**Section 9, Physical and chemical properties** lists the chemical's characteristics.

**Section 10, Stability and reactivity** list chemical stability and possibility of hazardous reactions.

**Section 11, Toxicological information** includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

**Section 12, Ecological information\***

**Section 13, Disposal considerations\***

**Section 14, Transport information\***

**Section 15, Regulatory information\***

**Section 16, Other information**, includes the date of preparation or last revision.





## Hazard Communication Safety Data Sheets

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**Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.

**Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.

**Section 4, First-aid measures** includes important symptoms/effects, acute, delayed; required treatment.

**Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.

**Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.

**Section 7, Handling and storage** lists precautions for safe handling and storage, including incompatibilities.

*(Continued on other side)*

For more information:



OSHA 3492BQ 2012



## Hazard Communication Safety Data Sheets

**Section 8, Exposure controls/personal protection** lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

**Section 9, Physical and chemical properties** lists the chemical's characteristics.

**Section 10, Stability and reactivity** lists chemical stability and possibility of hazardous reactions.

**Section 11, Toxicological information** includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

**Section 12, Ecological information\***

**Section 13, Disposal considerations\***

**Section 14, Transport information\***

**Section 15, Regulatory information\***

**Section 16, Other information**, includes the date of preparation or last revision.

\*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

**Employers must ensure that SDSs are readily accessible to employees.**

See Appendix D of 29 CFR 1910.1200 for a detailed description of SDS contents.

For more information:



OSHA 3492BQ 2012



## Attachment F

### HMIS/NFPA vs. GHS

- |     | Hazardous Material | Information System/NFPA |
|-----|--------------------|-------------------------|
| • 0 | Minimal Hazard     |                         |
| • 1 | Slight Hazard      |                         |
| • 2 | Moderate Hazard    |                         |
| • 3 | Serious Hazard     |                         |
| • 4 | Severe Hazard      |                         |










### GHS Hazard Categories

- 1 Severe Hazard
- 2 Serious Hazard
- 3 Moderate Hazard
- 4 Slight Hazard
- 5 Minimal Hazard

Hazard Class	Hazard Category						
Explosives	Unstable Explosives	Div 1.1	Div 1.2	Div 1.3	Div 1.4	Div 1.5	Div 1.6
Flammable Gases	1	2					
Flammable Aerosols	1	2					
Oxidizing Gases	1						
Gases Under Pressure	1						
Flammable Liquids	1	2	3	4			
Flammable Solids	1	2					
Self-Reactive Chemicals	Type A	Type B	Type C	Type D	Type E	Type F	Type G
Pyrophoric Liquids	1						
Pyrophoric Solids	1						
Pyrophoric Gases	Single category						
Self-heating Chemicals	1	2	3				
Oxidizing Liquids, Solids	1	2	3				
Organic Peroxides	Type A	Type B	Type C	Type D	Type E	Type F	Type G

# Attachment G

## Hazard Communication System Pictograms and Hazards

<p><b>Health Hazard</b></p>  <p>Carcinogen Mutagenicity Reproductive Toxicity Respiratory Sensitizer Target Organ Toxicity Aspiration Toxicity</p>	<p><b>Flame</b></p>  <p>Flammables Pyrophorics Self-Heating Emits Flammable Gas Self-Reactives Organic Peroxides</p>	<p><b>Exclamation Mark</b></p>  <p>Irritant (skin and eye) Skin Sensitizer Acute Toxicity Narcotic Effects Respiratory Tract Irritant Hazardous to Ozone Layer (Non-Mandatory)</p>
<p><b>Gas Cylinder</b></p>  <p>Gases Under Pressure</p>	<p><b>Corrosion</b></p>  <p>Skin Corrosion/Burns Eye Damage Corrosive to Metals</p>	<p><b>Exploding Bomb</b></p>  <p>Explosives Self-Reactives Organic Peroxides</p>
<p><b>Flame Over Circle</b></p>  <p>Oxidizers</p>	<p><b>Environment</b> (Non-Mandatory)</p>  <p>Aquatic Toxicity</p>	<p><b>Skull and Crossbones</b></p>  <p>Acute Toxicity (fatal or toxic)</p>

## Attachment H

### Program Evaluation Form

1. Has a list of all hazardous chemicals or materials in the workplace been prepared?

Yes / No

2. Do you have a method for updating Safety Data Sheets inventory list and reviewing work processes?

Yes / No

3. Have you obtained a Safety Data Sheets for each hazardous chemical or material used? Yes / No

4. Has a system been developed to ensure that all incoming hazardous chemicals or materials have proper labels and Safety Data Sheets?

Yes / No

5. Are procedures in place to ensure secondary containers of hazardous materials or chemicals have labels placed on them?

Yes / No

6. Are employees aware of the requirements of the Hazard Communication Standard and information specific to their workplace?

Yes / No

7. Are employees familiar with the he chemicals in their workplace and know where to locate the Safety Data Sheets?

Yes / No

8. Have the employees been informed of the hazards associate handling and storing hazardous chemicals or materials?

Yes / No

9. Do employees understand how to detect the presence or release of hazardous materials in their workplace?



Yes/ No

10. Are employees trained about proper work practices and personal protective equipment in relation to the hazardous chemicals or materials in their work area? Yes/ No

11. Does the training program provide information on appropriate first aid, emergency procedures, and likely symptoms of overexposure?

Yes/ No

12. Does the training program include an explanation of labels, pictograms, signal words, safety data sheet contents and warnings that are used in each work area? Yes / No

13. Does the training describe where employees obtain Safety Data Sheets and how employees use them?

Yes / No

15. Is a system in place to identify new hazardous chemical or materials that are used by outside contractors?

Yes / No

16. Is a system in place to inform employees of the hazards associated with newly introduced materials?

Yes / No

17. Is there a Hazard Communication Program Coordinator assigned to evaluate, monitor and update the program?

Yes/ No

18. Is there a system in place for receiving a SDS during the purchasing process?

Yes/ No

# Attachment I

## Hazard Material Information System

HMIS System Identifies:

- Health Hazards – **Blue**
- Flammability Hazards – **Red**
- Physical Hazards – **Orange**

Hazard Severity (0 to 4):

- 0 = Minimal
- 1 = Slight
- 2 = Moderate
- 3 = Serious
- 4 = Severe



## Attachment J



### NFPA Rating System

#### Health - Blue

- 4 **Danger** May be fatal on short exposure. Specialized protective equipment required.
- 3 **Warning** Corrosive or toxic. Avoid skin contact or inhalation.
- 2 **Warning** May be harmful if inhaled or absorbed.
- 1 **Caution** May be irritating.
- 0 No unusual hazard.

#### Flammability - Red

- 4 **Danger** Flammable gas or extremely flammable liquid.
- 3 **Warning** Flammable liquid flash point below 38 C.
- 2 **Caution** Combustible liquid flash point between 38 and 93 C.
- 1 Combustible if heated.
- 0 Not combustible.

#### Reactivity - Yellow

- 4 **Danger** Explosive material at room temperature.  
May be explosive if shocked, heated under confinement or mixed with water.
- 3 **Danger** water.
- 2 **Warning** Unstable or may react violently if mixed with water. 1
- Caution** May react if heated or mixed with water but not violently 0
- Stable** Not reactive when mixed with water.

#### Special Notice - White

- W Water Reactive.
- OXY Oxidizing Agent.