

Global Harmonization System

Hazardous Communications

HAZCOM

Labels, Placards & Safety Data Sheet (SDS)

Labeling



Allows the Ability to Identify the Hazardous Materials.

LABELING REQUIREMENTS

- The GHS requires each container of hazardous materials coming into and/or leaving the workplace must be labeled with:
 - Name, Address and Telephone Number of the manufacture/exporter
 - Product Identifier - chemical name (trade name(s), if applicable)
 - Signal Word:
 - used to indicate the severity of the hazard
 - only two words used as signal words - “Danger” & “Warning”
 - Hazard Statement(s):
 - describe the nature of the hazard(s) of a chemical
 - examples: “Causes damage to kidneys” or “Repeated exposure can cause...”
 - Precautionary Statement(s):
 - describe recommended measures that should be taken to minimize or prevent adverse effects from exposure
 - examples: “Keep away from heat” or “Keep only in original container”
 - Pictograms
- **Note: *If any of these pieces of information is missing from the label, that material should not be allowed in the workplace and/or accepted into the facility.***

GHS Pictograms



FLAMMABLE



CORROSIVE



EXPLOSIVE



**COMPRESSED
GAS**



OXIDIZING



TOXIC



**HEALTH
HAZARD**



**HARMFUL/
IRRITANT**



**DANGEROUS FOR
THE ENVIRONMENT**

NFPA Label

HEALTH HAZARD

- 4 - Deadly
- 3 - Extreme Danger
- 2 - Hazardous
- 1 - Slightly Hazardous
- 0 - Normal Material

FIRE HAZARD

- Flash Points
- 4 - Below 73° F
 - 3 - Below 100° F
 - 2 - Below 200° F
 - 1 - Above 200° F
 - 0 - Will Not Burn

Acid.....ACID

Alkali.....ALK

Corrosive.....COR

Oxidizer.....OX

Radiation Hazard...☢

Use No Water....☞

SPECIFIC HAZARD

- 4 - May Detonate
- 3 - Shock and Heat
May Detonate
- 2 - Violent Chemical
Change
- 1 - Unstable if Heated
- 0 - Stable

INSTABILITY HAZARD

NFPA Container Label

Chemical Name

HEALTH HAZARD

- 4 - Deadly
- 3 - Extreme Danger
- 2 - Hazardous
- 1 - Slightly Hazardous
- 0 - Normal Material

FIRE HAZARD

- Flash Points
- 4 - Below 73° F
 - 3 - Below 100° F
 - 2 - Below 200° F
 - 1 - Above 200° F
 - 0 - Will Not Burn

CHECK OFF APPROPRIATE BOXES

ROUTE OF ENTRY

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> INHALATION | <input type="checkbox"/> SKIN ABSORPTION |
| <input type="checkbox"/> INGESTION | <input type="checkbox"/> SKIN OR EYE CONTACT |

HEALTH HAZARD

- | | |
|---|-------------------------------------|
| <input type="checkbox"/> NO HEALTH HAZARD | <input type="checkbox"/> IRRITANT |
| <input type="checkbox"/> TOXIC | <input type="checkbox"/> CORROSIVE |
| <input type="checkbox"/> HIGHLY TOXIC | <input type="checkbox"/> SENSITIZER |
| <input type="checkbox"/> REPRODUCTIVE TOXIC | <input type="checkbox"/> CARCINOGEN |

PHYSICAL HAZARD

- | | |
|---|--|
| <input type="checkbox"/> NO PHYSICAL HAZARDS | <input type="checkbox"/> PYROPHORIC |
| <input type="checkbox"/> COMBUSTIBLE LIQUIDS | <input type="checkbox"/> ORGANIC PEROXIDE |
| <input type="checkbox"/> COMPRESSED GAS | <input type="checkbox"/> WATER REACTIVE |
| <input type="checkbox"/> OXIDIZER | <input type="checkbox"/> UNSTABLE (REACTIVE) |
| <input type="checkbox"/> FLAMMABLE GAS | |
| <input type="checkbox"/> FLAMMABLE LIQUID/SOLID | |

TARGET ORGANS & EFFECTS

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> LUNGS | <input type="checkbox"/> CENTRAL NERVOUS SYSTEM |
| <input type="checkbox"/> HEART | <input type="checkbox"/> CARDIOVASCULAR SYSTEM |
| <input type="checkbox"/> KIDNEY | <input type="checkbox"/> MUCOUS MEMBRANE |
| <input type="checkbox"/> EYES | <input type="checkbox"/> AUTONOMIC NERVOUS SYSTEM |
| <input type="checkbox"/> SKIN | <input type="checkbox"/> RESPIRATORY SYSTEM |
| <input type="checkbox"/> PROSTATE | <input type="checkbox"/> MUTAGEN |
| <input type="checkbox"/> BLOOD | <input type="checkbox"/> TERATOGEN |
| <input type="checkbox"/> LIVER | |

Acid.....ACID

Alkali.....ALK

Corrosive.....COR

Oxidizer.....OX

Radiation Hazard...☢

Use No Water....W

SPECIFIC HAZARD

- 4 - May Detonate
- 3 - Shock and Heat May Detonate
- 2 - Violent Chemical Change
- 1 - Unstable if Heated
- 0 - Stable

INSTABILITY HAZARD

HMIS LABELING SYSTEM

HMIS® HMIS® HMIS® HMIS® HMIS® HMIS® HMIS®

HMIS®
ACETONE

HEALTH  **1**

FLAMMABILITY **4**

PHYSICAL HAZARD **2**

PERSONAL PROTECTION **B**


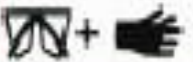



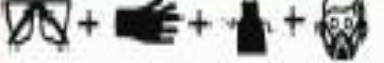



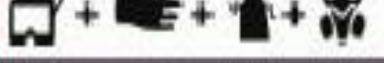
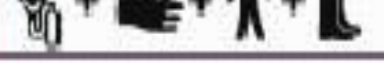
Emergency Overview:
DANGER! EXTREMELY FLAMMABLE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

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HMIS® HMIS® HMIS® HMIS® HMIS® HMIS® HMIS®

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

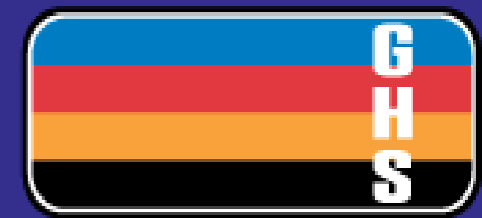
HMIS®

HAZARD INDEX		PERSONAL PROTECTION INDEX	
4 = SEVERE HAZARD	An asterisk(*) or other designation corresponds to additional information on a data sheet or separate chronic effects notification	A	
3 = SERIOUS HAZARD		B	
2 = MODERATE HAZARD		C	
1 = SLIGHT HAZARD		D	
0 = MINIMAL HAZARD	Additional Information	E	
		F	
		G	
		H	
		I	
		J	
		K	
		X	Consult your supervisor or S.O.P. for "SPECIAL" handling directions

PERSONAL PROTECTION EQUIPMENT

A  Safety Glasses	n  Splash Goggles	o  Face Shield & Eye Protection	p  Gloves
q  Boots	r  Synthetic Apron	s  Full Suit	t  Dust Respirator
u  Vapor Respirator	w  Dust & Vapor Respirator	y  Full Face Respirator	z  Airline Hood or Mask

GHS WORKPLACE LABELING SYSTEM



GHS WORKPLACE LABEL

PRODUCT IDENTIFIER 123456789

HEALTH HAZARD

PHYSICAL HAZARD

ENVIRONMENTAL HAZARD

TARGET ORGAN EFFECTS

PERSONAL PROTECTIVE EQUIPMENT

PRECAUTIONS

SEE SAFETY DATA SHEET

PRODUCT IDENTIFIER 123456789

TOLUENE
UN 1204

HEALTH HAZARD

PHYSICAL HAZARD

ENVIRONMENTAL HAZARD

TARGET ORGAN EFFECTS

PERSONAL PROTECTIVE EQUIPMENT

PRECAUTIONS

HIGHLY FLAMMABLE LIQUID AND VAPOR!
May be fatal if inhaled and enters through skin.

SEE SAFETY DATA SHEET

PRODUCT CONTAINER LABELS

TOLUENE

DANGER
Irritating to eyes, causes severe burns, poison. May be fatal if inhaled, harmful if swallowed. Causes drowsiness and dizziness. May cause respiratory irritation. May cause drowsiness and dizziness. Do not inhale.

PRECAUTIONS: Use in well-ventilated area. Wear protective goggles, full face shield, respirator, gloves and apron. Wear anti-static/grounding equipment. Do not drink water or eat. Do not ingest. Avoid contact with eyes, face and clothing. When pouring or filling, avoid splashing. Use only approved containers. Keep away from heat and open flames. Do not use in confined spaces. Do not use in food processing areas. Do not use in food processing areas. Do not use in food processing areas.

FIRST AID: If inhaled, remove victim to fresh air. If breathing stopped, begin artificial respiration. For skin or eye contact, flush with water for at least 15 minutes after removing contaminated clothing or goggles. Do not induce vomiting. Rinse mouth with water. Never allow victim to become unconscious. Never give anything by mouth to unconscious victim. For all cases, refer medical attention immediately. Contact your local poison center.

SEE SAFETY DATA SHEET

SULPHURIC ACID

DANGER
Extremely corrosive, causes severe burns, poison. May be fatal if inhaled, harmful if swallowed. Causes drowsiness and dizziness. May cause respiratory irritation. May cause drowsiness and dizziness. Do not inhale.

PRECAUTIONS: Use in well-ventilated area. Wear protective goggles, full face shield, respirator, gloves and apron. Wear anti-static/grounding equipment. Do not drink water or eat. Do not ingest. Avoid contact with eyes, face and clothing. When pouring or filling, avoid splashing. Use only approved containers. Keep away from heat and open flames. Do not use in confined spaces. Do not use in food processing areas. Do not use in food processing areas. Do not use in food processing areas.

FIRST AID: If inhaled, remove victim to fresh air. If breathing stopped, begin artificial respiration. For skin or eye contact, flush with water for at least 15 minutes after removing contaminated clothing or goggles. Do not induce vomiting. Rinse mouth with water. Never allow victim to become unconscious. Never give anything by mouth to unconscious victim. For all cases, refer medical attention immediately. Contact your local poison center.

SEE SAFETY DATA SHEET

GHS SYMBOLS & MEANINGS

HEALTH HAZARDS

- Toxic Material**
 - Acutely Toxic (severe)
- Other Health Hazards**
 - Skin Sensitizer
 - Respiratory Tract Irritants
 - Narcotic Effects
 - Eye Irritants
 - Skin Irritants
 - Hazardous to the Ozone Layer
- Severe Health Hazards**
 - Respiratory Sensitizer
 - Germ Cell Mutagens
 - Carcinogens
 - Aspiration Hazards
 - Reproductive Toxins
 - Target Organ Effects (Single or Multiple Exposures)
- Corrosive Material**
 - Corrosive to Skin
 - Corrosive to Eyes

PHYSICAL HAZARDS

- Flammable Material**
 - Flammable liquids, solids and gases
 - Flammable Aerosols
 - Pyrophoric liquids, solids and gases
 - Self-Heating Substances
 - Organic Peroxides
 - Self-Reactive Substances and Mixtures

PHYSICAL HAZARDS

- Explosive Material**
 - Explosives
 - Self-Reactive Substances and Mixtures
 - Some Organic Peroxides
- Oxidizing Material**
 - Oxidizing Liquids
 - Oxidizing Solids
 - Oxidizing gases
- Compressed Gas**
 - Gases under Pressure
- Corrosive Material**
 - Corrosive to Metals

TARGET ORGAN EFFECTS

- Kidneys**
 - Harmful to the kidneys
- Liver**
 - Harmful to the liver
- Lungs**
 - Harmful to the lungs
- Nervous System**
 - Harmful to the central and/or peripheral nervous system
- Skin**
 - Causes skin damage, irritation or dermatitis
- Eyes**
 - Irreversible eye damage
 - Serious eye irritation
 - Irritant
- Others**
 - Harmful to the blood and reproductive system

SWIFT PRINTED GHS WORKPLACE LABEL

PRODUCT IDENTIFIER 123456789

HEALTH HAZARD

PHYSICAL HAZARD

PHYSICAL HAZARD

TARGET ORGAN EFFECTS

PERSONAL PROTECTIVE EQUIPMENT

PRECAUTIONS

SEE SAFETY DATA SHEET

PRODUCT IDENTIFIER 123456789

SULPHURIC ACID
UN 1830

HEALTH HAZARD

PHYSICAL HAZARD

PHYSICAL HAZARD

TARGET ORGAN EFFECTS

PERSONAL PROTECTIVE EQUIPMENT

PRECAUTIONS

EXTREMELY CORROSIVE, CAUSES SEVERE BURNS, POISON.
May be fatal if inhaled, enters through skin.

SEE SAFETY DATA SHEET

PERSONAL PROTECTION INDEX

A		I		R	
B		J		S	
C		K		T	
D		L		U	
E		M		V	
F		N		W	
G		P		X	Consult Your Supervisor
H		Q			

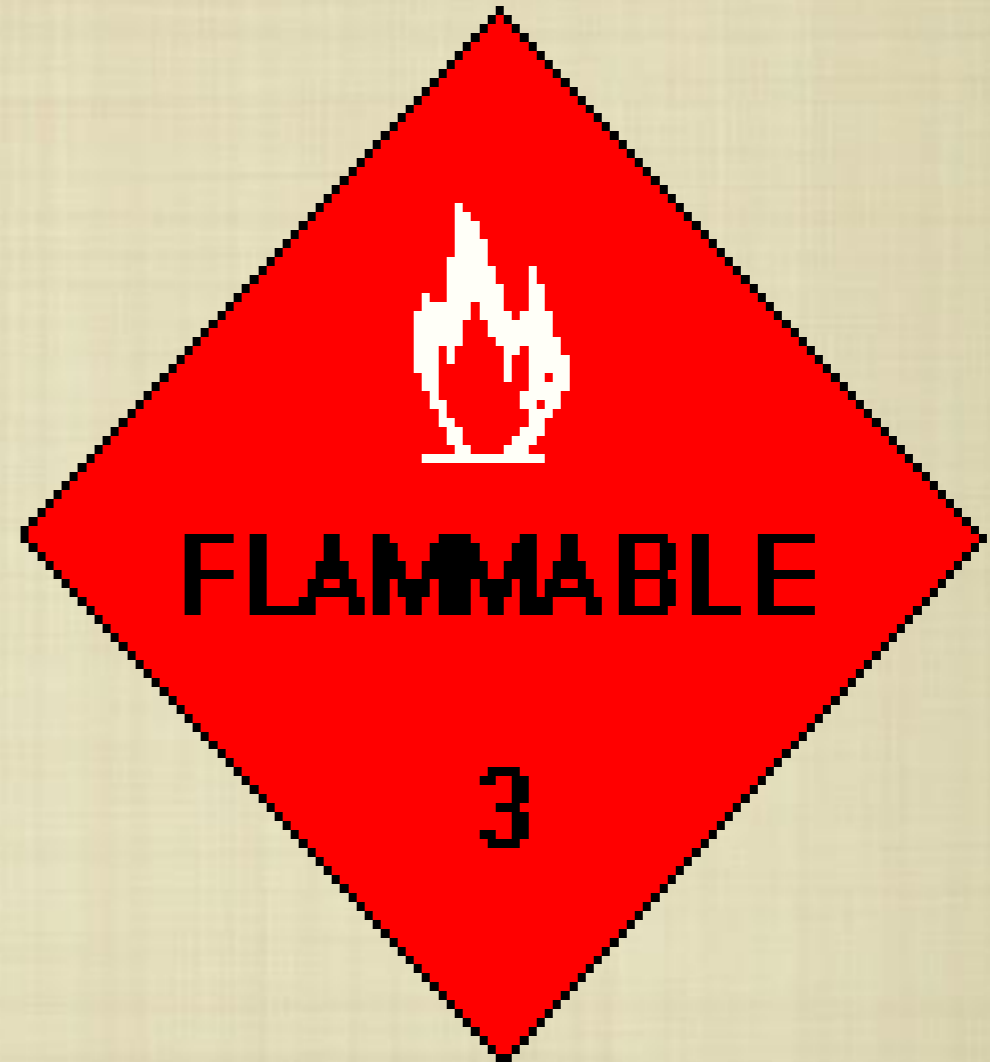
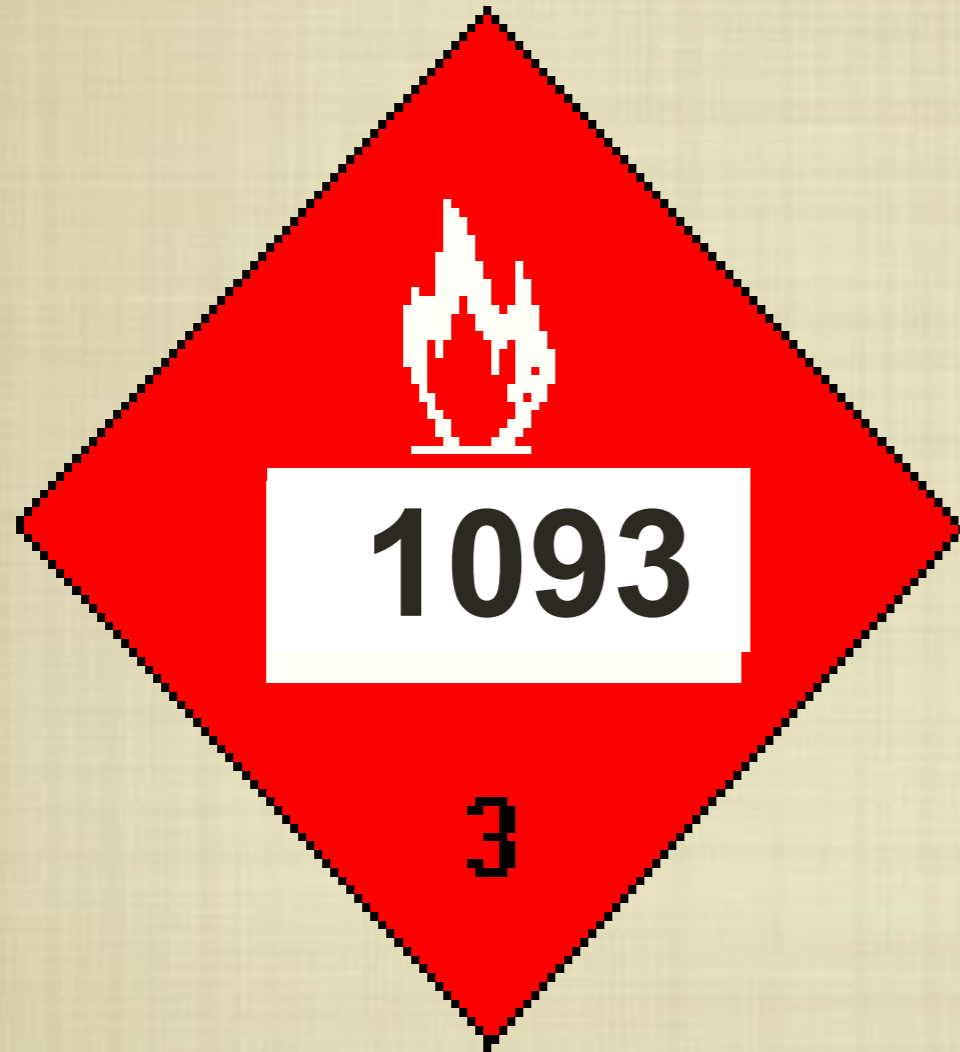
PERSONAL PROTECTION SYMBOLS

SAFETY GLASSES SPLASH GOGGLES FACE SHIELD GLOVES BOOTS FULL SUIT DUST RESPIRATOR AIR LINE HOOD or MASK SYNTHETIC APRON VAPOR RESPIRATOR DUST & VAPOR RESPIRATOR POWDERED AIR-PURIFYING RESPIRATOR

United Nations Hazard Classes



Example of Placard & Panel with ID



Class 1: Explosives / 6 Sub-Divisions

- ◆ 1.1 Explosives (mass explosion hazard)
- ◆ 1.2 Explosives (projection hazard)
- ◆ 1.3 Explosives (predominantly a fire hazard)
- ◆ 1.4 Explosives (no significant blast hazard)
- ◆ 1.5 Very insensitive explosives; blasting agents
- ◆ 1.6 Extremely insensitive detonating substances



Hazard Class 2: Gases

- Division 2.1 Flammable Gases:

Acetylene



- Division 2.2 Non-flammable, non-toxic compressed gasses:

Nitrogen, Oxygen



- Division 2.3 Gases toxic/poisonous by inhalation:

Chlorine



Class 3: Flammable and Combustible Liquids

OSHA vs DOT

Flammable liquids are substances with a flash point:

OSHA: less than 100°

DOT: less than 140°

Combustible liquids are substances with a flash point:

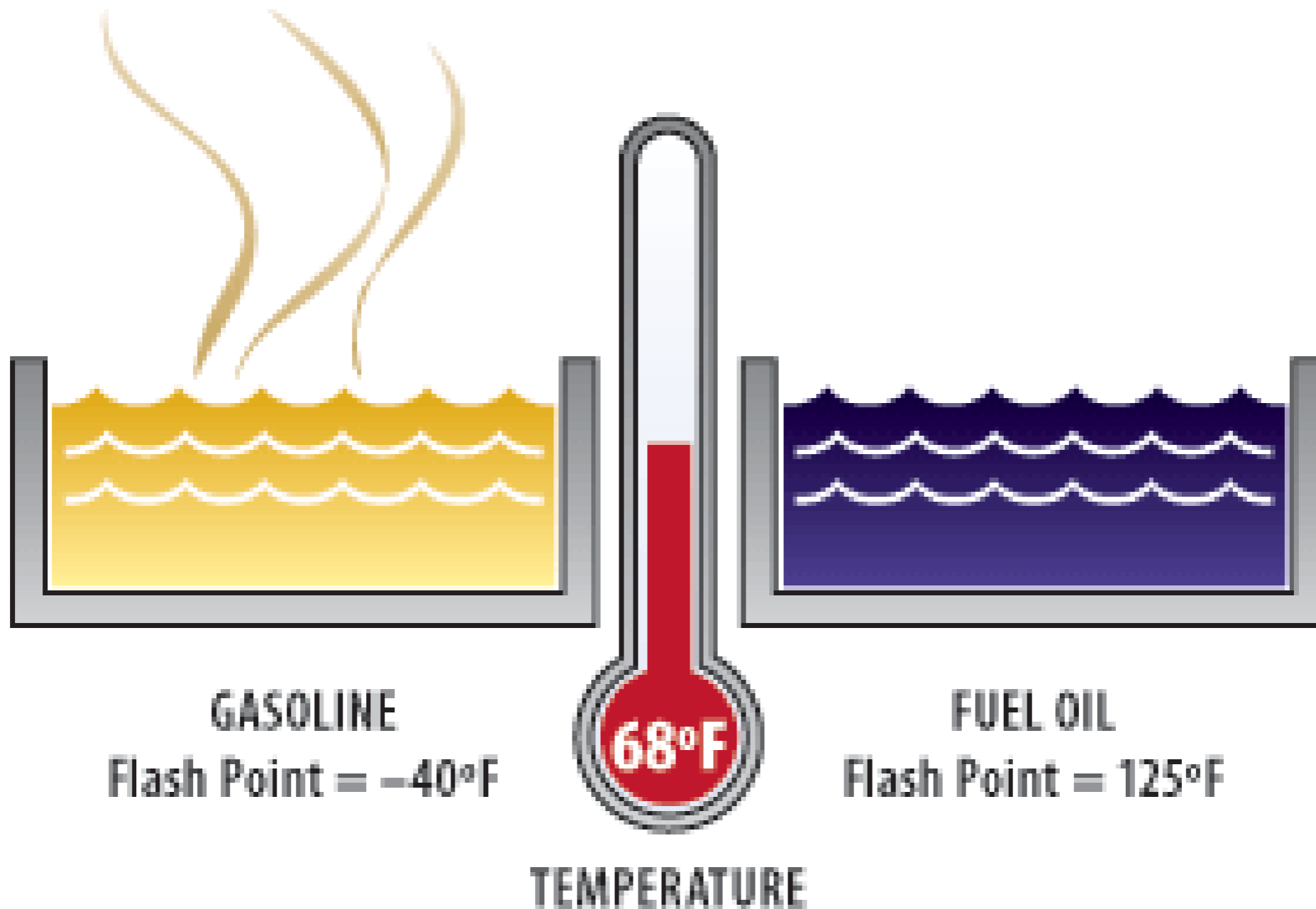
OSHA: at or above 100°

DOT: at or above 140°



FLASH POINT

FLASH POINT — Lowest temperature at which a liquid gives off enough vapors to form an ignitable mixture with air



Class 4: Flammable Solids

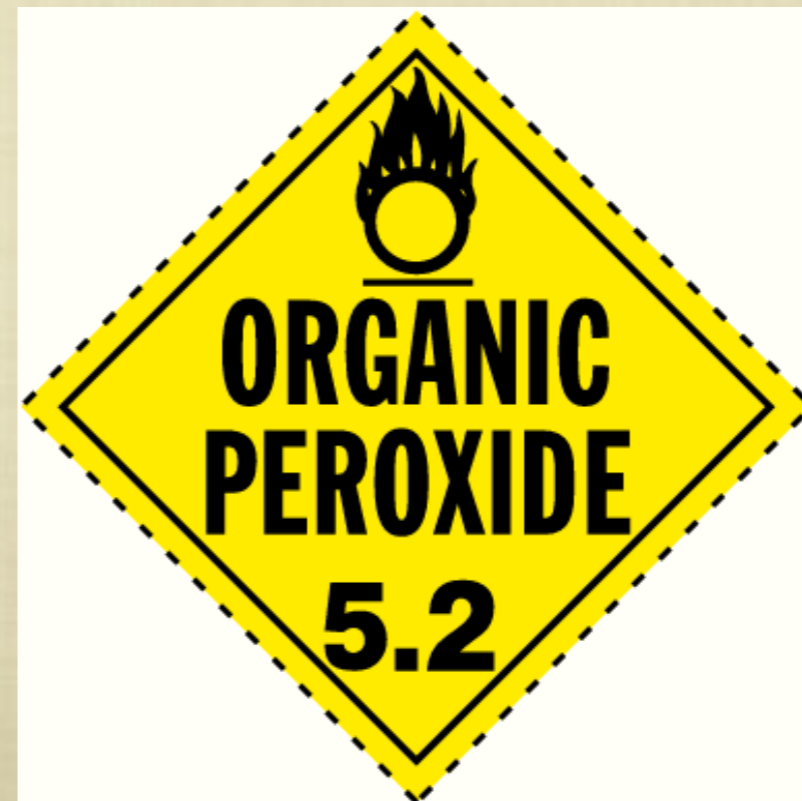
- 4.1 Flammable Solid
- 4.2 Spontaneously Combustible Material
- 4.3 Dangerous When Wet Material



Any solid material, other than explosives, that can cause a fire or can react violently with water or air.

Class 5: Oxidizers and Organic Peroxides

- 5.1 Oxidizers
- 5.2 Organic Peroxides



Class 5: Oxidizers and Organic Peroxides

- **5.1 Oxidizers**

- **Materials that readily yields oxygen, which may result in the ignition of combustible materials.**

- **5.2 Organic Peroxides**

- **Combustible substances that reacts as an oxidizer in contact with other combustible materials and in itself may be flammable or explosive.**

Class 6: Poisons

- **6.1 Poisonous Materials**
- **6.2 Infectious Substances**



Class 6: Poisons

- **6.1 Poisonous Materials**

- **A liquid or solid that is dangerous by external contact with the body or by ingestion.**

- **6.2 Infectious Substances**

- **A viable microorganism, or its toxin, which causes or may cause disease in humans or animals, or any agent that has the potential to cause severe, disabling, or fatal disease.**

Class 7: Radioactive Materials

- Any material or combination of materials that emits ionizing radiation.



Class 8: Corrosive Materials

Substances that will cause **visible destruction of human skin tissue** and **severely deteriorate steel**.

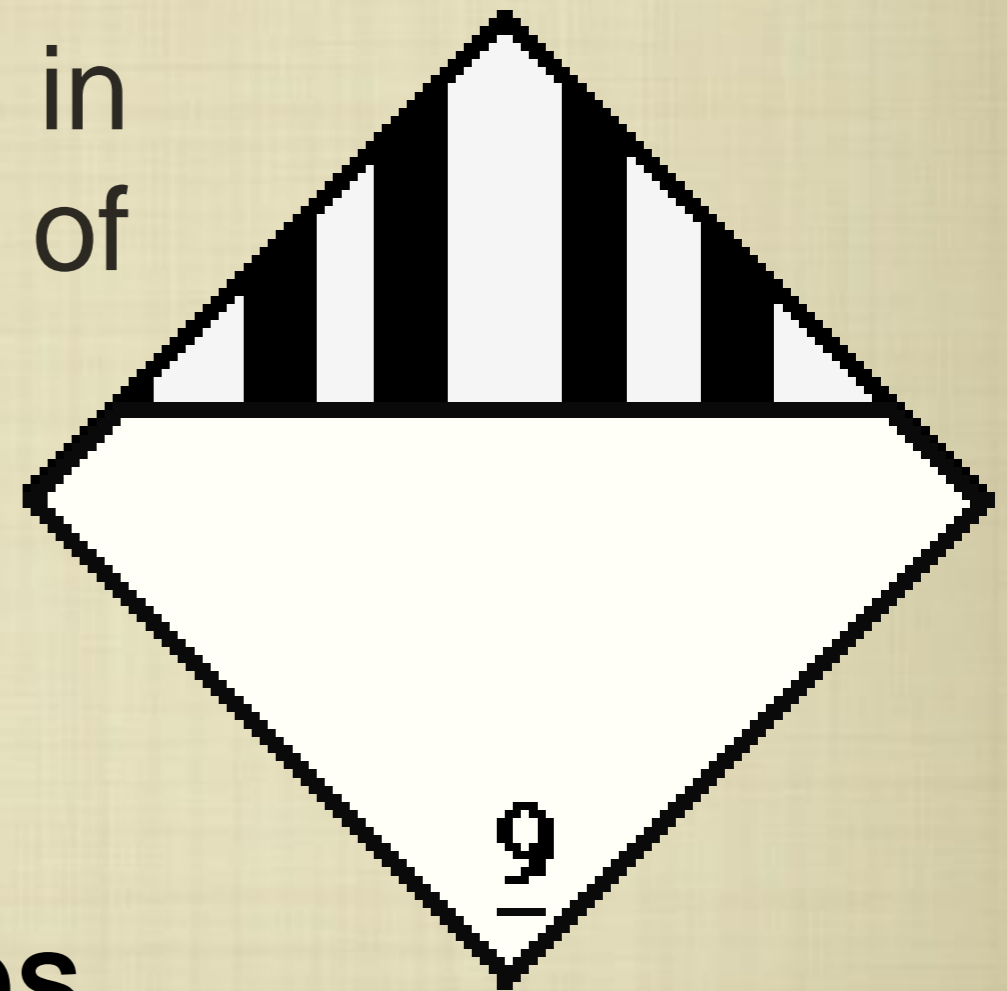


Class 9: Miscellaneous Hazardous Materials

Hazardous materials that **do not meet the specific requirements** for inclusion in the previous eight classes of hazards.



MIXED LOADS



SDS SHEETS

Safety Data Sheets

Safety Data Sheets

GHS - Revised Hazard Communication Standard

29 CFR 1910.1200

- This revision changed the Material Safety Data Sheet (MSDS) to a Safety Data Sheet (SDS)
- The SDS provides users with 16 standardized categories of information pertaining to a chemical's hazard.
 - This facilitates safe handling of the chemical and allows for safe procedures in the event of an emergency.

Safety Data Sheet

☞ Contents:

- • Section 1 – Identification
- • Section 2 – Hazard identification
- • Section 3 – Composition/information on ingredients
- • Section 4 – First aid measures
- • Section 5 – Firefighting measures
- • Section 6 – Accidental release measures
- • Section 7 – Handling and storage
- • Section 8 – Exposure controls/personal protection

Safety Data Sheet

☞ Contents Continued:

- • 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

Hazardous Communications

HAZCOM

ANY QUESTIONS?