

2013 OSHA Made Easy Hazard Communication/Globally Harmonized System (GHS), and Subparts of the OSH Act

For 2013 training in conjunction with
© CTP workbook and on-line test.



Why Do We Train Our Employees?

- It is required by state and federal law
- To provide a safe and healthy working environment
- To create safety awareness
- To educate and share information



Hazard Communication Standard

- Known as the “Employee’s Right to Know Law”
- OSHA’s Hazard Communication Standard is based on the concept that employees have a right to know the hazards of the chemicals they are exposed to at work
- Employees must also know what protective measures are available to prevent adverse effects from these chemicals



Training Requirements

- Workplace-specific training must be completed before an individual is assigned to tasks w/potential exposure to hazardous chemicals
- Must be done for all employees that are exposed to potentially hazardous chemicals
- **Performed annually thereafter**



Employer Requirements

- Develop/implement a written Hazard Communication Plan
- Develop and maintain a list/inventory of hazardous chemicals
- Insure that each container of hazardous chemicals is properly labeled
- Provide appropriate Personal Protective Equipment (PPE)
- Maintain copies of Material Safety Data Sheets (MSDS)
- Provide safety training to employees



Understanding the transition to GHS

- The federal law requires employers to train on the new Globally Harmonized System (GHS) for Hazard Communication by December 1, 2013
You can still use the current system and may continue to do so until June 1, 2016



So what is the GHS?

- A common and coherent approach to defining and classifying hazards, and communicating information on labels and safety data sheets
- Target audiences include workers, consumers and emergency responders
- Provides the underlying infrastructure for establishment of an **INTERNATIONAL** comprehensive chemical safety program



Why is the GHS needed?

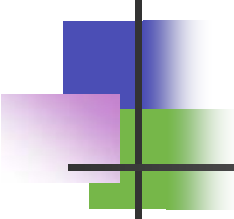
- No country has the ability to identify and specifically regulate every hazardous chemical product
- As an example, in the United States, there are an estimated 650,000 chemical products in use
- Adoption of standard requirements for information to accompany each product helps to address this problem

Why? (cont.)

65 different countries have come to the same conclusion: A harmonious system must be in place as a means to address chemical safety hazards

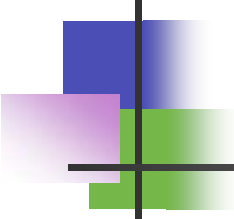


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Why? (cont.)

- Presently different countries have different systems and requirements for hazard definitions as well as information to be included on a label or material safety data sheet
- For example, a product may be considered flammable or toxic in one country, but not in another



Why? (cont.)

- These differences impact both safety and trade
- In the area of safety, users in countries that don't have specific requirements may see different label warnings or data sheet information for the same chemical



Compliance Dates

Employers must:

- Dec 1, 2013 Train employees on new labels & SDS
- June 1, 2016 Update labels, complete training & update hazcom program

Chemical manufacturers, distributors, importers

- June 1, 2015 Must comply with all modified provisions of the final rule
- December 1, 2015 Can ship under old system until this date



Benefits of Harmonization

- Countries, international organizations, chemical producers and chemical users will all benefit by:
 - Enhancing the protection of both people and the environment
 - Facilitation of international trade in chemicals
 - Reducing the need for testing and evaluation
 - Insuring the sound management of chemicals



The Scope of the GHS

- Covers all hazardous chemical substances, dilute solutions, and mixtures
- Pharmaceuticals, food additives and cosmetics will be covered both where workers may be exposed as well as during transportation

Current NFPA Labeling System

Each circle is a different color:

- Flammability is red
- Reactivity is yellow
- Health hazard is blue
- Protective measures are white
- The MSDS provides all of the necessary information

Example		MSDS NO. _____
HAZARD CLASS		
① ② ③ ⑥	ROUTES OF ENTRY	
	<input type="checkbox"/> INHALATION	<input type="checkbox"/> INGESTION
	<input type="checkbox"/> SKIN ABSORPTION	<input type="checkbox"/> SKIN OR EYE CONTACT
	TARGET ORGANS	
<input type="checkbox"/> RESPIRATORY	<input type="checkbox"/> REPRODUCTIVE ORGANS	
<input type="checkbox"/> HEART	<input type="checkbox"/> BLOOD	
<input type="checkbox"/> KIDNEY	<input type="checkbox"/> LIVER	
<input type="checkbox"/> EYES	<input type="checkbox"/> CNS	
<input type="checkbox"/> SKIN	<input type="checkbox"/> CVS	

NFPA Labeling System

- **Protective measures** are determined from the MSDS and the Hazardous Materials Wall Chart.
- Most chemicals require either **five** (safety glasses and gloves) or **six** (gloves, safety glasses and mask)

Protective Measures

Hazardous Materials Wall Chart

HAZARD CLASS		
PROTECTIVE EQUIPMENT	COLORED CIRCLE CODES	DEGREE OF RISK
1	● COMBUSTIBLE	0 - MINIMAL
2	● REACTIVE	1 - SLIGHT
3	● HEALTH	2 - MODERATE
4	○ PROTECTIVE	3 - SERIOUS
		4 - EXTREME

DEGREE OF RISK INDEX	COMBUSTIBLE	REACTIVE	HEALTH
	<p>5</p> <p>6</p> <p>7</p> <p>8</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p>

HAZARD CLASS INDEX	
A. Biohazard	- risk to human life
B. Carcinogen	- a chemical that may cause cancer
C. Compressed Gas	- contained gas with an absolute pressure exceeding 40 psi at 70 °F or gases in a container exceeding 104 psi at 100 °F
D. Corrosive	- a material that may cause irreversible harm to human skin. Many acids are corrosive.
E. Flammable	- any liquid with a flash point of 100 °F or below. Any solid that can sustain fire and readily ignite.
F. Moderate Poison	- a substance that has a tendency to harm or impair health.
G. Non-Hazardous	- a chemical that is neither a physical or health hazard.
H. Radioactive	- elements that spontaneously emit radiation as a result of changes in the nuclei of their atoms.
I. Severe Poison	- a substance that causes grave or critical risk to health.
J. Water Reactive	- a chemical reaction with water that releases a flammable or toxic gas.
K. Oxidizer	- a substance that, in contact with organic material, spontaneously contributes to an organic material's combustion.

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NFPA Labeling System

The red, yellow and blue categories are rated numerically as:

- (0) Zero (no hazard)
- (1) One (minimal hazard)
- (2) Two (slight hazard)
- (3) Three (moderate hazard)
- (4) Four (extreme hazard)



New GHS Labeling

- For labeling, manufacturer/importer must include:
 - Product identifier
 - Signal word
 - Hazard statement(s)
 - Pictogram(s)
 - Precautionary statement(s)
 - Name, address, and telephone number of responsible party
- Once a chemical has been classified, the label preparer may obtain the relevant harmonized information from Appendix C of the Standard
- OSHA is maintaining flexibility for workplace signs and labels.
 - Use of third party hazard rating systems such as the NFPA diamonds or circles and HMIS is still a valid approach in the workplace until June 1, 2016 (**this means the old system is still good till then**)



GHS Hazard Classification

- Defined criteria are used to assign a hazard classification
 - Physical Hazards
 - 16 categories
 - Health Hazards
 - 10 categories
 - Environmental Hazards
- Mixtures
 - GHS provides classification guidance if chemicals are mixed



GHS Hazard Classification

- Physical Hazards (16)
 - Explosives
 - Flammable Gases
 - Flammable Aerosols
 - Oxidizing Gases
 - Gases Under Pressure
 - Flammable Liquids
 - Flammable Solids
 - Self-Reactive Substances
 - Pyrophoric Liquids
 - Pyrophoric Solids
 - Self-Heating Substances
 - Substances which, in contact with water, emit flammable gases
 - Oxidizing Liquids
 - Oxidizing Solids
 - Organic Peroxides
 - Corrosive to Metals



GHS Hazard Classification

- Health Hazards (10)
 - Acute Toxicity
 - Skin Corrosion/Irritation
 - Serious Eye Damage/Eye Irritation
 - Respiratory or Skin Sensitization
 - Germ Cell Mutagenicity
 - Carcinogenicity
 - Reproductive Toxicology
 - Target Organ Systemic Toxicity – Single Exposure
 - Target Organ Systemic Toxicity – Repeated Exposure
 - Aspiration Toxicity







GHS Hazard Classification

- Hazardous to the Aquatic Environment
 - Acute aquatic toxicity
 - Chronic aquatic toxicity
 - Bioaccumulation potential
 - Rapid degradability

Appendix A – Class w/Category

ACUTE ORAL TOXICITY - Class

	Category 1	Category 2	Category 3	Category 4	Category 5
LD ₅₀	£ 5 mg/kg	> 5 < 50 mg/kg	³ 50 < 300 mg/kg	³ 300 < 2000 mg/kg	³ 2000 < 5000 mg/kg
Pictogram					No symbol
Signal word	Danger	Danger	Danger	Warning	Warning
Hazard statement	Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed	May be harmful if swallowed

GHS Hazard Communication

- Labels
 - Symbols (hazard pictograms) with red border
 - Examples:



GHS Pictograms



Explosives,
self-reactives,
organic peroxides



Gases under pressure



Flammables, pyrophoric,
Self-heating, emits flam gas,
self-reactive,
organic peroxides



oxidizers



Acute toxicity,
fatal or toxic



Skin corrosion/burns,
eye damage
corrosive to metals



Carcinogen, mutagenicity,
Repro toxicity, resp sensitizer,
target organ toxicity,
aspiration toxicity



Irritant, skin sensitizer,
acute toxicity, narcotic
effects, resp tract irritant,
haz to ozone layer



Aquatic toxicity

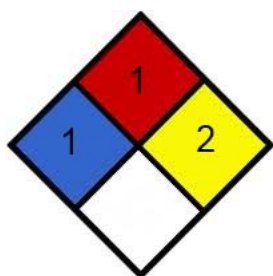


GHS Hazard Communication

- Labels (cont.)
 - Signal Words
 - “Danger” or “Warning”
 - Hazard Statements
 - Example: “Toxic if swallowed”
 - Other
 - Precautions, identification, supplier, supplemental

Understand the numbers...

NFPA



- 4 = severe
- 3 = serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimal

GHS Nomenclature

- Cat. 1 severe hazard
- Cat 2 serious hazard
- Cat 3 moderate hazard
- Cat 4 slight hazard
- Cat 5 minimal hazard

Flammability criteria	GHS Category	NFPA Rating	HMIS Rating
Flpt < 73F, bpt < 100F	1 or 2	4	4
Flpt < 73, bpt ≥ 100F Flpt > 73 & < 100	2 or 3	3	3
Flpt ≥ 100F & < 200F	3 or 4	2	2
Flpt > 200	None	1	1



New GHS label example



ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor



Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. – No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment.

Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO₂, or “alcohol” foam.

See Material Safety Data Sheet for further details regarding safe use of this product

MyCompany, MyStreet, MyTown, NJ 00000, Tel: 444 999 9999

GHS Label

Identity

Signal Word

Hazard Statements


Manufacturer or Distributor

Pictograms

Precautionary statements

FLAMMABLE MATERIAL
Hazardous Components: Ethyl Alcohol (64-17-5); Methanol (67-56-1)

DANGER



Highly flammable liquid and vapor. Causes severe skin burns and eye damage. May be harmful if inhaled. May cause respiratory irritation and drowsiness or dizziness. May cause cancer. May damage fertility or the unborn child. Very toxic to aquatic life.

Prevention Avoid breathing dust, fume, gas, mist, vapors and/or spray. Wear protective gloves, clothing, and eye/face protection. Wash thoroughly after handling. Do not handle until all safety precautions have been read and understood. Ground and/or bond container and receiving equipment. Keep away from heat, sparks, open flames and/or hot surfaces - No smoking. Use explosion-proof electrical, ventilating and/or lighting equipment. Use only non-sparking tools. Avoid release to the environment.

Response IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of fire: Use appropriate media for extinction.

Storage/Disposal Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

2 percent of this product consists of an ingredient of unknown toxicity.

Industrial Data Systems 709 Nissan Drive Smyrna, TN 37167
Emergency: 800-555-5555

New Label Requirements


Old NFPA Label

Chemical Name
CAS# 55-55-5

Health Hazards / Target Organ Effects
Irritant to: Eye, Respiratory system and mucos membranes, Liver, Kidney, Eyes, Skin, Lungs and/or Respiratory System

Physical Hazards
Flammable Liquid

Route of Entry: Inhalation, Skin, Eye, Ingestion




XYZ Chemical, 234 E. 3rd St; Murray KY 42071 227.777.6565

- Current OSHA Standard
 - Material identity
 - Hazard warnings
 - Supplier information

New GHS Label

GHS Chemical

Danger!
Toxic If Swallowed, Flammable Liquid and Vapor



Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat / sparks / open flame - No smoking. Wear protective gloves and eye / face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in a cool / well ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor / physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO2 or "alcohol" foam.

XYZ Chemical, 234 E. 3rd St; Murray KY 42071 227.777.6565

- Updated OSHA GHS Standard
 - Product identifier
 - Signal word
 - Hazard statements
 - Precautionary statements
 - Pictograms
 - Supplier information
 - Supplemental information



Signal Words

“Danger” or “Warning”

- Used to emphasize hazard and discriminate between levels of hazard



Role of the Safety Data Sheet in the GHS

- The Safety Data Sheet (SDS) should provide comprehensive information about a chemical substance or mixture
- Employers and workers use the SDS as a source of information about hazards and to obtain advice regarding safety issues

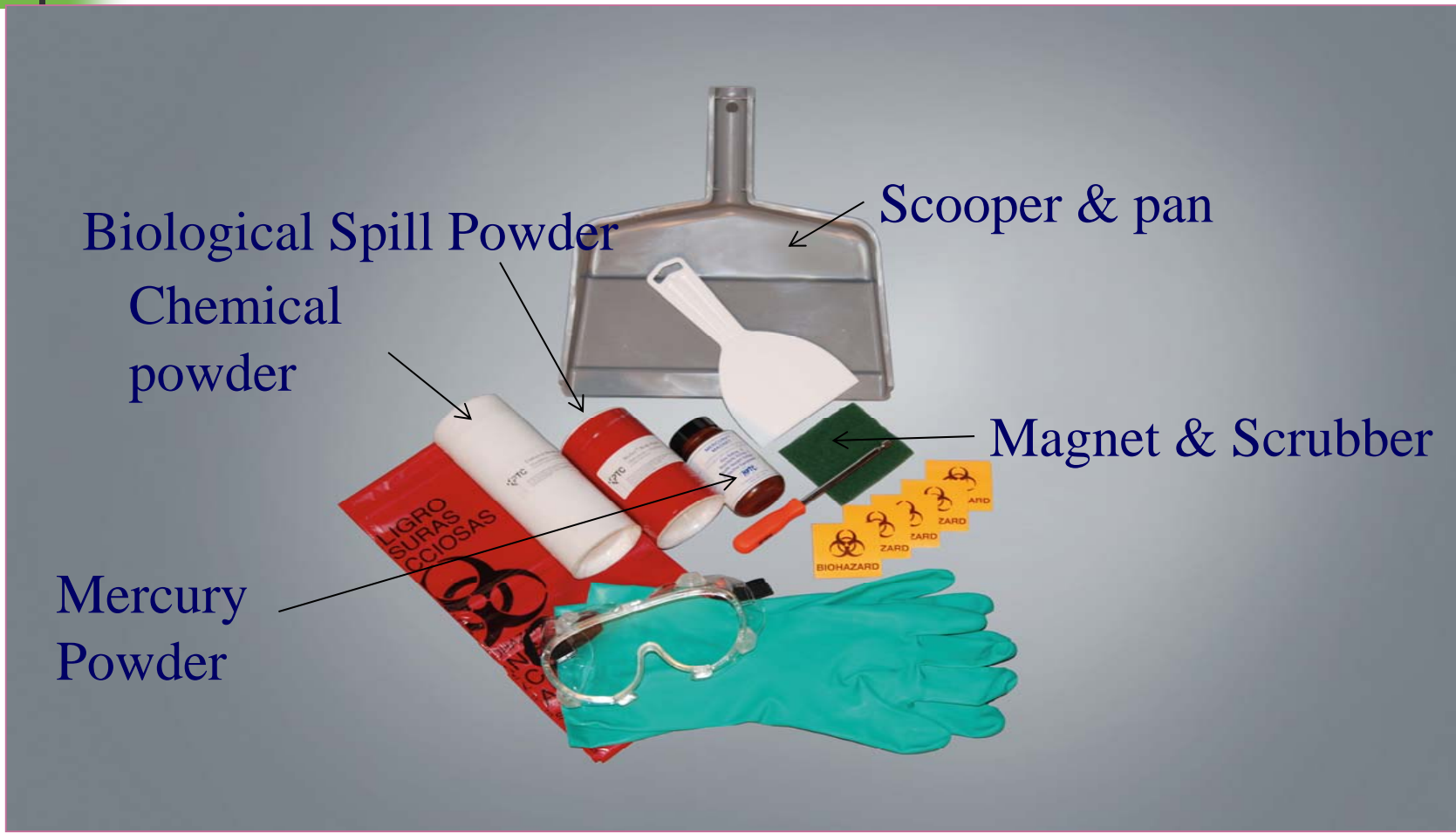


Chemical Spill Cleanup

If you are unsure of the chemical you are cleaning up, refer to the MSDS for that product. For all common spills, follow the following instructions:

- Let everyone know a spill occurred
- Wear the proper protective equipment
- Dilute vapors with proper ventilation
- Confine the spill using the chemical clean-up kit
- Clean spill area with appropriate cleaner
- Dispose of waste properly

Complete Master Spill Kit



Biological Spill Powder

Chemical powder

Mercury Powder

Scooper & pan

Magnet & Scrubber



Applicable Subparts of the OSHA Regulations

- Subpart D – Walking and Working Surfaces
- Subpart E – Means of Egress
- Subpart G – Ventilation and Noise Exposure
- Subpart H – Hazardous Materials
- Subpart I – Personal Protective Equipment
- Subpart K – First Aid
- Subpart L – Fire Safety
- Subpart S – Electrical Safety
- Subpart Z – Record keeping
- Subpart Z – Hazard Communication Standard and
Bloodborne Disease Pathogens Standard



Subpart D

Walking and Working Surfaces

- All areas are to be kept clean, orderly and sanitary
- Aisles and hallways must free of clutter
- Floors must be clean and dry
- Stairways must have railings and guardrails
- Ladders must meet OSHA specifications

Subpart E

Means of Egress

- No unobstructed escape routes
- No locks or fastening devices that might prevent escape
- Illuminated or “glow-in-the-dark” exit signs
- Artificial lighting if power fails
- Fire alarms required if more than 10 employees
- Should have at least two means of egress



Subpart G

Occupational Noise Exposure

- Whenever noise exposure reaches or exceeds an 8-hour time weighted average of 85 decibels, preventive measures must be taken.
- It has been documented that noise levels in dental facilities are below this level. Simply offer disposable ear plugs to employees who request them



Subpart G Ventilation

- Vent fans
- High volume evacuation (HVE)
- Vacuum devices/hoods
- HV/AC circulation

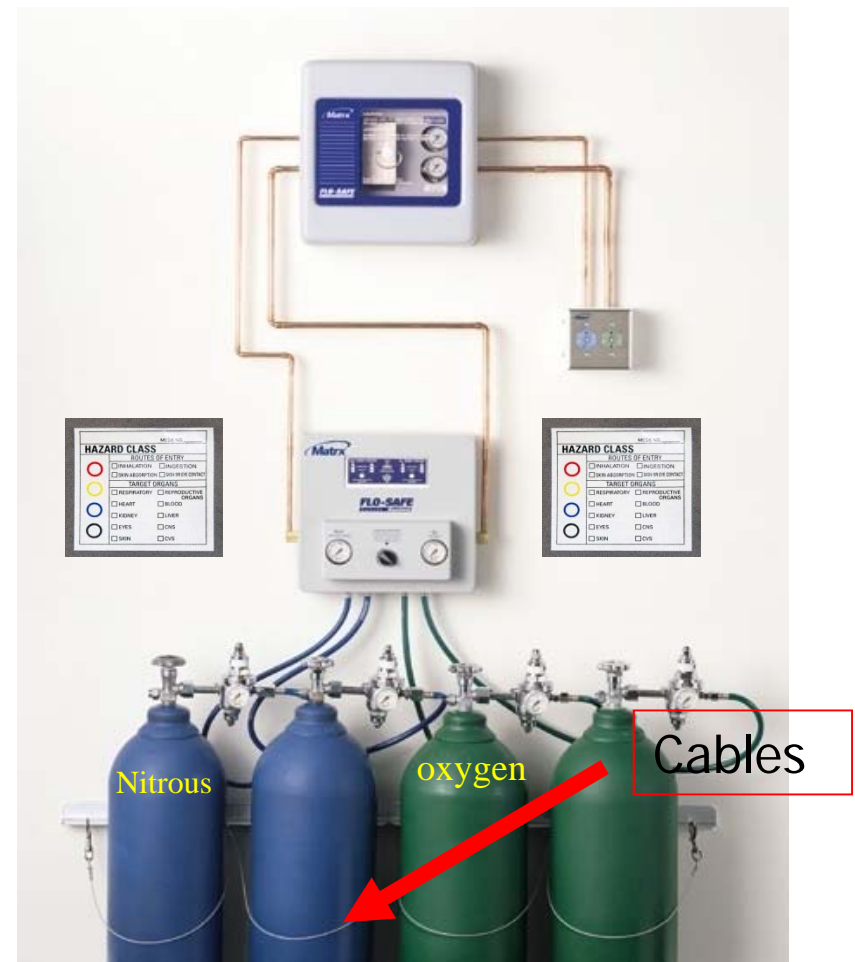


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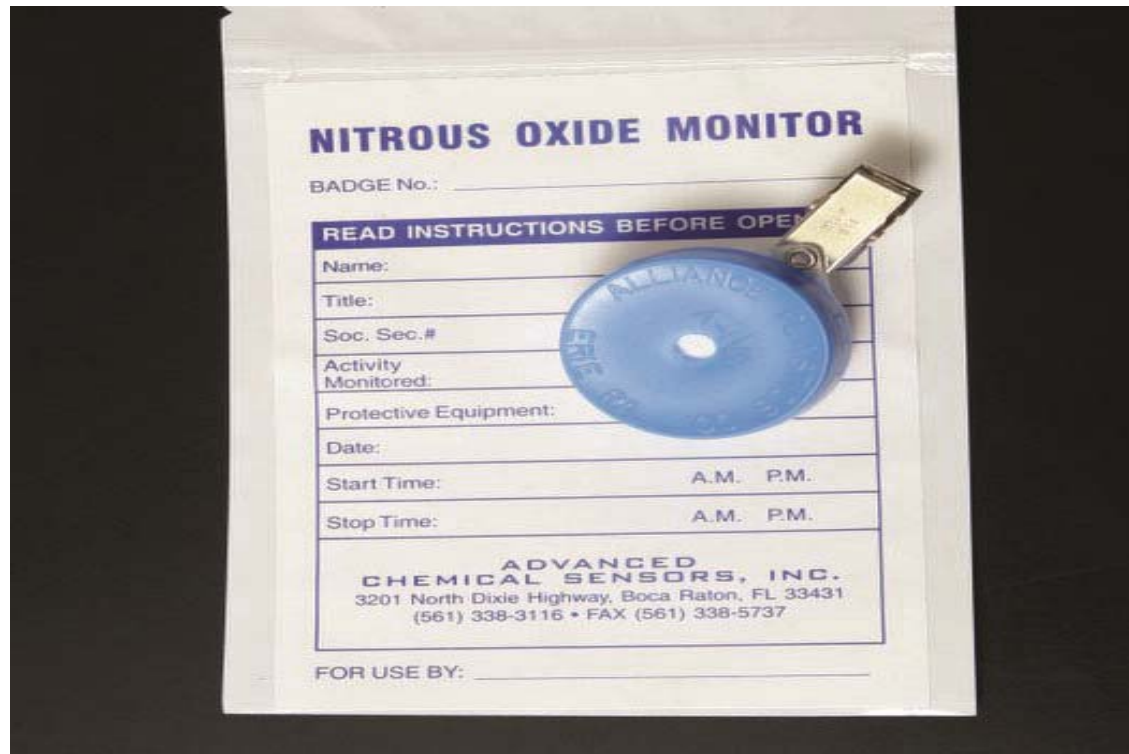
Subpart H Hazardous Materials

- Make sure the tanks and flow meters are properly labeled
- Secure tanks in an upright matter with cable or chain
- Quarterly nitrous oxide testing advised



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Nitrous Oxide Monitoring



Levels must be maintained below a time weighted average of 50ppm

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Subpart I

Personal Protective Equipment (PPE)

- Discuss when PPE is necessary
- What PPE is required
- How to properly adjust and wear PPE
- The limitations of PPE
- Proper care, maintenance and disposal



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Subpart K

First Aid Training

- First Aid Kit
- Employee training
- Eye wash station
- Written report of accidents
- Emergency plan in writing



Subpart L Fire Safety

- Know what is combustible
- Fire extinguishers
- Fire alarms
- Written evacuation plan
- Fire drill
- Safe meeting location



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Subpart S

Electrical Safety

- Do not use extension cords
- Check for warm cords
- Never handle cords with wet hands
- Make sure to untangle cords
- Replace cracked or worn cords
- Make sure to use grounded plugs and ground fault interrupter outlets (GFI's)



Subpart Z

Record Keeping

- Employee's hepatitis B vaccination status or declination form
- Results of work related treatment, examinations, medical testing, and post-exposure evaluation
- **Employee medical records must be kept confidential and not disclosed or reported without the employee's written consent**
- Medical records must be maintained for the duration of employment plus 30 years



Subpart Z

Ionizing Radiation

- Operator must stay out of the path of the central ray when exposing radiographs
- Never hold films for patients
- Employees must be trained how to properly operate radiographic equipment and follow all manufacturers instructions

Landauer Luxel Plus Monitors



Utilizes State-of-the-Art Optically Stimulated Luminescence Technology

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Subpart Z Ionizing Radiation



- Monitoring devices should be worn at waist or collar level
- Devices must be stored at work
- Quarterly monitoring recommended
- Monthly monitoring for pregnant workers



OSHA Inspections

What triggers an OSHA inspection?

1. Imminent danger
2. Catastrophes and fatal accidents
3. Employee complaints
4. Programmed (random) inspections



OSHA Inspections

Inspectors will:

- Ask for the OSHA manual, Chemical Inventory List, and Training Records
- Check for posting of OSHA safety poster
- Interview employees
- Inspect for compliance with OSHA standards
- Comment on and note hazards present



Common OSHA Violations

- No Hazard Communication Program
- No Chemical Inventory List
- Incomplete training of employees
- Lack of personal protective equipment
- Missing posters
- Improper labeling of containers
- No written schedule for cleaning and decontamination



OSHA Citations and Penalties

Compliance Training Partners will provide you with a detailed information about citations and penalties at no charge. Contact our Technical Services Department at 888-388-4782 and request the **OSHA Inspection Package**



Question and Answer



If you have any questions that cannot be answered today, please contact the Compliance Training Partners Technical Services Department at 1-888-388-HPTC(4782)



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