GETTING UP TO SPEED....
with the NEW Hazard-Communication Requirements

A Presentation by: Craig D. Lowry
Deputy Commissioner
Maryland Labor and Industry
HAZARD COMMUNICATION STANDARD IS NOW ALIGNED WITH:

United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

OSHA 29 CFR 1910.1200 SUBPART Z
DISCUSSION PLAN:

• A little history about Hazard Communication Standard – Right to Know Law
• Why the Need for Change
• Written Programs and the Requirements
• Labels - Pictures tell the Story?
• Safety Data Sheets - 16 Required Elements
• Mandatory Training – Completion by 12/1/2013
• Additional Compliance Dates
• Game Plan & Questions
“EMPLOYEE RIGHT TO KNOW” - 1987
HAZARD COMMUNICATION STANDARD (1910.1200)

**Intent** - To provide employees with information to help them make knowledgeable decisions about chemical hazards in their workplace.
Access to Information About Hazardous and Toxic Substances Act?

- The Access to Information About Hazardous and Toxic Substances Act, often referred to as the Employee Right-to-Know law (ERTK), gives employees a way to learn about chemical hazards in the workplace and how to work safely with these materials. The law requires an employer to compile and maintain a chemical information list (CIL) containing the common name, chemical name, and work area for each hazardous chemical used or stored in a workplace. Employers must collect Material Safety Data Sheets (MSDS) for these substances, keeping them at the facility and accessible to employees.

- A copy of the completed chemical information list, arranged by common name, in alphabetical order must be submitted to the Maryland Department of the Environment (MDE). Chemical information lists must be revised, re-alphabetized, and resubmitted to MDE every two years.
WHY ARE THESE REQUIREMENTS NECESSARY?

• To evaluate the hazards of all chemicals imported into, produced, or used in the United States

• To prevent or minimize individual exposure to chemicals

• Because chemical exposure can contribute to serious health effects:
  o Heart ailments
  o Burns/rashes
  o Kidney/lung damage
  o Sterility
  o Cancer
  o Central nervous system damage
EMPLOYEE RIGHT TO KNOW
HAZARD COMMUNICATION STANDARD (1910.1200)
COMMUNITY RIGHT TO KNOW

• To provide a common and coherent approach to reducing chemical injuries and illnesses
• Reduce confusion and increase understanding of chemical hazards and classification
• Facilitate communication about chemical hazards
• Facilitate training related to the avoidance of chemical hazards
• Help address literacy problems
CHEMICAL HAZARD INFORMATION

The basic goal: **Hazard Communication Program** to ensure employers and employees know about workplace chemical hazards and how to protect themselves.

*This should help to reduce the incidence of chemical source illness and injuries.*
SEVEN STEPS TO HAZCOM SUCCESS

1. Hazard Assessment /Chemical Inventory
2. Develop a written HAZCOM Plan
3. Appoint a HAZCOM Coordinator
4. Chemical inventory /Obtain data sheets
5. Ensure labels are fully compliant
6. Establish employee training program
7. Establish HAZCOM maintenance process and supply repository @ MDE
WHY CHANGE WAS NEEDED?

Variation from country to country and state to state United States - estimated 650,000 products

Adoption of requirements
- Better employee protection
- Better trade for companies

Over 500,000 people were exposed to methyl isocyanate gas and other chemicals. 8,000 died within two weeks and another 8,000 or more have since died from gas-related diseases.
MAJOR EXISTING SYSTEMS

UN Transport Recommendations
European Union Directives
Canadian Requirements for Workplace, Consumers and Pesticides
US Requirements for Workplace, Consumers and Pesticides
International mandate to harmonize

“A globally-harmonized hazard classification and compatible labeling system, including material safety data sheets and easily understandable symbols, should be available, if feasible, by the year 2000.”
THE UNITED NATIONS GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS (GHS)?

GHS provides infrastructure for establishment of national and international comprehensive chemical safety programs
PRINCIPLES OF HARMONIZATION

Protections not be reduced

Comprehensive system

All types of chemicals will be covered

- based on intrinsic properties (hazards) of chemicals
COMPREHENSIBILITY

Guiding principles:

- Information should be conveyed in more than one way
- Comprehensibility looks at all existing evidence
- Phrases used to indicate the severity of hazard should be consistent across different hazard types
STANDARD REQUIREMENTS

• Written program for each location to cover issues of chemical safety and hazard communication (HAZCOM)

• Labels to identify each chemical

• Material Safety Data Sheets (MSDSs) (now SDSs under the Globally Harmonized System: GHS)

• Safe work procedures/practices

• Employee training on SDS information and safe chemical procedures and practices
WHAT’S THE DIFFERENCE?

Written HAZCOM program – mostly unchanged

Training – new labels/safety data sheets
• keep same training and add info as it comes into workplace

Labels - new standards and pictograms

(M)SDS – extensive changes – 16 elements
WRITTEN PROGRAM

Definitions have changed or been revised
Some sections called differently
  - Hazard determination / evaluation; now
  - Hazard classification

Mandatory appendices – give guidance and are easily modified.
<table>
<thead>
<tr>
<th>REVISED DEFINITIONS</th>
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<tr>
<td>Chemical</td>
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<td>Chemical name</td>
</tr>
<tr>
<td>Hazardous chemical</td>
</tr>
<tr>
<td>Health hazard</td>
</tr>
<tr>
<td>Label</td>
</tr>
<tr>
<td>Mixture</td>
</tr>
<tr>
<td>Physical hazard</td>
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<tr>
<td>Trade secret</td>
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# NEW DEFINITIONS

<table>
<thead>
<tr>
<th>Hazard classification</th>
<th>Precautionary statement</th>
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<tr>
<td>Hazard category</td>
<td>Product identifier</td>
</tr>
<tr>
<td>HNOC</td>
<td>Pyrophoric gas</td>
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<tr>
<td>Hazard statement</td>
<td>Safety data sheet</td>
</tr>
<tr>
<td>Label elements</td>
<td>Signal word</td>
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<tr>
<td>Pictogram</td>
<td>Simple asphyxiant</td>
</tr>
<tr>
<td></td>
<td>Substance</td>
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</table>
NEW DEFINITION - HNOC

Hazards Not Otherwise Classified

New name of unclassified hazards
  - Not to be listed on labels
  - Must identify in SDS section 2
  - Not classified by GHS, but OSHA added;
    - Pyrophoric gases
    - Simple asphyxiants
    - Combustible dust – OSHA hasn’t defined
NEW DEFINITION – HAZARD CLASSIFICATION

Specific criteria for classifying health and physical hazards into:

- hazard class indicates the nature of hazard (e.g. flammability) and
- hazard category is the degree of severity within each hazard class (e.g. four levels of flammability)
HAZARD CLASSIFICATION – HEALTH & ENVIRONMENTAL HAZARDS

**Acute Toxicity**

- Skin Corrosion/Irritation
- Serious Eye Damage/Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Target Organ Systemic Toxicity – Single and Repeated Dose
- Aspiration
- Hazardous to the Aquatic Environment
PHYSICAL HAZARDS

- Definition, test methods and classification
- **Used criteria for transport** as basis for the work since they were already harmonized
PHYSICAL HAZARDS

Explosives class with categories 1.1-1.6
Flammability – gases, aerosols, liquids, solids
Oxidizers – liquid, solid, gases
Self-Reactive
Pyrophoric – liquids, solids
Self-Heating
Organic Peroxides
Corrosive to Metals
Gases Under Pressure
Water-Activated Flammable Gases
TRAINING

• Upon initial employment

• When a new hazardous product/chemical is introduced into the workplace

• Change in process

• As deemed necessary by supervision/management

• GHS – Retraining by 12/1/2013
“Globally Harmonized System” created by the United Nations

Also known as “GHS”

A system for standardizing chemical classification and labeling for world-wide implementation

Labels:
- Signal words (Danger/Warning)
- Hazard statements
- Precautionary statements
- Pictograms (9)

SDS:
- 16 categories
UPDATING GHS/HCS

• GHS is updated every two years

• Hazard Communication Standard, (HCS), to remain current, can be updated by:
  
  o Technical updates (minor terminology changes),
  o Direct final rules (for text clarification), and
  o Notice and comment rulemaking (for more substantive updates or changes)
HCS KEY REVISIONS ALSO INCLUDE

• Disclosure of PELs and voluntary threshold limit values (TLVs) established by the American Conference of Governmental Industrial Hygienists (ACGIH)

• Disclosure of carcinogen status from nationally and internationally recognized lists of carcinogens

• Inclusion of combustible dust in the definition of “hazardous chemical” covered on labels and SDS

• Workers be re-trained before December 1, 2013

• Mixtures (GHS)
  o Health hazards can be based on data for mixture
  o If no data, extrapolate from ingredient data or other similar mixtures to classify
HNOC: HAZARDS NOT OTHERWISE CLASSIFIED

• Creation of a new category of hazards – “Hazards Not Otherwise Classified” (HNOC)

• HNOC (HCS) disclosed on SDS in section 2, (Don’t need to appear on label)

• Under new GHS standard, the following are not classified and therefore addressed individually as HNOC:
  o Pyrophoric gases
  o Simple asphyxiants
  o Combustible dusts
HAZCOM label elements for:

Pyrophoric Gases:
- **Signal Word**: Danger
- **Hazard Statement**: “Catches fire spontaneously if exposed to air”

Simple Asphyxiants:
- **Signal Word**: Warning
- **Hazard Statement**: “May displace oxygen and cause rapid suffocation”

Combustible Dusts:
- **Signal Word**: Warning
- **Hazard Statement**: “May form combustible dust concentrations in the air”
OSHA WILL ALSO REVISE

Standards dealing with:

• Flammable and combustible liquids
• Process safety management
• Most substance-specific health standards
<table>
<thead>
<tr>
<th>Effective Completion Date</th>
<th>Requirements</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 1, 2013</td>
<td>Train employees on the new label elements and Safety Data Sheet (SDS) format</td>
<td>Employers</td>
</tr>
<tr>
<td>June 1, 2015</td>
<td>Compliance with all modified provisions of this final rule, except:</td>
<td>Chemical manufacturers, importers, distributors and employers</td>
</tr>
<tr>
<td>Dec. 1, 2015</td>
<td>The distributor may ship products labeled by manufacturers under the old system until December 1, 2015</td>
<td>Employers</td>
</tr>
<tr>
<td>Effective Completion Date</td>
<td>Requirements</td>
<td>Who</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>June 1, 2016</td>
<td>Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly-identified physical or health hazards</td>
<td>Employers</td>
</tr>
<tr>
<td>Transition period to the effective completion dates noted above</td>
<td>May comply with either 29 CFR 1910.1200 Hazard Communication (final standard), current standard, or both</td>
<td>Chemical manufacturers, distributors, and employers</td>
</tr>
</tbody>
</table>
OSHA AND MOSH

Phase in of the Hazard Communication Standard (HCS) Fully effective by June 1, 2016
HAZARD CLASSIFICATION

• GHS has specific criteria for each health and physical hazard

• Detailed instructions for hazard evaluation and determinations whether mixtures of the substance are covered

• A and B (mandatory): Classification guidance for health hazards and physical hazards

• Test-method neutral (person classifying a chemical or substance should use available data and no additional testing is required to classify a chemical)
HAZARD COMMUNICATION & CHEMICAL SAFETY

Chemicals are all around us every day

Chemicals can be:
- Corrosive
- Reactive
- Flammable
- Explosive
- Oxidizing
- Inert
CHEMICAL SAFETY

In many cases, the chemicals you may deal with at work are no more dangerous than those you use at home.

But in the workplace exposure may be greater, concentrations higher, exposure time longer: potential danger could be greater on the job.
ROUTES OF OCCUPATIONAL EXPOSURE

**Inhalation** - nearly all materials that are airborne can be inhaled

**Skin Absorption** - skin contact with a substance can result in a possible reaction

**Ingestion** - most workers do not deliberately swallow materials they handle

**Injection** – normally associated with bloodborne pathogens

**Ocular** - absorbed through the eyes
HAZARDS

A chemical can pose a “physical hazard” or a “health hazard”

The hazard communication standard applies to both types of hazards

GHS looks at:

- Class-nature of hazard
- Category-degree of severity
PHYSICAL HAZARDS

Physical hazards are exhibited by certain chemicals because of their physical properties (e.g. flammability, reactivity, etc.)

These chemicals fall into the following classes:

- Flammable liquids or solids
- Combustible liquids
- Compressed gases
- Explosives
PHYSICAL HAZARDS

- **Organic peroxide**: May react explosively to temperature/pressure changes
- **Oxidizers**: Chemicals that initiate or promote combustion in other materials
- **Pyrophoric materials**: May ignite spontaneously in air temperatures of 130ºF or below
- **Unstable materials**
- **Water reactive materials**
HEALTH HAZARD

Health hazard - Occurs when a chemical produces an acute or chronic health effect on exposed employees
ACUTE HEALTH EFFECTS

• Happen quickly

• High, brief exposure

• Examples:
  o Carbon monoxide poisoning
  o Cyanide inhalation
  o Hydrogen sulfide inhalation
CHRONIC HEALTH EFFECTS

• May be caused by chemical exposures that do not cause immediate, obvious harm or make you feel sick right away

• May not see, feel, or smell the danger

• Effects are long, continuous and follow repeated long-term exposure; e.g.:
  o Lung cancer from cigarette smoking
  o Black lung from coal mine dust
KEEPING IT SAFE

• Corrosives, solvents and other chemical substances can be potentially dangerous

• Safe handling procedures
  o Read container labels
  o Check SDS(s)

• Never sniff a chemical for identification

• Use appropriate personal protective equipment
LABELS

- Standardization for all workplace labels
- Labels for transit follow DOT process markings
- Enhance communication
LABEL INFORMATION

Chemical manufacturers and importers must provide a label that includes:

- Name, Address and Telephone Number
- Product Identifier
- Harmonized signal word
- Pictogram(s)
- Hazard statement for each hazard class and category
- Precautionary statement(s) must be provided.
GHS Pictograms

Explosives, self-reactives, organic peroxides

Flammables, pyrophoric, self-heating, emits flammable gases, self-reactive, organic peroxides

Gases under pressure

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

The environmental/aquatic toxicity is not within jurisdiction
HEALTH HAZARD

Used to describe:

- Carcinogen
- Mutagenicity
- Reproductive toxicity
- Respiratory sensitizer
- Target organ toxicity
- Aspiration toxicity
- Germ cell mutagens
FLAME

Describes:
- Flammables
- Pyrophorics
- Self-heating
- Emits flammable gas
- Self-reactives
- Organic peroxides
EXCLAMATION MARK

Describes:
- Irritant (skin and eye)
- Skin sensitizer
- Acute toxicity (harmful)
- Narcotic effects
- Respiratory tract irritant
- Hazardous to ozone layer (non-mandatory)
# APPENDIX A – CLASS W/CATEGORY

## ACUTE ORAL TOXICITY - Class

<table>
<thead>
<tr>
<th>LD$_{50}$</th>
<th>Category 1</th>
<th>Category 2</th>
<th>Category 3</th>
<th>Category 4</th>
<th>Category 5</th>
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<tr>
<td>£ 5 mg/kg</td>
<td>&gt; 5 &lt; 50 mg/kg</td>
<td>≥ 50 &lt; 300 mg/kg</td>
<td>≥ 300 &lt; 2000 mg/kg</td>
<td>≥ 2000 &lt; 5000 mg/kg</td>
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</table>

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Signal word</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Pictogram" /></td>
<td>Danger</td>
<td>Fatal if swallowed</td>
</tr>
<tr>
<td><img src="image2" alt="Pictogram" /></td>
<td>Danger</td>
<td>Fatal if swallowed</td>
</tr>
<tr>
<td><img src="image3" alt="Pictogram" /></td>
<td>Danger</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td><img src="image4" alt="Pictogram" /></td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>No symbol</td>
<td>Warning</td>
<td>May be harmful if swallowed</td>
</tr>
</tbody>
</table>
GAS CYLINDER

Describes:

- Gases under pressure
CORROSION

Describes:
- Skin corrosion/burns
- Eye damage
- Corrosive to metals
EXPLODING BOMB

Describes:
- Explosives
- Self-reactives
- Organic peroxide
FLAME OVER CIRCLE

Describes:

- Oxidizers

Anything wrong with this picture?

Yes!

Unsafe storage – cylinders falling over!
SKULL AND CROSSBONES

Describes:

- Acute toxicity (fatal or toxic)
LABELS/OTHER WARNINGS

• Requirements are significantly different from existing HCS

• **Mandatory Appendix C:** What specific information is to be provided for each hazard class and category once a chemical is classified

• HCS now uses nine pictograms to convey health, physical and environmental hazards
  
  • HCS requires use of eight of these pictograms (since environmental is not within MOSH or OSHA’s jurisdiction it is not mandatory)
NEW LABEL REQUIREMENTS

Workplace 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

Fire Instability

2 4 1

Health Special

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

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

GHS Label

GHS Chemical
Danger!
Toxic IfSwallowed, 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.

Updated HazCom Standard
- Product identifier
- Signal word
- Hazard statements
- Precautionary statements
- Pictograms
- Supplier information
- Supplemental information
CHEMICAL LABELS

- Each container **must** be labeled, tagged or marked

- Warning can be a message, words, pictures or symbols

- Labels must be written in English and prominently displayed
LABELS

Information required on a GHS label:

1-Product identifier
2-Pictograms
3-Signal word
4-Hazard statement
5-Precautionary statement
6-Supplier information
CHEMICAL LABELS

• Each container must be labeled, tagged or marked

• Warning can be a message, words, pictures or symbols

• Labels must be written in English and prominently displayed
PICTOGRAM – RED TRIANGLE

Must have RED Triangle Border
READING CHEMICAL LABELS

Labels provide important information about the chemical:

✔ DANGER
✔ WARNING

Always read the label before you begin a job using a potentially hazardous chemical.
LABELING

Employers who only store chemicals may either use OSHA’s new labeling system or continue using the NFPA 704 rating system or HMIS system

(OSHA plans to change the labeling system June 1, 2016)
GHS COMPARISON

GHS classification ratings order of severity differ from NFPA and HMIS:

HMIS/NFPA
0 = Least Hazardous
4 = Most Hazardous

NEW HAZCOM
5 = Least Hazardous
1 = Most Hazardous
BEER

HAZARD WARNING: DANGER: MAY BECOME IRRITABLE & PERVERSE. DO NOT ATTEMPT TO DRIVE OR OPERATE HEAVY MACHINERY.

TARGET ORGANS
BLADDER
STOMACH
BRAIN
KIDNEYS

HEALTH HAZARD
4
1. UNCONSCIOUS
2. DIZZINESS
3. DIZZY
4. A LITTLE TIPSY
5. SLEEP

FIRE HAZARD
4
1. EXPLODES FLATULENCE
2. SPARKING LIGAIS
3. FIRE SMOKE
4. WILL NOT BURN

REACTIVITY
4
1. READY TO TAKE ON MIKE TYSON
2. EASILY PROVOKED
3. GETTING BRAZIL
4. MELT MANNERED
5. STABLE

SPECIFIC HAZARD
H
1. COULD LEAD TO SHOTS OF LIQUOR
2. COULD TURN A 1 INTO A 10
3. HANGOVER LIKELY

PERSONAL PROTECTIVE EQUIPMENT REQUIRED
PORCELAIN THRONE
GAS RESPIRATOR
ASPIRIN
BUCKET
DESIGNATED DRIVER
SLEEP

HAS BEEN KNOWN TO CAUSE IRRATIONAL BEHAVIOR IN LABORATORY RATS
TRANSPORTING

For transportation:
Use pictograms, referred to as labels in transport regulations, prescribed by UN Model Regulations on the Transport of Dangerous Goods
DANGEROUS GOODS LABEL

UN regulations:
This symbol affixed to packaging on a background of contrasting color

Only UN transport markings and labels are required for outer packaging
LABEL EXAMPLES

On containers

On shipping boxes
“Hazard Identification Numbers” may be used with intermodal containers

**Top panel:** 2 or 3 digits coded to group of hazards;

**Bottom panel:** these numbers can be searched in the Emergency Response Guidebook.

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**Example:**

- **Top panel:** 33
- **Bottom panel:** 1203
  - **IM 102/IMO Type 2**
  - **Highly flammable liquid**
  - **Gasoline**
SDS

• Under the GHS, MSDSs (material safety data sheets) become SDS (safety data sheets)

• Categories (16) to be listed in a specific order

• Adheres to ANSI standard Z400.1

• GHS requires new SDSs be in uniform format by June 1, 2015

• Information for mixtures not individual chemicals in a mixture
**SDS**

- Safety Data Sheet
- Developed by chemical manufacturers and importers
- An SDS must be on hand for each hazardous chemical used
- SDS for mixtures not individual chemicals in the mixtures
INFORMATION ON A SDS

• Chemical names

• Manufacturer info (name, address and telephone numbers)

• List of chemical ingredients

• Permissible exposure limits (PELs) and threshold limit values (TLVs)
INFORMATION ON A SDS

Any other exposure limit used or recommended by chemical manufacturer, importer or employer preparing the SDSs now are required on the SDS.
INFORMATION ON A SDS

- Reactions with other chemicals
- Physical appearance
- Date of preparation
- Plus:
  - How to put out a fire caused by a chemical
  - How to handle spills
  - How to prevent dangerous exposures
WHERE ARE YOUR SDS?

SDSs:

• Must be readily accessible to employees during their work shift

• Are typically kept in a centralized location

• Must be updated as new information becomes available
SDS CATEGORIES

Section 1: Identification
Section 2: Hazard identification
Section 3: Ingredients
Section 4: First-aid measures
Section 5: Fire fighting measure
Section 6: Accidental release measures
Section 7: Handling and storage
SDS CATEGORIES

Section 8: Exposure controls and personal protection
Section 9: Physical and chemical properties
Section 10: Stability and reactivity
Section 11: Toxicological information
Section 12: Ecological information*
Section 13: Disposal considerations*
Section 14: Transport information*
Section 15: Regulatory information*
Section 16: Other information

* Environmental / DOT regulated sections 12-15
SECTION 1: IDENTIFICATION

- Product identifier used on label
- Other means of identification
- Recommended use of chemical and restrictions on use
- Name, address, telephone number of manufacturer, importer or other responsible party
- Emergency phone number
SECTION 2: HAZARD IDENTIFICATION

• Instead of hazard determination, employer must classify a hazardous chemical according to changed conditions provided in Appendices A and B
• Pictograms are a new requirement
• Standardized hazard statements
• Signal words
• Precautionary statements are now required
• SDS required for each mixture rather than one for each chemical comprising a mixture
• If one study in 10 indicates material is carcinogenic, but others don’t, must list the one carcinogenic study
SECTION 2

- Classification of chemical
- Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of this section (hazard symbols may be provided as graphical reproductions or the name of the symbol, e.g. flame, skull and crossbones)
- Unclassified hazards (e.g., combustible dust or dust explosion hazard)
- Where an ingredient with unknown acute toxicity is used in a mixture at a concentration $\geq 1$ percent, a statement that $x$ percent of mixture consists of ingredient(s) of unknown toxicity is required
SECTION 3: COMPOSITION

No new requirements other than:

• Format

• A separate SDS will be required for each mixture rather than one for each chemical comprising the mixture
SECTION 3

Except as provided in (i) this section on trade secrets

For Substances

• Chemical name
• Common name and synonyms
• CAS number and other unique identifiers
• Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance
SECTION 3

• The chemical name and concentration or concentration ranges of all ingredients, which are classified as health hazards.

• For all chemicals where a trade secret is claimed Trade Secret a statement that the specific chemical identity and/or percent of composition has been withheld as a trade secret is required
SECTION 4: FIRST AID

• No new requirements other than format
• Description of necessary measures, subdivided according to the different routes of exposure, i.e. inhalation, skin and eye contact, ingestion
• Most important symptoms/effects, acute and delayed
• Indication of immediate medical attention and special treatment needed, if necessary
SECTION 5: FIRE-FIGHTING

No new requirements other than format

- Suitable (and unsuitable) extinguishing media
- Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products)
- Special protective equipment and precautions for firefighters
SECTION 6: ACCIDENTAL RELEASE

• No new requirements other than format
• Personal precautions, protective equipment, emergency procedures
• Methods and materials for containment and clean up
SECTION 7: HANDLING & STORAGE

• No new requirements other than format
• Precautions for safe handling
• Conditions for safe storage, including any incompatibilities

Is this safe storage?

Cylinders unchained; Drum not labeled properly; No spill containment for drum; Materials may be incompatible

NO!
SECTION 8: EXPOSURE CONTROLS/PPE

No new requirements other than format

• OSHA PEL (permissible exposure limit) and any other exposure limit used or recommended by the chemical manufacturer, importer or employer preparing the SDS

• Appropriate engineering controls

• Individual protection measures, such as PPE
SECTION 9: PHYSICAL, CHEMICAL PROPERTIES

No new requirements other than format:

- Appearance (physical state, color, etc)
- Odor
- pH
- Melting point/freezing point
- Initial boiling point and boiling range
- Flash point
- Evaporation rate
- Flammability (solid, liquid, gas)
- Upper/lower flammability or explosive limits
- Vapor pressure
- Vapor density
- Relative density
- Solubility
SECTION 9: PHYSICAL, CHEMICAL PROPERTIES

- Partition coefficient:
  Water Solubility
- Auto-ignition temperature
- Decomposition temperature
- Viscosity
SECTION 10: STABILITY AND REACTIVITY

- New to HCS (as has been required in ANSI Z400.1 standard)
- Reactivity
- Chemical stability
- Possibility of hazardous reactions
- Conditions to avoid (static discharge, shock or vibration)
- Incompatible materials
- Hazardous decomposition products
SECTION 11: TOXICOLOGICAL INFORMATION

No new requirements other than format:

• Description of various toxicological effects and available data used to identify those effects, including:
  o Likely exposure routes (inhalation, ingestion, skin and eye contact)
  o Symptoms related to the physical, chemical and toxicological characteristics
  o Delayed and immediate effects and chronic effects from short and long term exposure
  o Numerical measures of toxicity (such as acute toxicity estimates)
Non-mandatory

To be GHS-compliant, the requirements for this section would be:

- Ecotoxicity (aquatic and terrestrial, where available)
- Persistence and degradability
- Bioaccumulative potential
- Mobility in soil
- Other adverse effects
SECTION 13: DISPOSAL CONSIDERATIONS

• To be GHS compliant, this section is provided, but compliance is outside MOSH/OSHA jurisdiction
• However, OSHA may enforce provisions associated with safe handling and use, including appropriate hygienic practices (see Section 7, above)
• Description of waste residues and information on their safe handling
• Methods of disposal
• Disposal of any contaminated packaging
SECTION 14: TRANSPORTATION INFORMATION

- To be GHS compliant, this section is provided, but compliance is outside MOSH / OSHA jurisdiction.
- UN number
- UN proper shipping name
- Transport hazard classes
- Packing group, if applicable
- Environmental hazards such as marine pollutant (yes/no)
- Special precautions which a user needs to be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises
SECTION 15: REGULATORY INFORMATION

- To be GHS compliant, this section is provided, but compliance is outside MOSH/OSHA jurisdiction
- Safety
- Health
- Environmental regulations specific to product
SECTION 16: OTHER INFORMATION

- No new requirements other than format
- Date of preparation of SDS or last revision date
WRITTEN HAZARD COMMUNICATION PLAN

The standard requires industry:

- To develop and implement a written hazard communication program

- To provide hazard communication training for employees:
  - Initially (to newly hired personnel)
  - Whenever a new hazard is introduced into the workplace
WRITTEN HAZ-COM PLAN SHOULD INCLUDE

• How CIL/SDS filing requirements are being met

• Type of labeling system being used

• Detailed information on training and compliance

• Methods to inform you of non-routine tasks and safe procedures

• Methods to inform outside contractors of the HAZ-COM program
SPECIAL HAZARDS

Management of process spills or leaks:

• Implement the facility’s emergency control program

• Secure the area
CONTRACTOR REQUIREMENTS

• Contractors must abide by the applicable provisions of federal, state and local hazard communication and right to know laws/regulations

• Any contractor found not meeting the provisions of the laws or contractor requirements may be required to cease work until compliance is achieved
CONTRACTOR REQUIREMENTS

• The company will review and provide SDSs for any hazardous chemicals.
• The contractor will maintain a copy of the hazard communication program.
• The contractor will certify that it has met the provisions of applicable laws.
• The contractor will notify the host safety department.
• The contractor will state where chemicals will be used or stored.
GHS- TO COMPLY

• Find good source for relevant/compliant SDSs
• Ensure accurate inventory of products and find corresponding new SDS
• Current classifications, labels, and packaging need to be noted for comparison
• Ensure new SDSs are in place and accessible
• Ensure all containers properly labeled including secondary containers
• Ensure all concerned are appropriately trained
Suggestions for making the transition:

1. Assemble new GHS information
2. Check implementation dates for:
   - Your country, and
   - Out-of-country clients
3. Plan the transition
4. Inventory in-house chemicals
5. Make a plan to:
   - Acquire,
   - Update, and
   - Manage SDS documents
6. Update workplace labels
7. Schedule/conduct employee training
SUMMARY

• All facilities should have a hazard communication plan in a location that is accessible to all employees.

• All hazardous products should be labeled and all employees should be aware of what and where they are.

• SDSs should be available and accessible for all hazardous products.
NOW THAT YOU’VE BEEN THROUGH THE PRESENTATION:

Do you see any problems here?

Large containers balanced on edge of shelf - not safe

If chemical, coffee can is not proper type of storage container

Maybe improperly labeled container - what’s in the coffee can? Coffee not allowed with chemicals; if chemical, not labeled properly
QUESTIONS:

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