GHS

The Globally Harmonized System of Classification and Labeling of Chemicals

WHY THE GHS?

- **No country has the capability to identify and specifically regulate all chemical products**
- **Many countries have their own systems which address classification and communications issues differently in many cases**
- **With the extensive global trading in chemicals being a reality there was a need to have a recognized internationally developed approach to classification and labeling that would provide protection for all workers.**
- **To align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) adopted by 67 nations**
- **To provide a common and coherent approach to classifying chemicals**
- **Reduce confusion and increase understanding of the hazards**
- **Facilitate training**
- **Help address literacy problems**

GHS

- Justification
  - Label requirements differ, requiring multiple labels for the same product
  - Hazard definitions are not consistent
    - Toxicity, Flammability
  - Globally over 100 diverse hazard communication regulations for their products globally
    - Regulatory compliance is complex and costly
    - Barrier to international trade in chemicals

Who is Affected?

- Manufacturers, Distributors, Importers
  - Change SDS information and format
  - Change container labeling
- Employers

  Training employees on changes to:
  - SDS (change from MSDS to SDS and 16-section format)
  - Container Labels (including secondary containers)
- Employees

  Recognize and understand hazards based on:
  - Information in new SDS format
  - Pictograms on container labels
  - Precautionary and hazard statements

GHS

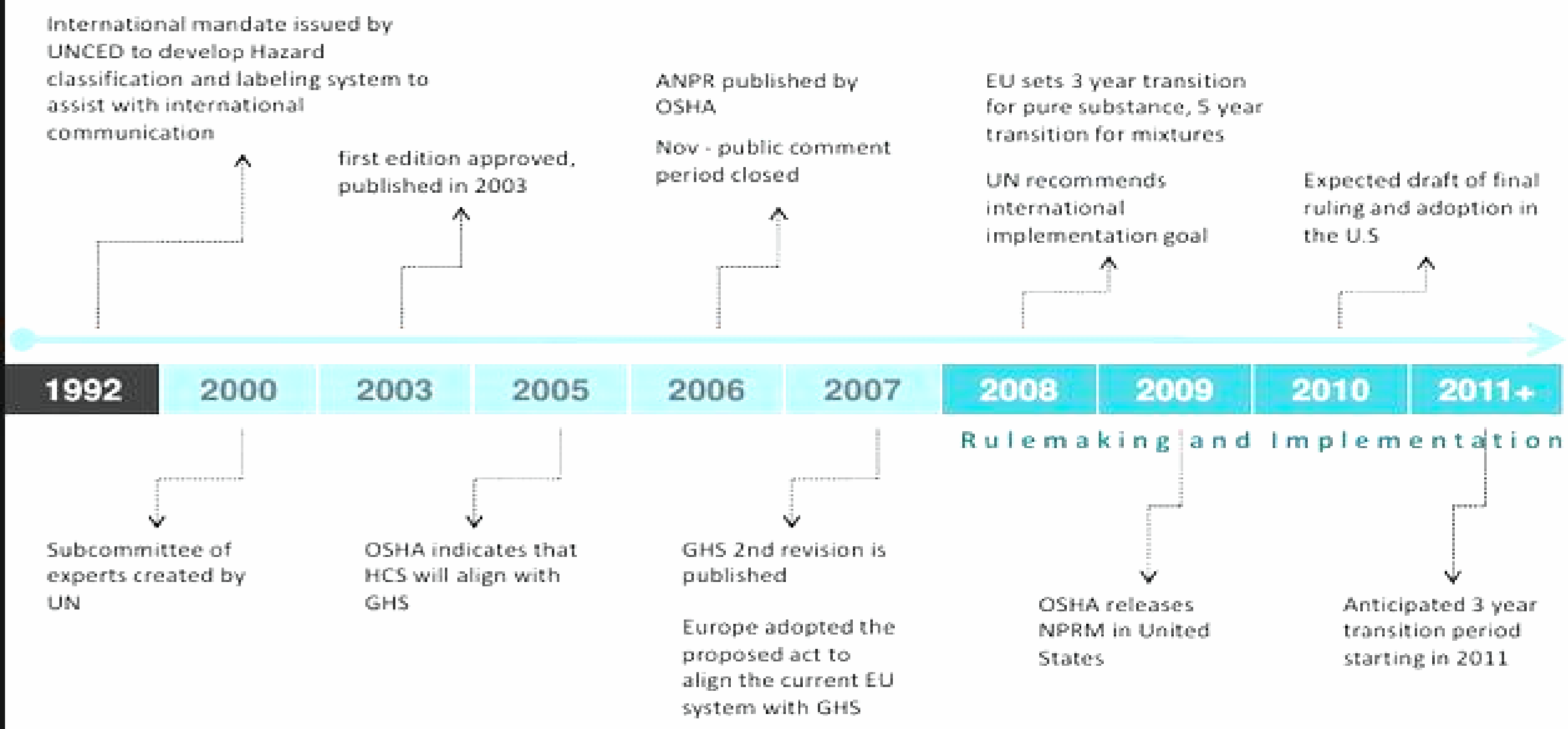
Globally Harmonized System of Classification & Labeling of Chemicals

- International approach to Hazard Communication
- Provides a standardized approach to classifying & communicating chemical hazards:
  - Harmonized Classification of Chemical Hazards
  - Specific Criteria for Labels
  - Harmonized Format for Safety Data Sheets

A Little History

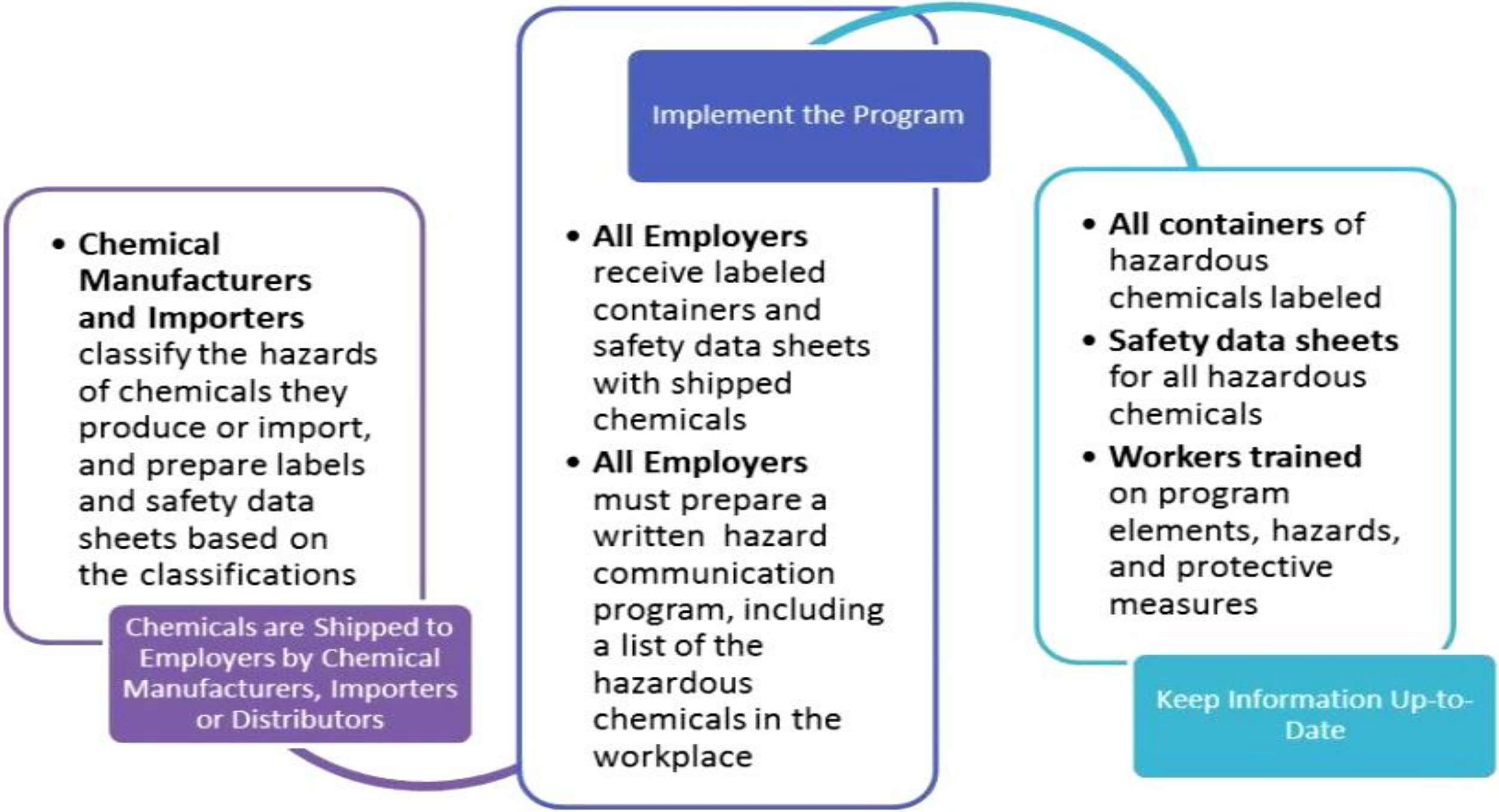
- Early 70s – OSHA (Occupational Safety and Health Administration) Established in USA
- 1983 – Hazard Communication Rule (29 CFR 1910.1200) Initial Promulgation
- 1992 – Rio De Janeiro UN Conference Sets Goal of a "*Globally Harmonized System*" of Hazard Communication in Transportation and Workplace by the Year 2000

GHS Timeline



Implementation Dates

Dec. 1, 2013	June 1, 2015	Dec. 1, 2015	June 1, 2016
Employers must train employees on the new label elements and safety data sheet (SDS) format	Chemical manufacturers, importers, distributors and employers must comply with all modified provisions	Distributors begin shipping containers labeled by the chemical manufacturer or importer with a HCS label	Employers must update alternative workplace labeling and hazard communication programs as necessary and provide additional employee training for newly identified physical or health hazards


Chemical Manufacturers and Importers classify the hazards of chemicals they produce or import, and prepare labels and safety data sheets based on the classifications
Chemicals are Shipped to Employers by Chemical Manufacturers, Importers or Distributors
Implement the Program
All Employers receive labeled containers and safety data sheets with shipped chemicals
All Employers must prepare a written hazard communication program, including a list of the hazardous chemicals in the workplace
All containers of hazardous chemicals labeled
Safety data sheets for all hazardous chemicals
Workers trained on program elements, hazards, and protective measures
Keep Information Up-to-Date

Severity of Danger

- Major Change, Evaluates DEGREE of Danger
- Strict Guidance for Setting Levels
- GHS Reverses “Lower is Better” Expectation in the US

Purpose of HCS Hazard Communication Standard

*"...to ensure **hazards** of all chemicals produced or imported are evaluated and **details** regarding their hazards are **transmitted** to employers and employees"*

*"Ensure requirements are **consistent** nationwide"*

Photo from www.clker.com by user "OCAL"

Benefits of GHS

- Increase the quality and consistency of information.
- Improve comprehensibility and thus the effectiveness of the HCS.
- 43 fatalities and 585 injuries & illnesses will be prevented annually.
- More efficient access to information on the safety data sheets.

Why is the GHS Important?

Why is the GHS Important – The Vision

THE SCOPE OF THE GHS

- **The GHS covers all hazardous chemical substances and mixtures.**

- **However, pharmaceuticals, food additives, cosmetics and pesticide residues in food will not be covered at the point of intentional intake or use but will be covered where workers may be exposed and in transport.**

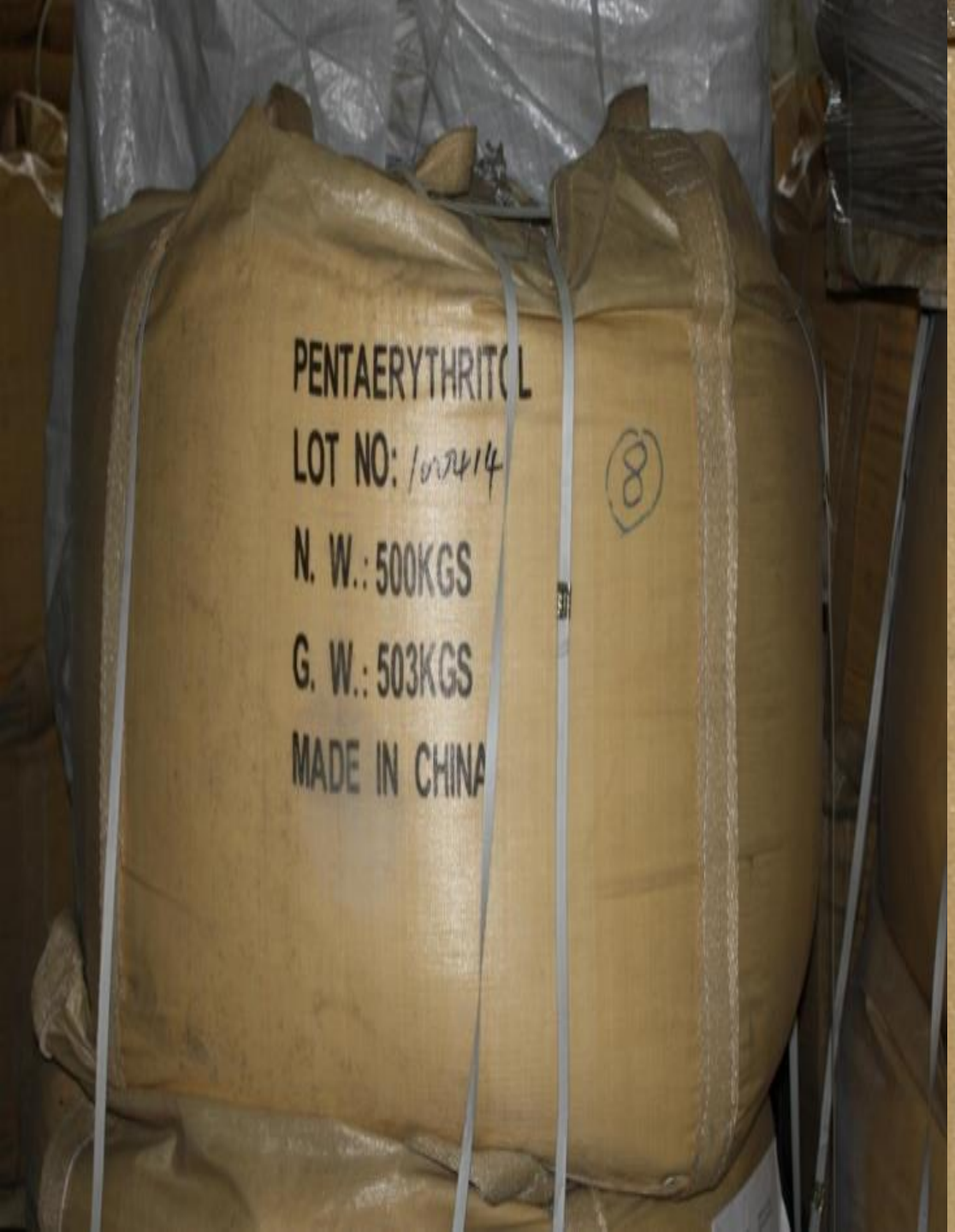
OBJECTIVES OF HARMONIZATION

- ***"Enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication"***
- ***"Provide a recognized framework for countries without an existing system"***
- ***"Reduce the need for testing and evaluation of chemicals"***
- ***"Facilitate international trade in chemicals"***

What's the Impact?

- Rule will impact over 5 million workplaces, and 43 million workers
- OSHA claims costs range from $38-$47 per covered entity for one-hour of training
  - This did not add costs for developing new labels, SDSs etc.
- According to OSHA:
  - Annualized savings for employers of between $585 mil and $798 mil
  - Most of this through increased productivity for H&S managers and logistics personnel
  - Expect 500+ workplace injuries and 43 fatalities to be prevented annually as a result of change
  - Savings attributed to uniform SDSs and labels accounts for between $16 mil and $32.2 mil


$170 Billion in 2010
(Chemicals exported)
MSC DON GIOVANNI



TECH GRADE

CAS#: 115-77-5

PRODUCT ID: 2671

仅用于工业用途
FOR INDUSTRIAL USES ONLY

TECHNICAL GRADE
PENTAERYTHRITOL

SAP# 2671

CAS# 115-77-5

Mono Pentaerythritol (86-92%)
Di Pentaerythritol (1-10%)
Tri Pentaerythritol (1-10%)

HMIS Classification
Health ==== 1 Slight Hazard
Fire ==== 1 Slight Hazard
Reactivity ==== 1 Slight Hazard

Who's Impacted ?

OSHA®

Standardize

Classifications

Safety Data Sheets

Symbols & Labels

Classifications Part 1

Safety Data Sheets

Symbols & Labels

Hazard Classifications

Part 2 - Physical Hazards

Explosives
Flammables (all)
Aerosols
Corrosives
Oxidizers
Pyrophoric
Self-Reactive
Self-Heating
Water-Reactive
Pressurized Gases

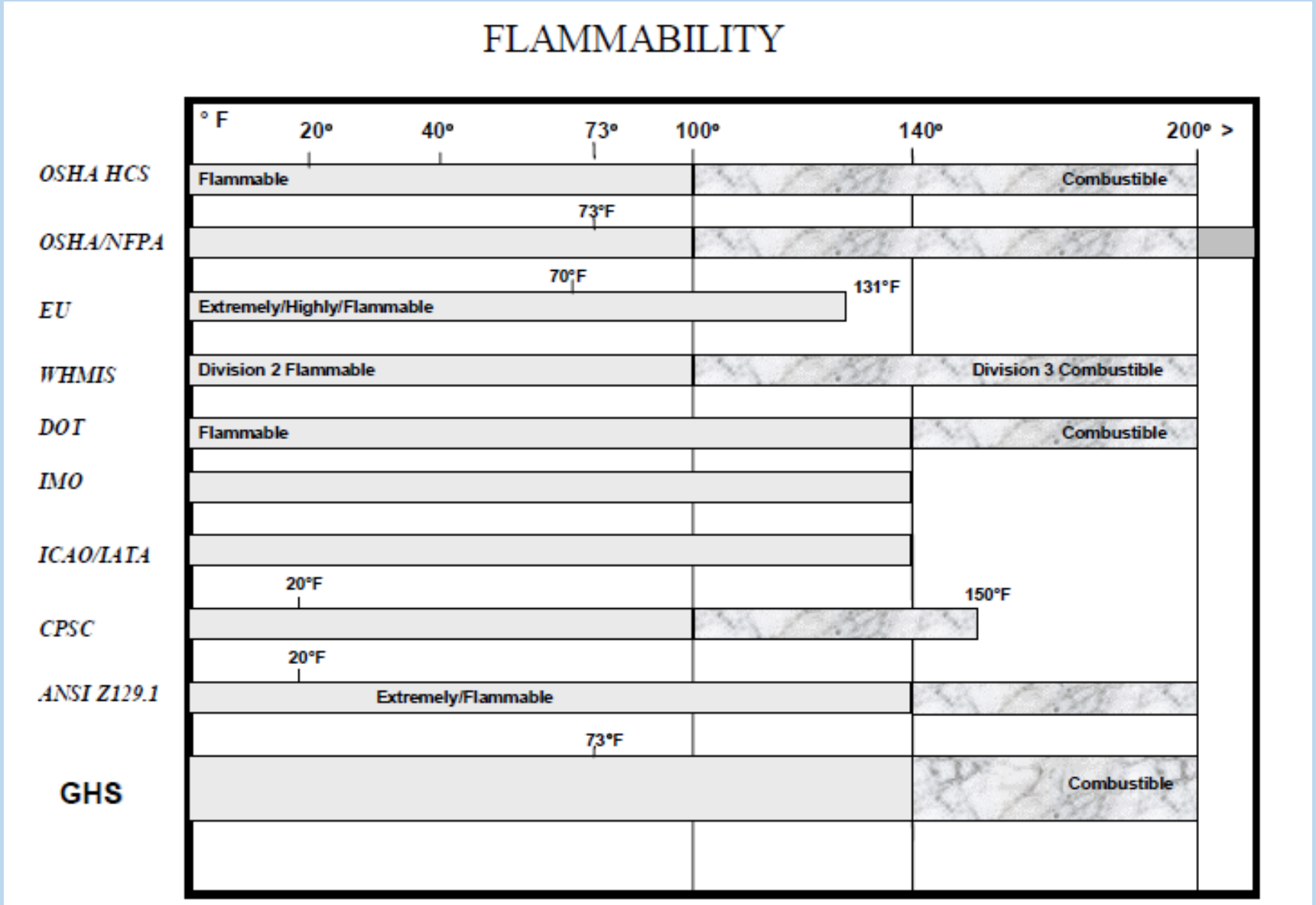
PHYSICAL HAZARD CLASSES

- **1. Explosives**
- **2. Flammability – gases, aerosols, liquids, solids**
- **3. Water-activated Flammable Gases**
- **4. Oxidizers – liquid, solid, gases**
- **5. Self-reactive**

PHYSICAL HAZARD CLASSES

- **6. Pyrophoric – liquids, solids**
- **7. Self-Heating**
- **8. Organic Peroxides**
- **9. Corrosive to Metals**
- **10. Gases under pressure**

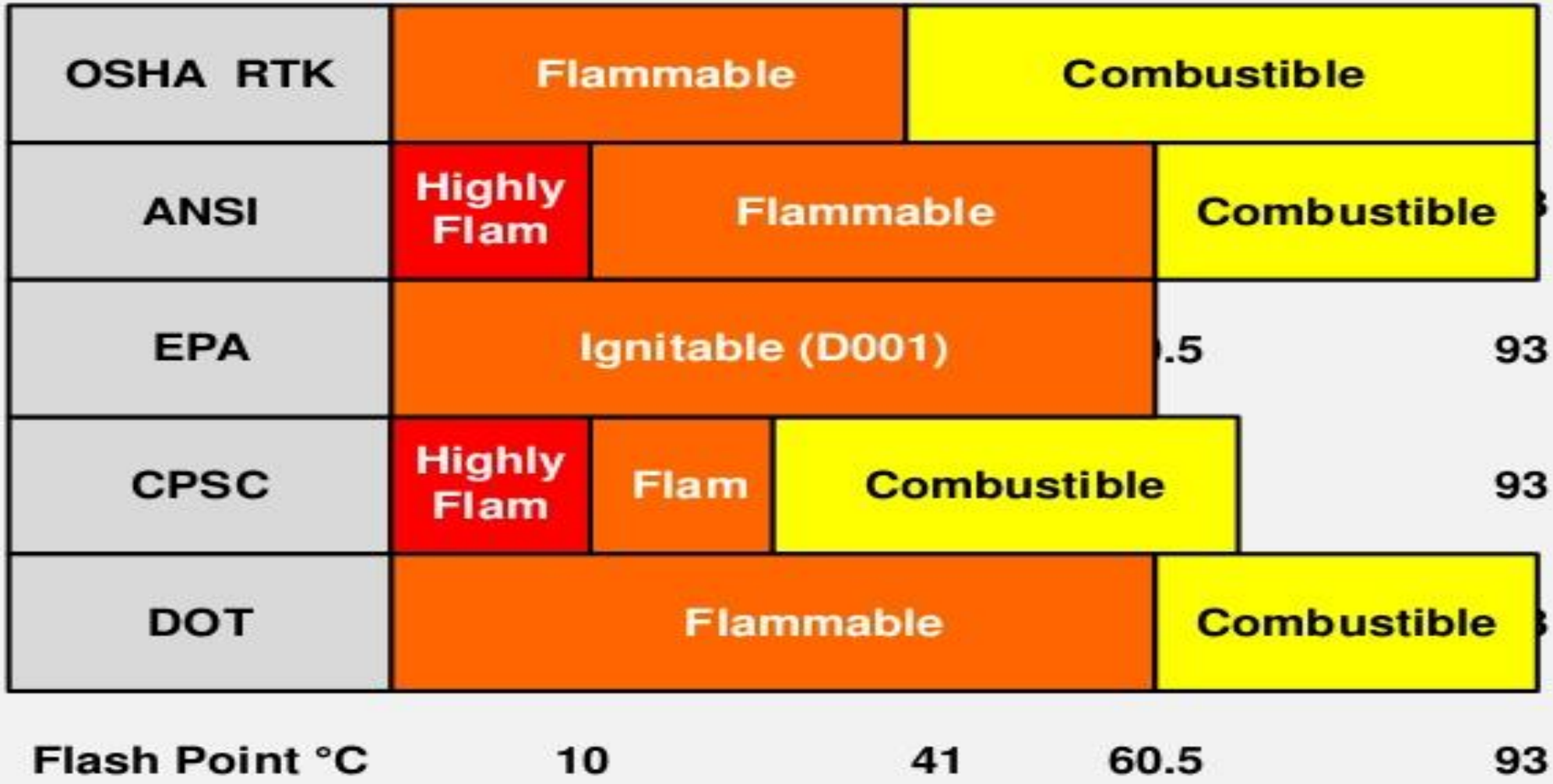
Flammability example



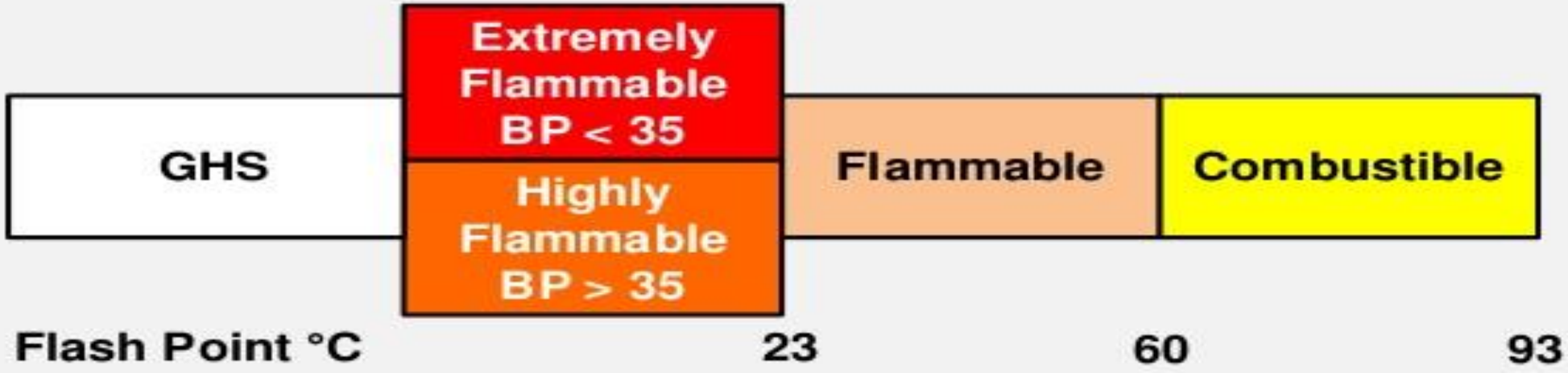
Physical Hazards

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 Compressed Gases Liquefied Gases Refrigerated Liquefied Gases Dissolved Gases	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 Solid	1						
Pyrophoric Gases	Single category						
Self-heating Chemicals	1	2					
Chemicals, which in contact with water, emit flammable gases	1	2	3				
Oxidizing Liquids	1	2	3				
Oxidizing Solids	1	2	3				
Organic Peroxides	Type A	Type B	Type C	Type D	Type E	Type F	Type G
Corrosive to Metals	1						
Combustible Dusts	Single Category						

US – Flammability - Liquids



GHS – Flammability - Liquids



Part 2, Chap 2.6

GHS – Flammability - Liquids

Part 2,
Chap 2.6

Part 3 - Health Hazards

Toxicity
- Acute
- Reproductive
- Target Organ

Carcinogenicity
Mutagenicity
Aspiration
Sensitization

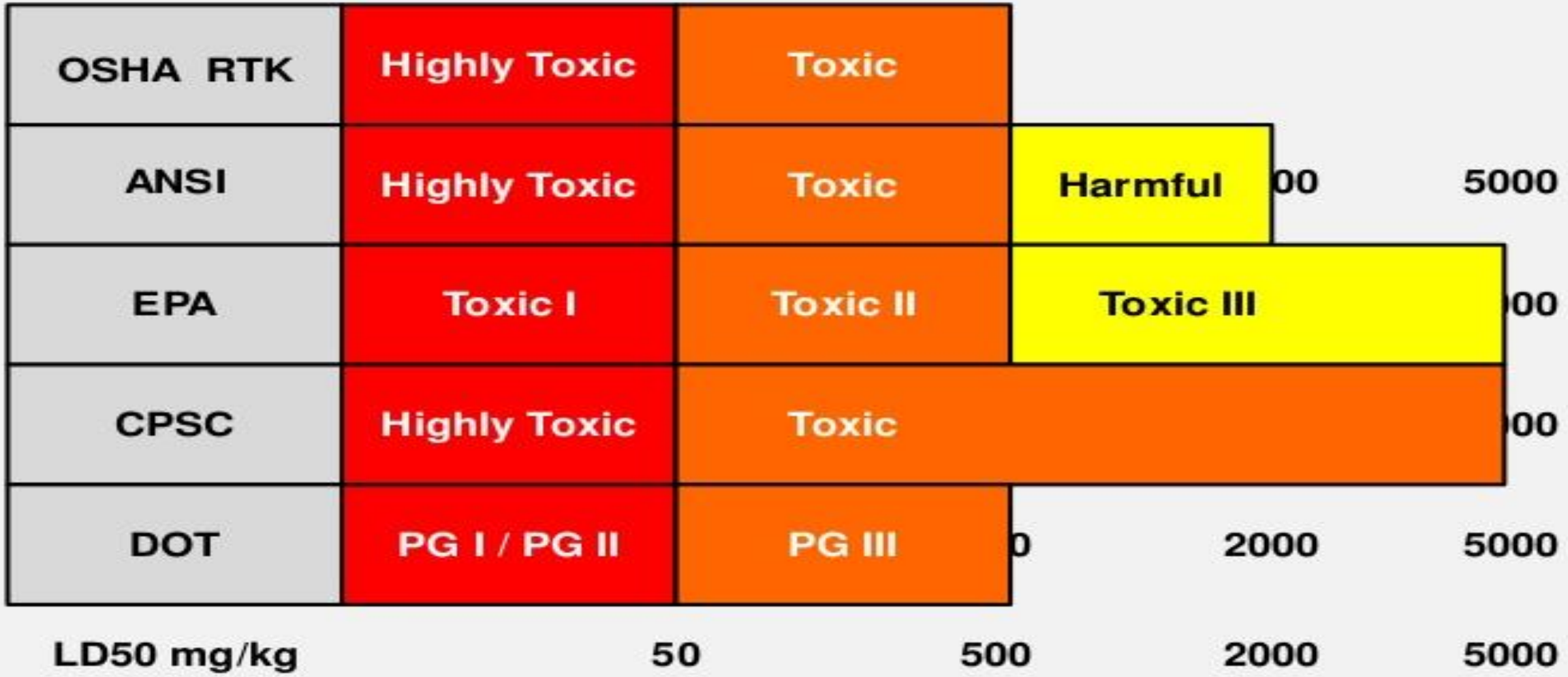
HEALTH HAZARD CLASSES

- **1. Acute toxicity**
- **2. Skin corrosion/irritation**
- **3. Serious Eye Damage/Eye Irritation**
- **4. Respiratory or Skin Sensitization**
- **5. Germ Cell mutagenicity**
- **6. Carcinogenicity**
- **7. Reproductive Toxicity**
- **8. Target Organ Systemic Toxicity**
- **9. Aspiration Hazard**

Health Hazards

Hazard Class	Hazard Category			
Acute Toxicity	1	2	3	4
Skin Corrosion/Irritation	1A	1B	1C	2
Serious Eye Damage/ Eye Irritation	1	2A	2B	
Respiratory or Skin Sensitization	1			
Germ Cell Mutagenicity	1A	1B	2	
Carcinogenicity	1A	1B	2	
Reproductive Toxicity	1A	1B	2	Lactation
STOT – Single Exposure	1	2	3	
STOT – Repeated Exposure	1	2		
Aspiration	1			
Simple Asphyxiants	Single Category			

US – Oral Health Hazards



GHS – Oral Health Hazards

Part 3,
Chap 3.1

Acute Toxicity

ACUTE TOXICITY: INHALATION				
Category 1	Category 2	Category 3	Category 4	Category 5
				No symbol
Danger	**Danger**	**Danger**	**Warning**	**Warning**
Fatal if inhaled	**Fatal if inhaled**	**Toxic if inhaled**	**Harmful if inhaled**	**May be harmful if inhaled**
			**Not required under the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations*.** **Note:** **For gases under the UN Model Regulations, replace the number 6 in the bottom corner of the pictogram by 2.** **For UN Model Regulations pictogram colours:** **Symbol and figure: black.** **Background: white.**	

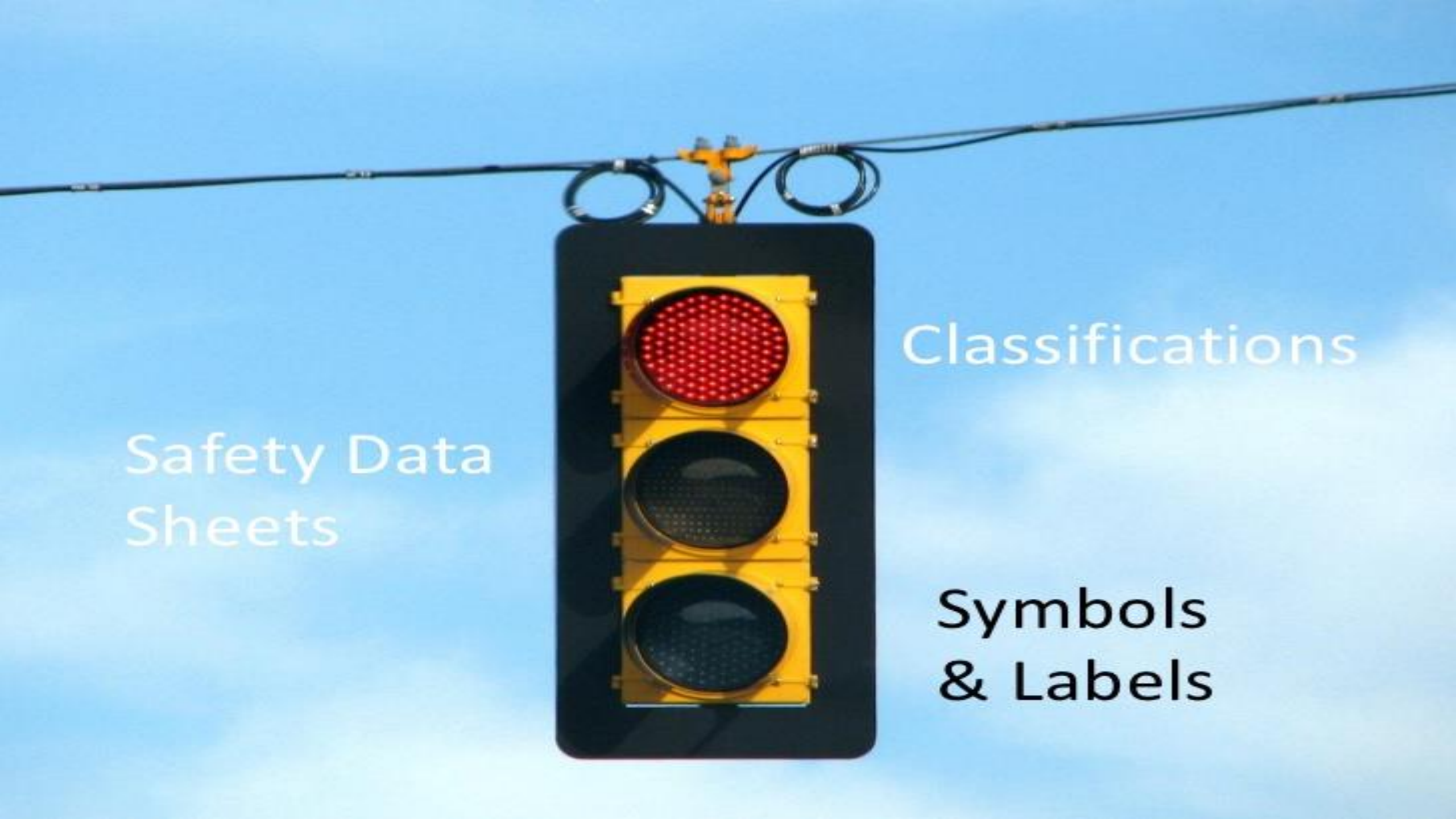
Part 4 - Environmental Hazards

4.1 Effects Aquatic

Hazardous to Aquatic Environment

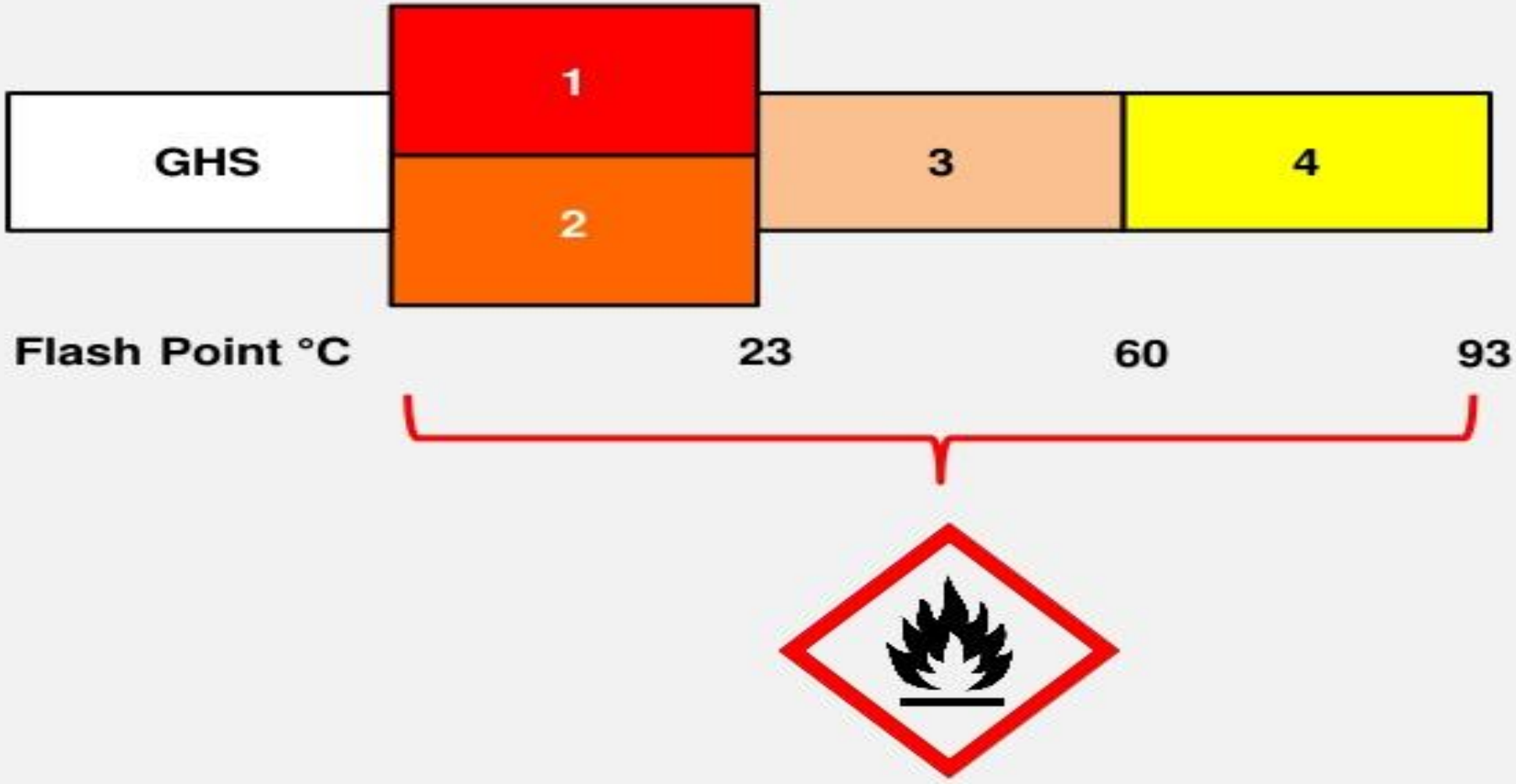
4.2 Effects Ozone

Hazardous to the Terrestrial Environment (in progress)

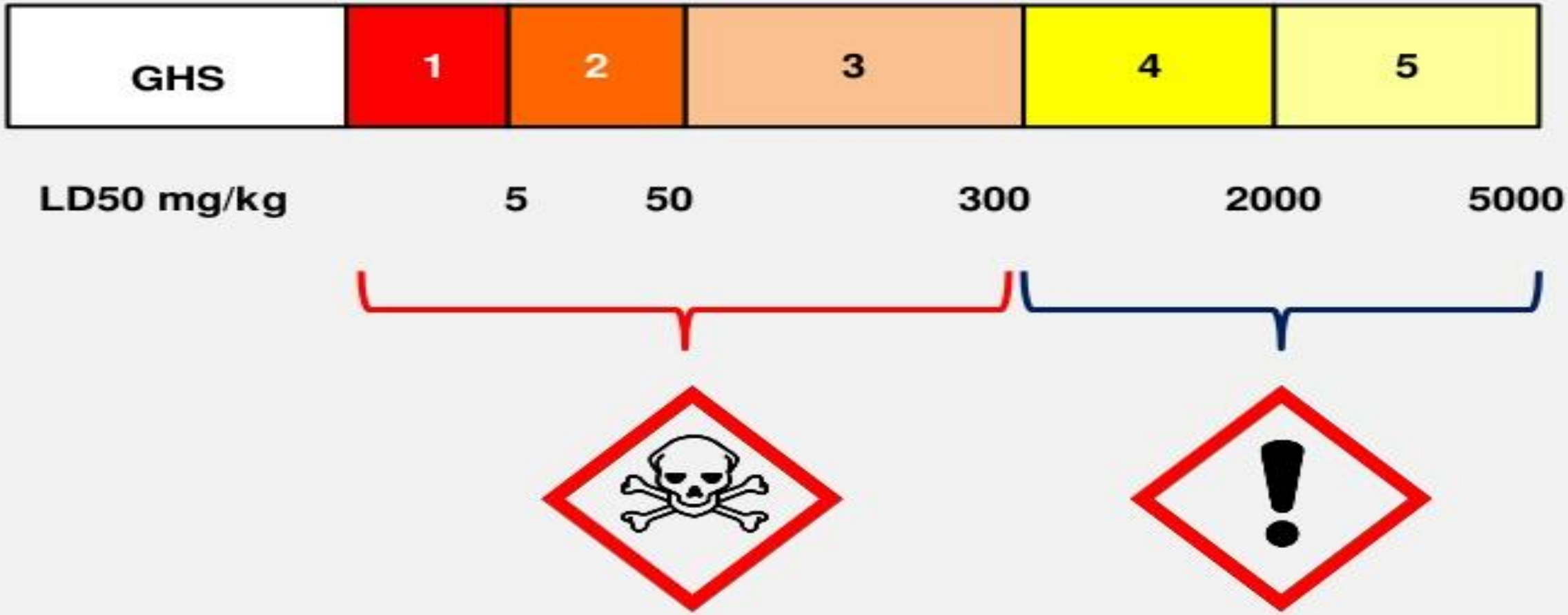

Classifications
Safety Data Sheets
Symbols & Labels

GHS Symbols

GHS – Flammability - Liquids



GHS – Oral Health Hazards

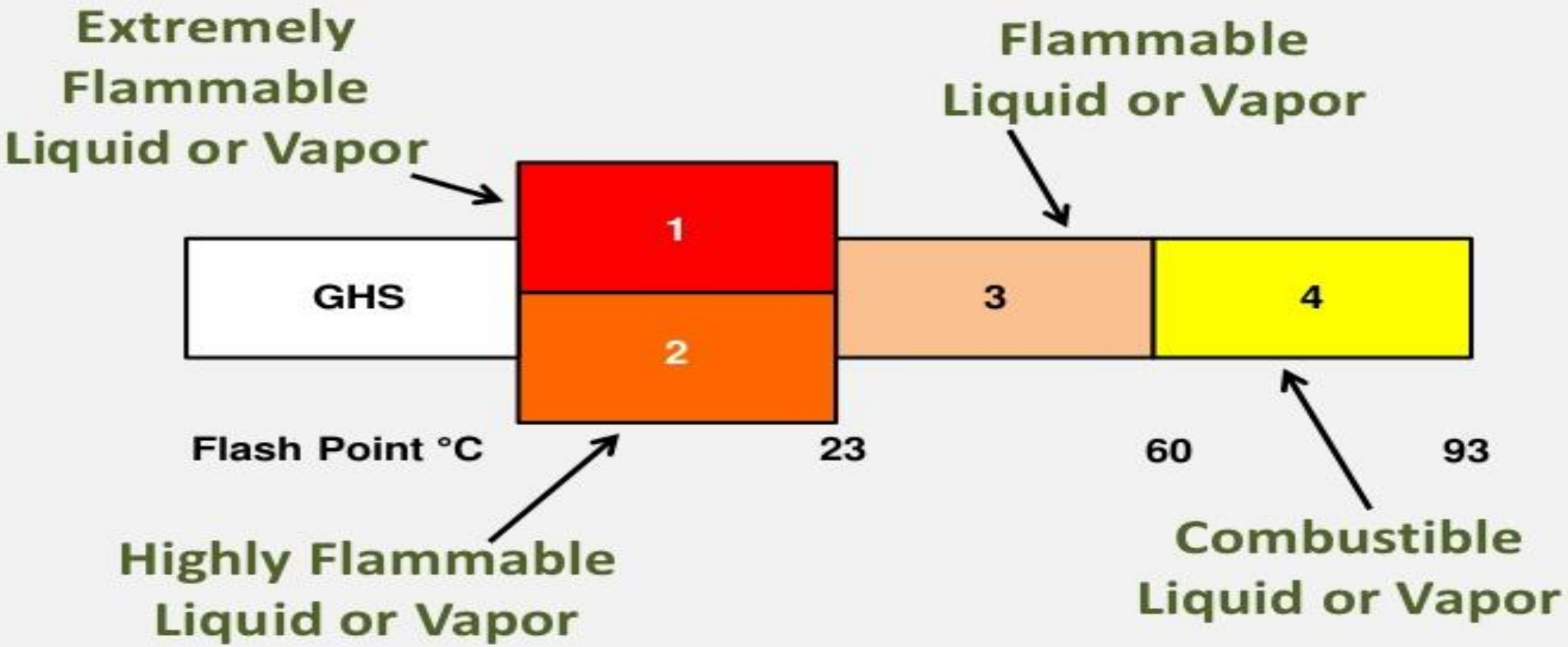



Signal
Words
Warning
Danger

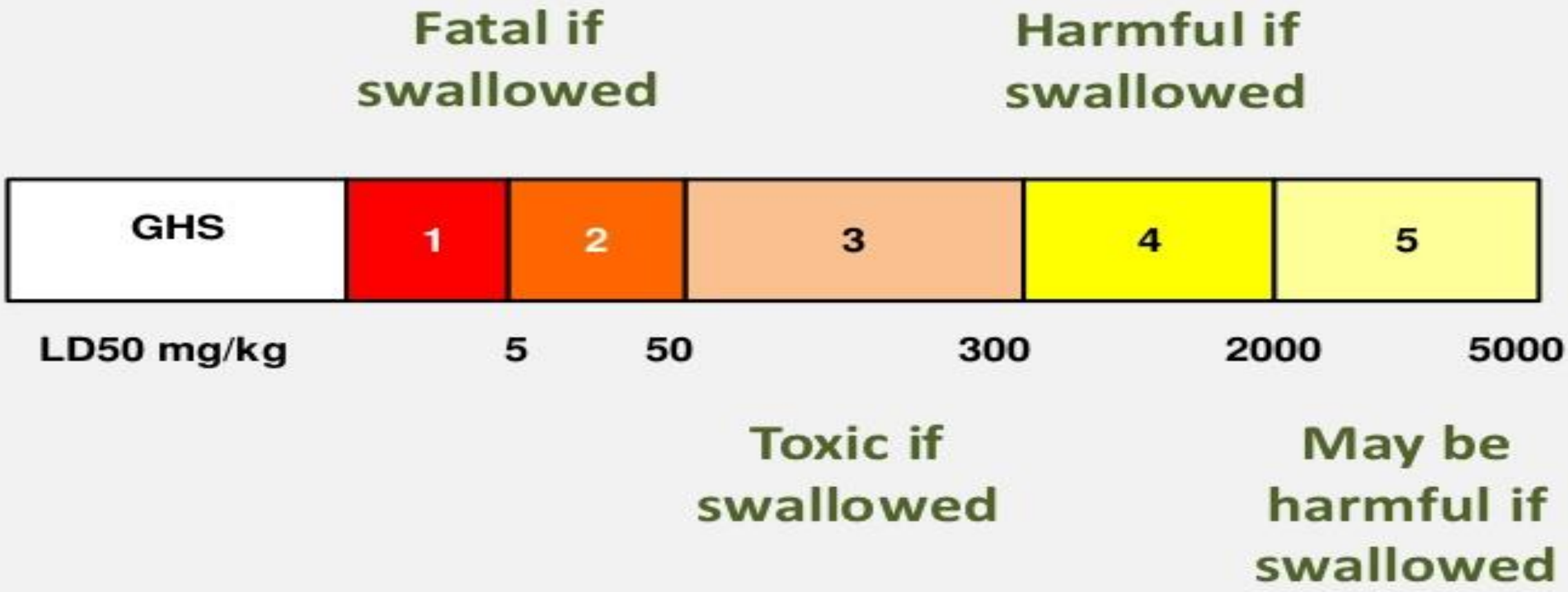
GHS - Flammability - Liquids

GHS – Oral Health Hazards

GHS - Flammability - Liquids



GHS – Oral Health Hazards



Let's

BUILD

A Label

1.4.10.5.2

(d)

Product ID

(d)

(c)

Symbols

(d)

(a)

Signal Words

(c)

Hazard Statements

(d)

(a)

(c)

(b)

What's that thingy ?

Annex 3, Section 2

(d)

(a)

Supplier

(c)

(b)

(e)

Precautionary Statements

Prevention

Response

Storage

Disposal

Annex 3,
Section 2

Precautionary Statements

P210 – Keep away from heat/sparks/open flames/hot surfaces. – No Smoking

P240 – Ground/Bond container and receiving equipment

Plus 10 more

Precautionary Statements

Xylene

Xylene, Ethyl Benzene , Toluene

Warning

Flammable Liquid or Vapor

Keep away from heat/sparks/open flames/hot surfaces. – No Smoking
Ground/Bond container and receiving equipment

XYZ Inc, 123 ABC St, Here, NJ 07105
973-555-5555

1.4.10.5.2
(d) ii

Add in lawyer like stuff

Liability

First Aid

Duty to Warn

Commercial Grade Xylene

Component	%
Xylene	80
Ethyl Benzene	19
Toluene	1

Almost done...

1.4.10.5.2
(d) ii

Plus if in NJ…

CAS # Required

Classifications Part 2

Safety Data Sheets

Symbols & Labels

Mixture Properties

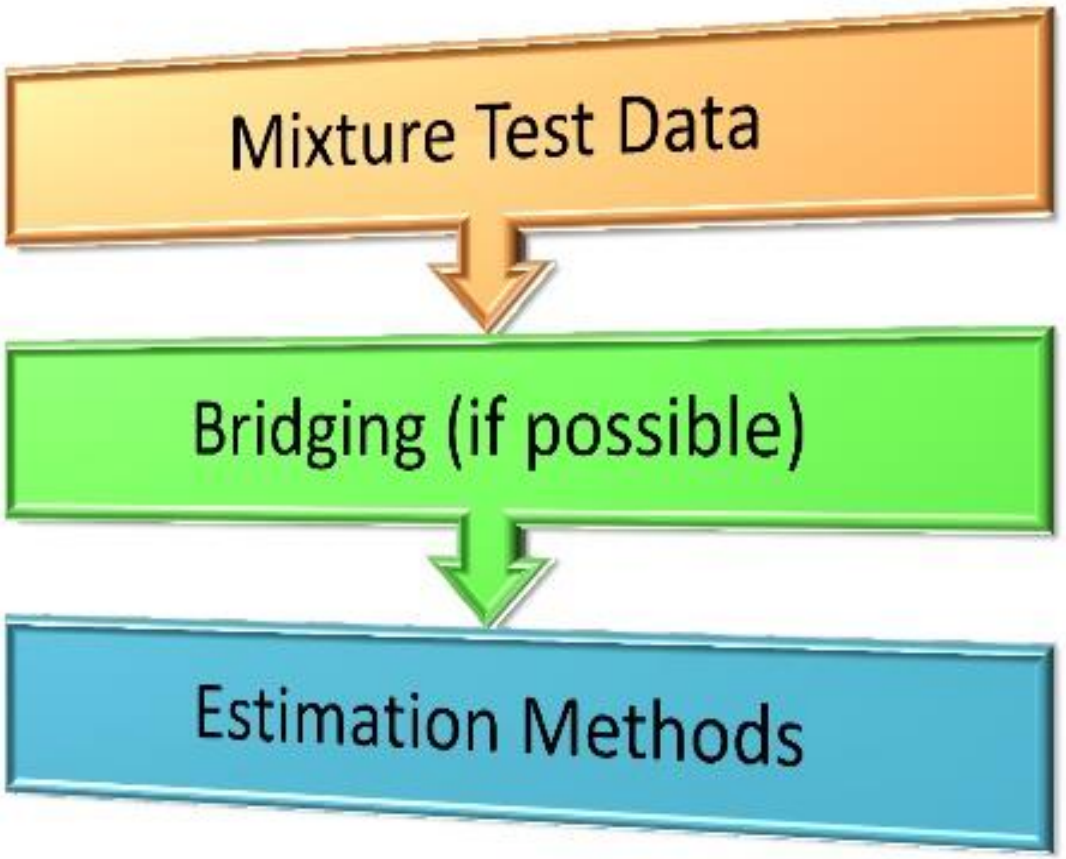
How to Classify Mixtures for the GHS:

Test data for that mixture is used when available.

If no test data exists, bridging principles can be applied

Bridging principles work by taking the available test data for the substances and/or ingredients that make up the mixture, and using it to classify the mixture

If no test data exists, and bridging principles will not work, then each hazard in the official GHS book has information on estimating the hazard of a mixture



And let's not forget

Hazard	Xylene	Ethyl Benzene	Toluene
Acute Aquatic Toxicity	2	1	3
Chronic Aquatic Toxicity *	2	3	3
Algae (NOEC mg/l)	0.44	3.3	10

Chronic Aquatic Toxicity

≠

Need the same critters

Hazard	Category
Flammable Liquid	3
Acute Toxicity (Oral)	5
Acute Toxicity (Inhalation – Vapors)	4
Acute Toxicity (Dermal)	4
Skin corrosion / irritation	2
Serious Eye Damage / Eye Irritation	2
Specific Target Organ Toxicity - Single Exposure (Central Nervous System)	1
Single Exposure (Respiratory Irritation)	3
Repeated Exposure (Central Nervous System)	1
Carcinogenicity	2
Toxicity for Reproduction	2
Aspiration	1
Acute Aquatic Toxicity	2
Chronic Aquatic Toxicity	3

Total Hazard Classes

1

10

2

Hazard Statements

Xylene

Flammable
Liquid or Vapor

Hazard Statements

Xylene

Suspected of causing cancer

Suspected of damaging fertility or the unborn child

Causes damage to central nervous system

Causes damage to central nervous system, respiratory system through repeated exposures

May be fatal if swallowed and enters airways

Hazard Statements

Xylene

Harmful if Inhaled

Cause serious eye irritation

Causes skin irritation

May be harmful if swallowed

May cause drowsiness or dizziness

Toxic to Aquatic Life

Harmful to aquatic life with long lasting effects

Precedence – Signal Words

Warning

Danger Warning

Warning

Only 2 signal words will appear:

- **“DANGER”**(more severe hazard)
- **“WARNING”** (less severe hazard)

Precedence – Signal Words

Danger

1.4.10.5.3.2

Seems like a lot of “stuff”

13 Hazard Statements just for Xylene

On 55 Gallon Drum...

... no problem

DOT vs. GHS
1.4.10.5.1

Enough room on 1 gallon cans ?


Just to read
the label

06.2500 30.04.12 2.5 l

...SO,Reag. Ph Eur

...oroform

...alysis

...oforme

...ntormio

...oformo

...ntormio

MERCK

IMO: CHLOROFORM
ICAO: CHLOROFORM

Warning. Suspected of causing cancer. Toxic ... prolonged or repeated exposure. Causes skin ... water. Get medical advice/attention if you feel ... specific industrial processes (76/769/EEC).

Achtung. Kann vermutlich Krebs erzeugen. ... Organe schädigen bei längerer oder wiederholter ... KONTAKT MIT DER HAUT: Mit viel Wasser ab... einholen/ärztlichen Hilfe hinzuziehen. * Nur ... Industrieverfahren (76/769/EWG).

Attention. Susceptible de provoquer le cancer. ... graves pour les organes à la suite d'expositions ... irritation cutanée. EN CAS DE CONTACT AVEC ... Consulter un médecin en cas de malaise. * ... ou des processus industriels spécifiques (76/769/CEE).

Attenzione. Sospettato di provocare cancro. ... in caso di esposizione prolungata o ripetuta. ... CON LA PELLE: lavare abbondantemente con ... medico. * Solo per ricerca, analisi, usi ...

Atención. Se sospecha que provoca cáncer. ... en los órganos tras exposiciones prolongadas o ... CONTACTO CON LA PIEL: Lavar con abundante ... malestar. * Solamente para investigación, análisis ... (76/769/CEE).

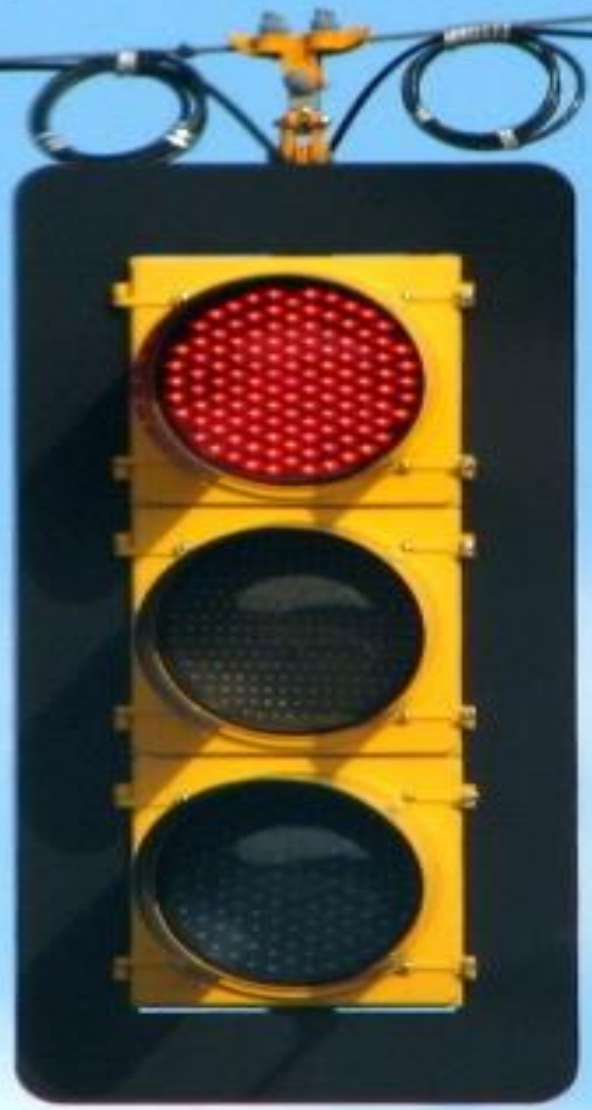
Atenção. Suspeito de provocar cancro. Tóxico ... prolongada ou repetida. Provoca irritação cutânea. ... com sabonete e água abundantes. Em caso de ... pesquisa, desenvolvimento, análise e ...

Waarschuwing. Vermoedt kan kanker ... aan organen veroorzaken bij langdurige of herhaalde ... CONTACT MET DE HUID: met veel water afwassen. ... * Uitsluitend voor onderzoek, ontwikkeling, ...

What about Sample Jars ?

Workplace Labeling
1.4.10.5.5.1

Standardize



Classifications

Safety Data Sheets

Symbols & Labels

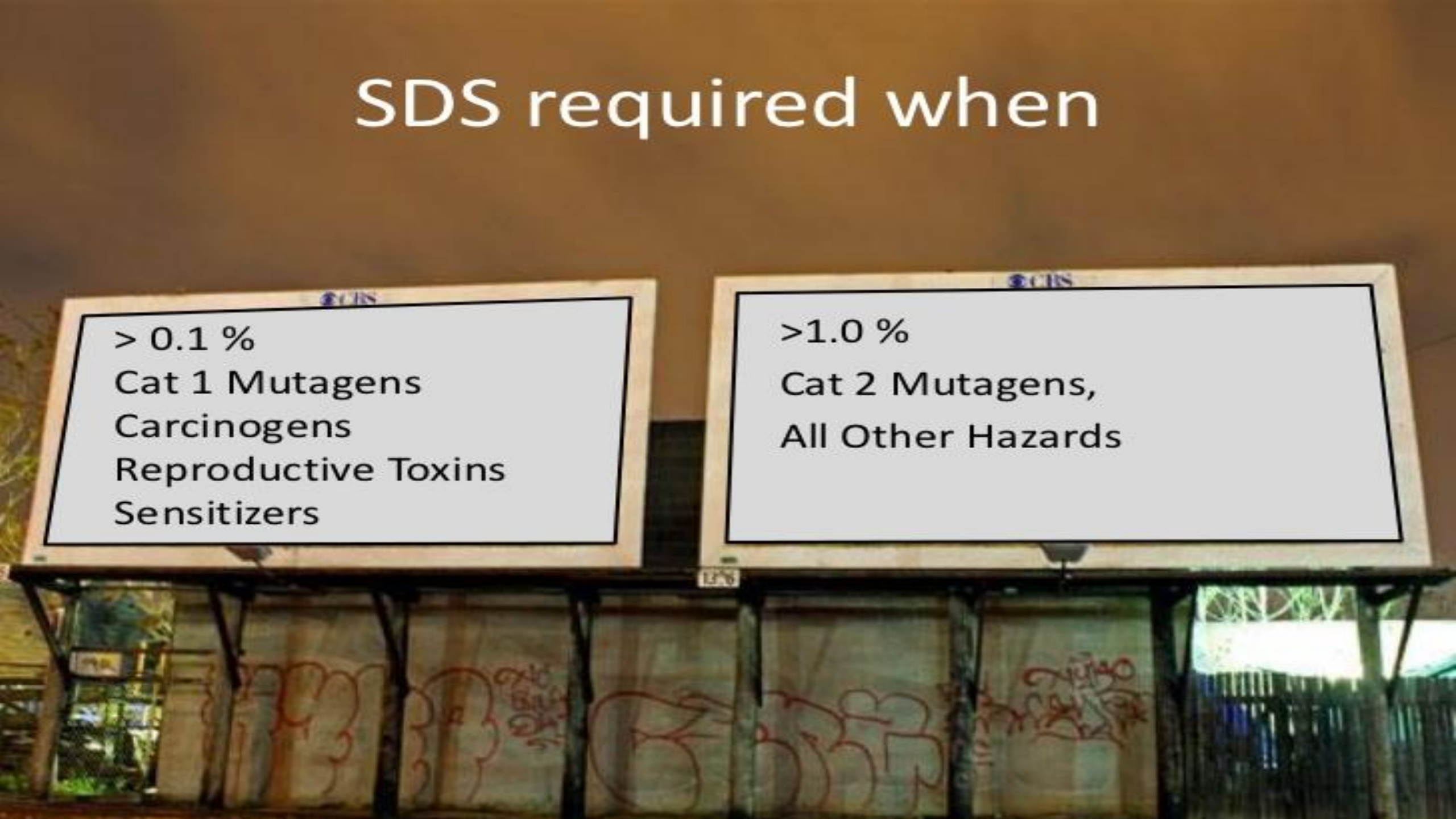
Safety Data Sheet Impact

- The performance orientation of HazCom's MSDS will need to be changed.
  - Use ANSI Z400.1 as template
- HazCom/GHS requires a 16 section MSDS format with specified sequence and minimum required contents.
  - OSHA will not enforce elements 12-15 because deal with transport, environmental issues outside jurisdiction
- The level of hazardous components can be given as ranges or concentrations - the values for component disclosure in mixtures vary by end point. Therefore, some changes will be needed for component disclosure.

Appendix D – SDS Requirements

1.Identification of the substance or mixture and of the supplier
2.Hazards identification
3.Composition/information on ingredients Substance/Mixture
4.First aid measures
5.Firefighting measures
6.Accidental release measures
7.Handling and storage
8.Exposure controls/personal protection.
9.Physical and chemical properties
10.Stability and reactivity
11.Toxicological
12.Ecological information (non mandatory)
13.Disposal considerations (non mandatory)
14.Transport information (non mandatory)
15.Regulatory information (non mandatory)
16.Other information including information on preparation and revision of the SDS

SDS required when



Very similar to ANSI

Table 1.5.2

1.	ID of Chemical and Supplier
2.	Hazards identification
3.	Composition/information on ingredients
4.	First aid measures
5.	Firefighting measures
6.	Accidental release measures
7.	Handling and storage
8.	Exposure controls/personal protection
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 - preparation or revisions

1. Substance ID & Supplier

Danger

Plus all of the hazard and precautionary statements

2. Hazard ID


Plus all of…. ??
13 Hazards
61 Precautions
Who decides which ones ?


Probably
these guys!

3. Composition

80% Xylene (1330-20-7)
19% Ethyl Benzene (100-41-4)
1% Toluene (108-88-3)

Trade Secrets

Chemical ID and % composition

Must prove it

4. First Aid

Routes of entry
Acute / Chronic
symptoms

5. Firefighting

LEL, etc.
not here

Decomposition
Products

6. Accidental Release Measures

7. Handling & Storage

8. Controls & PPE

TLVs, PELs

9. Physical and Chemical Properties

10. Stability & Reactivity

11. Toxicological

12. Ecological

Bioaccumulate
Mobility, Persistence


13. Disposal

14. Transport

UN Number
Proper Shipping Name

15. Regulatory

SARA Title III

State Regs

Effects on Users

Employee Training

SDSs

Labels

Modify Plan


Unlabeled ?
Stop it at
the dock


Effects on Producers
Employee Training
Hazard Classification
SDS & Labeling

No NEW Testing Needed

Effects on Consumers

New Labels

New Symbols

OSHA Added

Pyrophoric Gases

Simple Asphyxiates

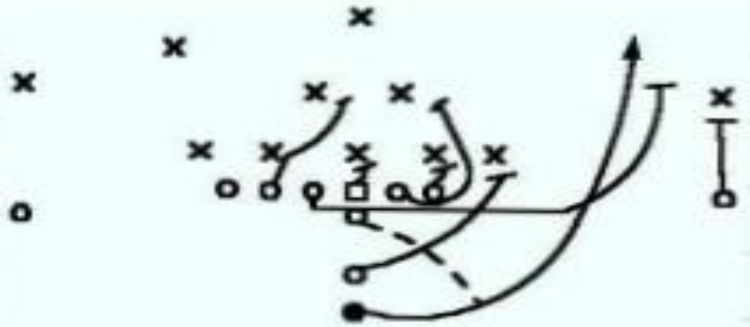
No rankings, but signal words and precautionary statements

OSHA Added

Combustible Dust

Unclassified Hazards

Classifications ??



OSHA's Playbook

Doesn't Want

Acute Tox -

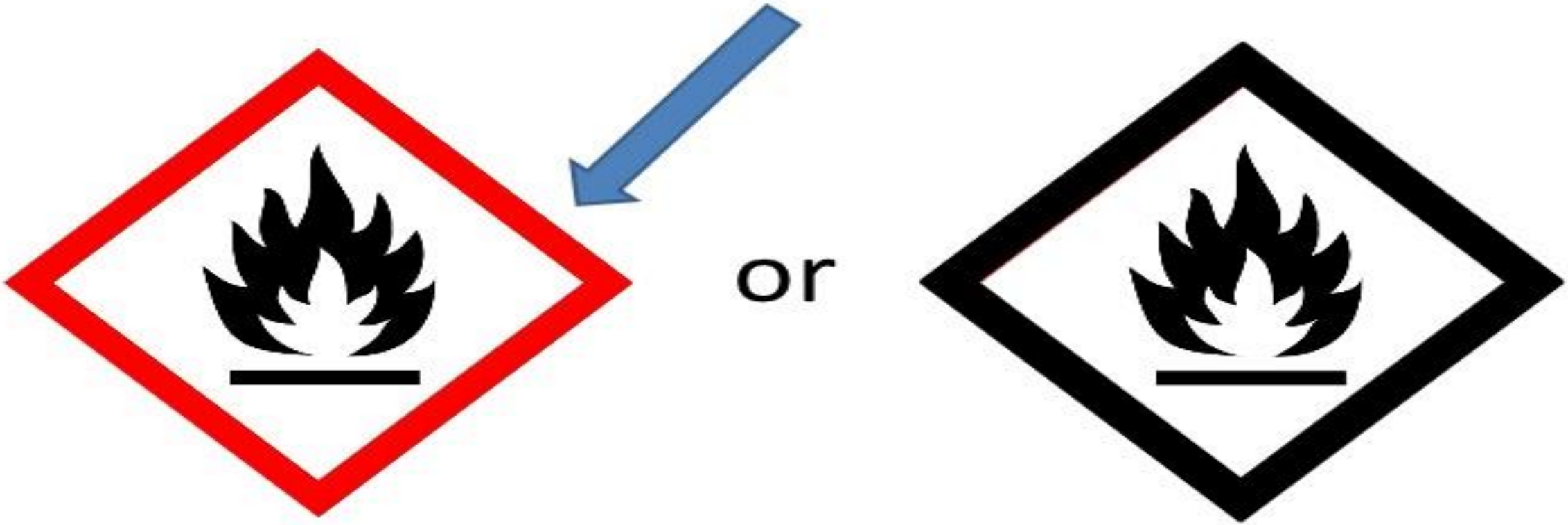
Oral , Dermal &

Inhalation – Cat 5

Skin Corr/Irr – Cat 3

Aspiration – Cat 2

OSHA Picked



Sigh, a color printer needed

Oh and...

...no blank red diamonds

NFPA®

~~0 to 4~~

5 to 1


Just when you thought it was safe.... more stuff will be coming...
STOP
CROSSING GUARD

Flammable Liquids


CAUTION!
ZOMBIES!
AHEAD!!!

Caution:

Zombies may be Flammable

GHS Hazard Communication

- Labels
  - Nine symbols
    - Includes "Environment"

Flame over circle	Flame	Exploding bomb
		
• Oxidizers	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self Reactives • Organic Peroxides	• Explosives • Self Reactives • Organic Peroxides
Skull and crossbones	**Corrosion**	**Gas cylinder**
		
• Acute toxicity (severe)	• Corrosives	• Gases under pressure
Health Hazard	**Environment**	**Exclamation mark**
		
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Aquatic Toxicity	• Irritant • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic effects • Respiratory Tract Irritation • Hazardous to Ozone Layer

Labels: Pictograms – Health Hazards

Acute toxicity (Severe)

Acute toxicity (Less Severe):
Irritant
Dermal sensitizer
Acute toxicity (harmful)
Narcotic effects
Respiratory tract irritation

Labels: Pictograms – Health Hazards (continued)

Skin corrosion
Serious eye damage/
Eye irritation

Carcinogen
Respiratory sensitizer
Reproductive toxicity
Target organ toxicity
Mutagenicity
Aspiration Hazard

Labels: Pictograms – Physical Hazards

Flammables
Self reactives
Pyrophorics
Self heating
Emits flammable gas
Organic peroxides

Labels: Pictograms – Physical Hazards (continued)

Corrosive to Metals

Oxidizer

Gases under Pressure

Hazard Communication:

Foundation of Workplace Chemical Safety Programs

The Globally Harmonized System for Hazard Communication

Background

In 2003, the United Nations (UN) adopted the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The GHS includes criteria for the classification of health, physical and environmental hazards, as well as specifying what information should be included on labels of hazardous chemicals as well as safety data sheets. The United States was an active participant in the development of the GHS, and is a member of the UN bodies established to maintain and coordinate implementation of the system. The official text of the GHS can be found on the UN web page.

OSHA GHS Proposal

OSHA published a proposed rulemaking on September 30, 2009 to align OSHA's Hazard Communication standard (HCS) with the GHS. [Also available as an 11 MB PDF, 271 pages] This is a significant step in the rulemaking process. OSHA has provided a 90-day comment period ending on December 29, 2009. Informal public hearings will follow. OSHA will publish a hearing notice in the Federal Register with details on dates and location(s).

To aide in the understanding of the HCS proposal OSHA is providing additional information:

Proposed HCS regulatory text [63 KB PDF*, 30 pages]
Proposed Appendix A: Health Hazard Criteria (Mandatory) [347 KB PDF*, 68 pages]
Proposed Appendix B: Physical Hazard Criteria (Mandatory) [130 KB PDF*, 28 pages]
Proposed Appendix C: Allocation of Label Elements (Mandatory) [350 KB PDF*, 75 pages]
Proposed Appendix D: Safety Data Sheets (Mandatory) [53 KB PDF*, 3 pages]
Proposed Appendix E (Existing Appendix D): Definition of Trade Secret (Mandatory) [21 KB PDF*, 2 pages]
Proposed Appendix F: Guidance for Hazard Classifications Regarding Carcinogenicity (Non-Mandatory) [62 KB PDF*, 4 pages]
Proposed HCS regulatory text (redline strikeout) [261 KB PDF*, 38 pages]
Side-by-side comparison of the current HCS to the Proposed Rule [327 KB PDF*, 45 pages]
Facts on Aligning the Hazard Communication Standard to the GHS

OSHA GHS Advance Notice of Proposed Rulemaking

In May 2005, The Agency added to its regulatory agenda consideration of rulemaking to revise the HCS to align its requirements with the GHS. As the first step in that rulemaking process, OSHA published an advance notice of proposed rulemaking (ANPR) on September 12, 2006. [Also available as a 3 MB PDF, 11 pages.]

The ANPR explains the history of the development of the GHS, including OSHA's involvement in the process. It also indicates how alignment with the GHS would affect the requirements of the HCS, and asks a series of questions to allow the public an opportunity to provide input. The comment period closed on November 13, 2006. Comments submitted are available on OSHA's web page under the e-docket section. The Docket Number is H022K. This October 2006 Powerpoint presentation (162 KB PPT, 51 slides) provides more information about the ANPR, the impact of the GHS on the HCS, and other implementation issues.

In addition to the ANPR, OSHA has prepared a Guide to the GHS to provide interested stakeholders a substantive discussion of the system's requirements. [Also available as a 775 KB PDF, 90 pages.]

Federal OSHA Resources

Haz Com Web Page - www.osha.gov/dsg/hazcom/index.html

Regulatory

- Haz Com 2012 Final Rule
- Haz Com Comparison: Haz Com 1994 and 2012
  - Side-by-side
  - Redline Strikeout of the Regulatory Text
- FAQs

Guidance

- OSHA Briefs
- Fact Sheet
- Quick Cards
  - Labeling
  - Safety Data Sheets
  - Pictograms
  - Effective Dates
- OSHA Guide to GHS

www.osha.gov/dsg/hazcom/ghs.html

- GHS documents (links to purple book)

Resources

- GHS Websites
  - OSHA, http://www.osha.gov/dsg/hazcom/global.html
  - EPA, http://www.epa.gov/oppfead1/international/globalharmon.htm
  - DOT http://www.phmsa.dot.gov/hazmat/regs/international
  - CSPC, http://www.cpsc.gov/phth/GHSpolicy.html
  - UN, http://www.unece.org/trans/danger/publi/ghs/ghs_rev02/02files_e.html
- Government Printing Office
  - http://www.gpoaccess.gov/
- OSHA comments
  - Docket No. OSHA-H022K- 2006-0062 at http://www.regulations.gov

Conclusion

- Training of workers can begin immediately
- As new products are ordered, make sure to keep SDSs in new formats
- Companies that manufacture products will have to conform to both employer and manufacturer provisions of revised HazCom rule
- Litigation is possible over inclusion of “hazards not otherwise classified,” and combustible dust … could delay effective dates but best to prepare for dates listed.

Conclusion

Overall benefits of globally harmonized system:

- Promotes safer transportation, handling and use of chemicals;
- Improves understanding of hazards;
- Increases compliance and reduces costs for companies involved in international activities;
- Helps protect workers, consumers and potential exposed populations around the globe.

Bottom Line: A new OSHA HazCom standard is inevitable . . . Plan ahead!

Final Steps to complete training

Supplemental Training (to be provided by employer)

Employers must provide employees with the details of the facility specific hazard communication program:

- Location and availability of written program and SDSs
- Specific information related to chemicals in the facility:
  - Physical Hazards;
  - Health Hazards;
  - Hazards not otherwise classified.

Final Steps (continued)

Supplemental Training (to be provided by employer)

- Chemical list, location and use of hazardous chemicals
- Secondary container labeling system
- Specific procedures to follow to protect employees from the chemical hazard
- Methods used to detect the presence or release of hazardous chemicals (sensor alarms, odors, visual other monitoring devices)

Questions

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