

Chemical Hygiene and Safety

Otis College of Art and Design **Health and Safety Training Series**

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Chemical Safety and Hygiene





- Main Goals:
 - To enhance the levels of health and safety on campus
 - To comply with Cal/OSHA requirements.
 - To establish common guidelines concerning hazard communication and chemical safety for Otis College students, faculty, and staff, as well as others who may be coming in contact with hazardous materials while on College property.

Hazard Communication

- Hazard Communication is a requirement of state and federal law, designed to educate and inform individuals about chemical materials and process hazards within an institution.
- A written Hazard Communication Program typically explains how the information is communicated:
 - A list of the hazardous materials used on-site, as well as detailed information about the chemical, its possible hazards, and ways to protect oneself (summarized as Safety Data Sheets or SDSs).
 - Interpretation of the Hazard Communication Standard, and information on how to read and understand the SDSs and container labels, and directions for protection against chemical hazards.

Safety Data Sheets

- Set to replace previous Material Safety Data Sheet format by 2015
- Will give a uniform 16 section format for chemical manufacturers
- Will provide greater focus on hazard classification of different chemicals and give clear personal health and safety hazard identifiers

IPS CORPORATION		GHS SAFETY DATA SHEET		Date Revised: JUN 2009	
		WELD-ON C-65® Low VOC Cleaner for Plastic Pipe		Supersedes: MAR 2008	
SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION					
PRODUCT NAME: WELD-ON C-65® Low VOC Primer for Plastic Pipe		SYNONYMS: Weld-On® C-65			
PRODUCT USE: Low VOC Cleaner for Plastic Pipe (PVC, CPVC, ABX and Styrene)					
SUPPLIER:		MANUFACTURER: IPS Corporation 17109 South Main Street, Carson, CA 90248-3127 P.O. Box 379, Gardena, CA 90247-0379 Tel. 1-310-898-3300			
EMERGENCY: Transportation: Tel. 800.424.9300, 703.527.3887 CHEMTREK (International),		Medical: Tel. 800.451.8346 3E Company			
SECTION 2 - HAZARDS IDENTIFICATION					
GHS CLASSIFICATION:					
Health		Environmental		Physical	
Acute Toxicity: Category 4	Acute Toxicity: Category III	Flammable Liquid/Aerosol/Gas: Category 1			
Skin Corrosion: Category 3	Chronic Toxicity: Category IV				
Skin Sensitization: YES					
Eye: Category 2B					
GHS LABEL:   OR  					
Hazard Statements			Precautionary Statements		
Highly flammable liquid and vapor		May cause allergic skin reaction		Do not breath vapor	
				Keep container closed Use in well-ventilated area	
SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS					
	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight	
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	4 - 15	
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	2 - 15	
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	60-90	
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. *This chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).					

Safety Data Sheets

- Must be present in every area where hazardous materials (chemical products and chemical waste) are either used or stored.
- Contains information on the nature and properties of a given chemical, first aid measures in case of an exposure, spill response guidelines, and emergency contact numbers.
- Always ask your instructor or supervisor for assistance if you are not certain about a particular chemical material used.



Chemical Container Labels

- Before you start, review the container label for the following information:
 - Identity of the material
 - Manufacturer contact information
 - Physical/health hazards
 - Special handling instructions
 - Personal Protection Equipment (PPE)
 - First aid, fire response, and spill cleanup



Important note: if transferring chemicals from a main container into a secondary one for bench-top use, make sure to mark down the chemical name, volume, user's name(s), and date of dispensing on a new label





Chemical Hazard - Flammable

- Flammable materials can ignite and sustain a fire; can be explosive
- Generated heat can cause serious burns and property damage
- Represented by a symbol  on SDSs and container labels
- Identified by a **red sector** on the NFPA diamond and is rated from 1 to 4 in terms of increasing risk of fire 
- Common flammable products are turpentine and other solvents, paint thinners, lacquers, aerosols, and mineral oils

Chemical Hazard - Toxic

- Toxic substances can cause a variety of health issues, including damage to the internal body systems, if inhaled, ingested, or absorbed through skin; can also be flammable or corrosive
- Represented by a symbol  on SDSs and container labels
- Identified by a **blue sector** on the NFPA diamond and is rated from 1 to 4 in terms of increasing health risk 
- Common toxic products are thiosulfates (photography fixers), as well as various solvents, paints, inks, oils, powders, and products containing mercury or cyanide

Chemical Hazard - Corrosive

- Acids and bases can leech and dissolve other solid materials
- Corrosive materials can cause severe damage to body tissues on contact; fumes can cause burns to respiratory system if inhaled
- Represented by a symbol  on SDSs and container labels
- Identified by a designation “C” on the NFPA diamond 
- Common corrosive products are acetic acid (photography stop bath) and ferric chloride (printmaking etching process)

Other Chemical Hazards

- Reactive materials (such as acetylene welding gas) are identified by a **yellow sector** on the NFPA diamond and are rated from 1 to 4 in terms of increasing violent reaction or detonation risk



- Substances that can cause acute health effects, such as irritants



- Substances that may not cause immediate effects but are highly harmful if accumulated in the body, such as carcinogens



- Substances that can cause environmental damage as persistent pollutants, such as hydroquinone products



Personal Safety Measures

- Do not eat, drink, or smoke in the laboratory or workshop areas or whenever working with chemicals.
- Always wear personal protection equipment (PPE); at the very least, eye protection, and gloves are a must-have.
- Wear closed-toed shoes and cover any bare skin, this creates a protective barrier in case of a chemical spill or splash.
- Chemicals that generate a lot of fumes need to be handled under an exhaust; aerosols (such as spray-paints) must be used outdoors or in areas with ample ventilation.

Personal Safety Measures

- Avoid working alone in any of the on-campus laboratories and workshops; check in with a supervisor or an attendant.
- Do not work with concentrated stock solutions, diluted mixtures are less hazardous and are prepared by authorized personnel.
- Avoid working with unfamiliar chemicals and instead use products vetted by the College; do not mix chemicals without supervision.
- NEVER add water to acid, this causes a violent reaction and a splash-back; always add acid to water slowly!

Spill and Exposure Response

- Report all chemical spills to your instructor or supervisor immediately! Be sure to state what was spilled, if anyone was injured, and prepare to evacuate the area if needed.
- Small spilled amount of inert substances (paints) can be safely cleaned using towels and ventilating the room
- Spilled solvents or printmaking and photography chemistry will need to be assessed by Environmental Health & Safety



Chemical Exposure Response

- **Eyes:** Flush with water for 15 minutes
 - **Skin:** Wash with soap and water, remove contaminated clothing
 - **Inhalation:** Move to fresh air
 - **Swallowing:** Get emergency medical assistance
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- Call 911 for anyone rendered unconscious and **always** seek medical assistance after accidental chemical exposures!




Handling Chemical Waste

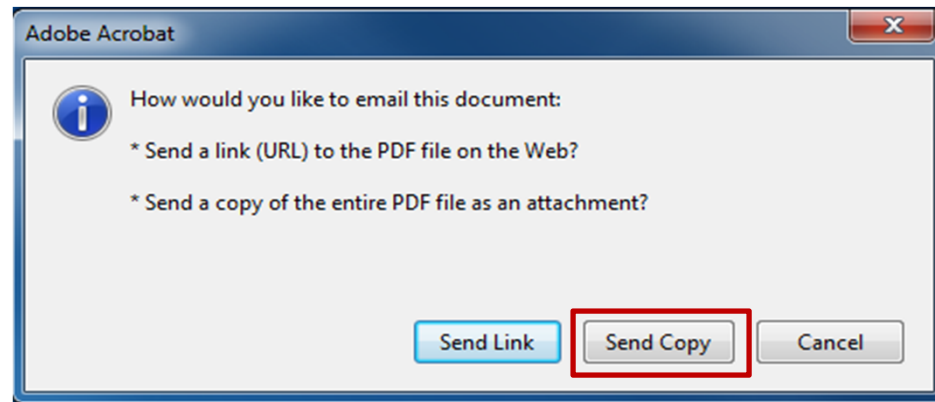
- Do not pour any chemicals down the drain!
- Chemical waste containers are staged inside laboratory and workshop areas and exchanged on regular basis.
- Contact the Environmental Health and Safety (ext. 2609) for help with disposing unused chemicals and hazardous materials.
- Report any observed spills of chemical waste to your instructor or supervisor immediately!

Thank you and please direct any follow-up questions regarding this presentation to pzaretskiy@otis.edu

Please proceed to the next slide for instructions on how to receive a certificate of training for this presentation

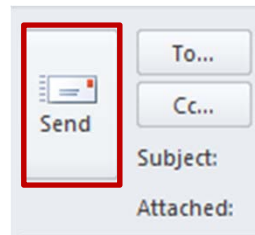
Instructions for Submitting the Environmental Health and Safety On-line Training Confirmation Form

- Fill out all required fields and select the title of the completed training module from the drop-down menu box
- Click the “**Attach form to e-mail**” icon 
- Once a pop-up window will appears, click “**Send Copy**”



Instructions for Submitting the Environmental Health and Safety On-line Training Confirmation Form

- A new Outlook E-mail message will appear with your Confirmation Form as an attachment; be sure to put pzaretskiy@otis.edu as one of the recipients and the click “**Send**” to complete the process!



- Please note that reviewing this presentation alone is not a good substitute for attending the training itself, as additional discussion of topics along with Q & A are often not fully covered by the slides. Training sessions covering various health and safety topics will be regularly announced.

**Environmental Health and Safety
On-Line Training Confirmation Form**

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