Globally Harmonized System (GHS)





/ Complying with GHS HazCom Amendments





/ Hazard Communication—Course Outline

- 1. Why Take Hazard Communication Training?
- 2. Criteria for a Hazard Communication Program
- 3. Globally Harmonized System (GHS)
- 4. The Written Program
- 5. Hazardous Materials Inventory
- 6. Employee Training
- 7. Hazardous Materials and Your Body
- 8. Understanding Exposure Limits



- 9. Hazard Classification
- **10. Exposure Controls**
- 11.Pictograms
- **12.**Container Labeling
- **13.**Other Labeling Requirements
- 14.Safety Data Sheets
- 15.Summary



Adopting GHS results in three major areas of change:

- 1. Hazard classification: The definition of a hazardous chemical has been changed to provide specific, uniform criteria for classification of health and physical hazards.
- 2. Labels: Chemical manufacturers, importers and distributors are required to provide a label that includes a harmonized signal word, pictogram and hazard statement for each hazard class and category. Precautionary statements are also provided.
- **3. Safety Data Sheets:** These will now have a specified 16-section format.



Employers shall provide Team Members with effective information and training on hazardous chemicals at:

- The time of initial assignment
- Whenever a new hazard is introduced
- When transferring
- When returning from extended leave





- The Standard has changed from "Right to Know" to "*Right to Understand*".
- The material safety data sheet (MSDS) is now a safety data sheet (SDS).
- Explain the sequence of order in regard to the information on the SDS.
- Explain the labeling system (for received materials as well as the workplace labeling system).



General Training

- Hazard Communication Standard
- Employer's Written Program
- Location/Availability Of Written Program & SDS
- How to read labels & SDS's





- Characteristics How to detect
- Health & Safety Hazards
- Work practices or SOPs
- Emergency action plans
- Personal Protective Equipment (PPE)
- Non-routine tasks
- Industrial Hygiene monitoring results





A hazardous chemical is any chemical that can do harm to your body.

Most industrial chemicals can harm you at some level.

The level of damage depends how much gets into your body.





That depends on these factors:

- How the chemical enters the body?
- The physical form of the chemical?
- The amount of chemical that actually enters the body the dose?
- How toxic (poisonous) the chemical is?





/ CHEMICALS ROUTES OF ENTRY

- Ingestion swallowing the chemical
- Inhalation breathing in the chemical
- Absorption the chemical soaks through the skin
- Injection the chemical is injected into the skin









/ Ingestion – Swallowing

- Chemicals that are swallowed are absorbed in the digestive tract.
- Chemicals can rub off dirty hands and contaminate food, drinks or tobacco products.
- Chemicals in the air can settle on food or drink and be swallowed.





- Chemicals in the air are breathed in through the mouth or nose.
- Gases & vapors are absorbed through the lungs directly into the bloodstream.
- The size of dust particles or mist droplets can affect where the chemical settles in the respiratory tract.







- Your Skin is your Body's largest Organ.
- Some chemicals can pass through the skin into the body.
- Depending on the chemical, once the chemical(s) are absorbed they can then cause various health effects.









- Chemicals are forced into the skin during clean-up efforts.
- Mostly through incorrect use of Compressed Air.
- Compressed Air Hoses must be limited to 30 Pounds of Pressure Per Square Inch (PSI), anything over that forces the chemical into the skin and directly into the bloodstream.









All chemicals exist in one of three forms:

Solid



Gas



Liquid





- Dust in the air can settle on work surfaces, cups, plates, utensils, and food.
- The settled dust can be swallowed with food or drinks. (This includes Drink Cans; Bottles; or Food on Cleaning Carts or Storage Shelves.)
- If the dust is hazardous, it can cause health problems.



Some chemicals will only make you sick if you get an 'acute" or high dose all at once.

Example – Ammonia

Some chemicals are mainly known for their chronic or long-term effects.

Example – Asbestos

Most chemicals have both acute and chronic effects.

Example – Carbon Monoxide (CO)









Example: Flammable liquids GHS

- Category 1: Extremely flammable liquid and vapour
- Category 2: Highly flammable liquid and vapour
- Category 3: Flammable liquid and vapour
- Category 4: Combustible liquid

While the hazard category number doesn't appear on the label, consider:

GHS Category	<u>HMIS/NFPA 704</u>
1- Highest	4- Extreme
2- High	3- High
3- Medium	2- Moderate
4- Low	1- Slight

There is No Zero under GHS.



Permissible Exposure Limits:

- Chemical exposure limits are written using units of measurement and periods of time.
- Various exposure measurements will be taken at specific, timed points while working with the chemical.
- The exposure measurements will be averaged over the work day of eight hours. The result is a time-weighted average (TWA).
- Based on the chemical hazard, PELs may apply to concentrations in the air or on the skin.

Failing to observe PEL guidelines can lead to sickness, injury or death.



Units of exposure time:

- Eight-hour time-weighted average (TWA): Exposures throughout the work day should not exceed this value.
- 15-minute short term exposure limit (STEL): Exposures during 15 minutes must not exceed this value.
- Ceiling limit (c): Exposures must never exceed this value.





Pictograms and hazards:

- GHS developed a series of nine pictograms for use in labeling.
- It is expected that all existing hazard communication programs will need to be changed in some way to comply with GHS in this area.
- The pictograms will convey any health, physical and environmental hazards that are assigned to a GHS category.

/ Pictograms

Health Hazard Carcinogens, Respiratory Sensitizers, Organ Toxicity	Flame Flammables, Self-Heating Chemicals, Self-Reactive Chemicals	Exclamation Mark Irritants, Skin Sensitizers, Narcotic Effects, Acute Toxicity
Gases Under Pressure	Corrosive Skin Corrosion or Burns, Eye Damage Corrosion to Metals	Flame over Circle Oxidizers (Fertilizers)
Exploding Bomb Explosives, Self-Reactives, Organic Peroxides	Skull and Crossbones Acute Toxicity (Fatal or Toxic)	Environment (Enforced by EPA) Aquatic Toxicity

ATALIAN GLOBAL SERVICES Labels:

- All labels of hazardous chemicals must contain the following information:
- Product identifiers: A unique name or number used for a hazardous chemical that can be cross-referenced between the label, SDS and written hazard communication program.
- Supplier identification: The name, address and telephone number of the responsible party.

		SAMPLE LABEL
PRODUC	T IDENTIFIER	
CODE		
Product Name		
SUPPLIER	DENTIFICATION	
SUPPLIER	IDENTIFICATION	
SUPPLIER 1 Company Name Street Address	IDENTIFICATION	
SUPPLIER 1 Company Name Street Address City	DENTIFICATION	



Labels (continued):

- All labels of hazardous chemicals must contain the following information:
 - Signal words: Used to indicate the severity of the hazard, the signal words are "danger" or "warning."
- Danger is for more severe hazards.
- Pictograms: These are symbols that indicate the hazard of the material.



- Labels (continued):
- By June 1, 2015 all labels of hazardous chemicals must contain the following information:
- Hazard statements: Assigned statements that describe the hazard's nature and its degree of severity. For example:
 - "Fatal if swallowed."
 - "Harmful if inhaled."
 - "Toxic in contact with skin."

Directions for use		
Fill weight:	Lot Number	
Gross weight:	Fil Date:	
Expiration Date:		



Labels (continued):

By June 1, 2015 all labels of hazardous chemicals must contain the following information:

- Precautionary statements: Phrases describing recommended methods to avoid adverse effects. There are four types:
 - o Prevention
 - o Response
 - Storage
 - o Disposal

PRECAUTIONARY STATEMENTS

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. In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO2) fire extinguisher to

extinguish.

First Aid

If exposed call Poison Center. If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.



A Safety Data Sheet (SDS) lists the characteristics of a particular substance:

- Understanding the hazards of the materials you are working with can help you protect yourself against them
- A SDS must be on file and readily available for each substance listed in the hazardous materials inventory section of the hazard communication program.





SDSs must include these 16 sections:

- 1. Identification
- 2. Hazard(s) identification
- 3. Composition and information on ingredients
- 4. First-aid measures
- 5. Fire-fighting measures
- 6. Accidental release measures
- 7. Handling and storage
- 8. Exposure controls and personal protection



SDSs must include these 16 sections (continued):

- 9. Physical and chemical properties
- 10. Stability and reactivity
- 11. Toxicological information
- 12. Ecological information
- 13. Disposal considerations
- 14. Transport information
- 15. Regulatory information
- 16. Other information including the date of preparation or last revision



- Comprehensive hazard communication training is essential to a safe and healthful work environment.
- To ensure your safety, as well as the safety of your co-workers, you must fully understand the types of hazardous materials used at your workplace. If you have any questions, ask your supervisor.
- You must also know what to do in case something unexpected happens during chemical use.
- GHS requires that chemical hazards are communicated in an organized way on labels and Safety Data Sheets (SDSs).
- Labels must have a product identifier that cross references with the SDS, a pictogram and a hazard statement to indicate the degree of severity.
- A good hazard communication program will keep you prepared and safe.



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For more information, please contact: <u>Safety.us@atalianworld.com</u>

ATALIAN Global Services 417 Fifth Avenue, New York, NY 10016 www.atalian.us

