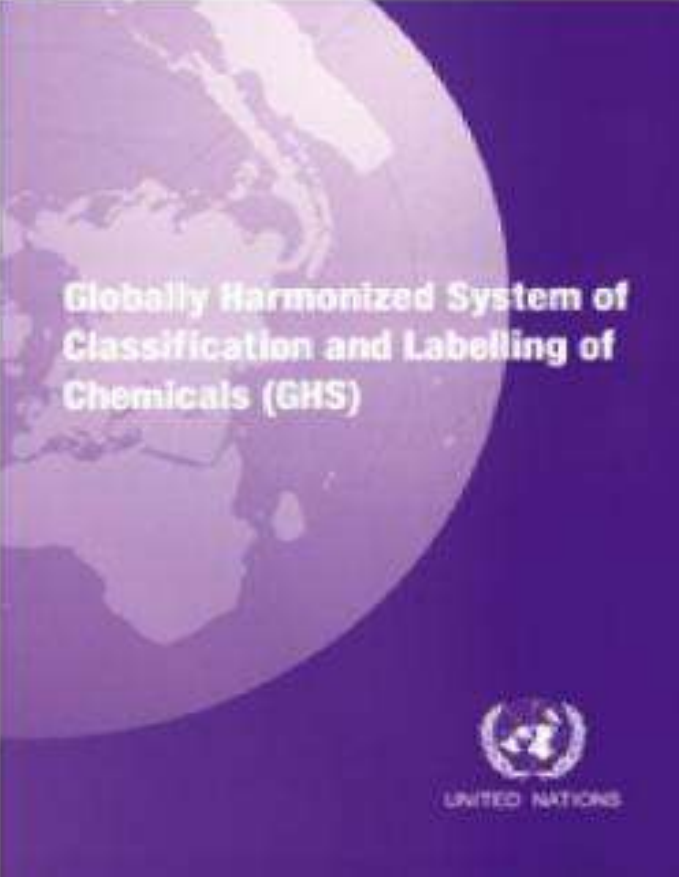


# Jennifer Scott-Wasilk, CHMM, COHC

- Class 3 Operator, Water Supply
- Class 1 Operator, Wastewater Works
- Certified Hazardous Materials Manager
- Certified 40-hour HazMat/Hazwoper Technician
- Asbestos Abatement Specialist
- Certified Occupational Hearing Conservationist





# Chemical Hazard Communication and the Globally Harmonized System (GHS)

2014

OTCO

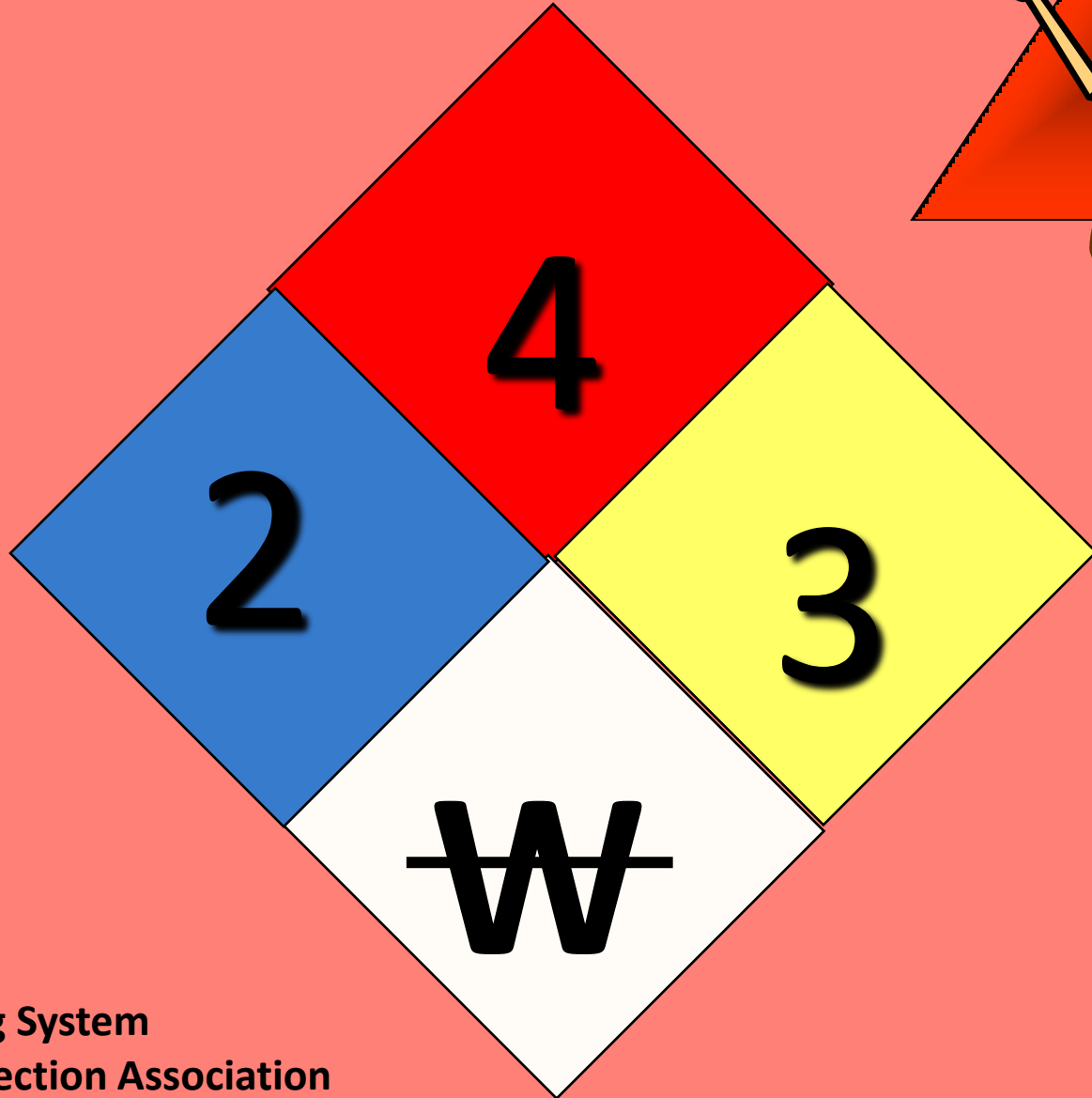


# Chemical Hazard Communication

- Know how Chemicals can hurt you.
- Know how to protect yourself.



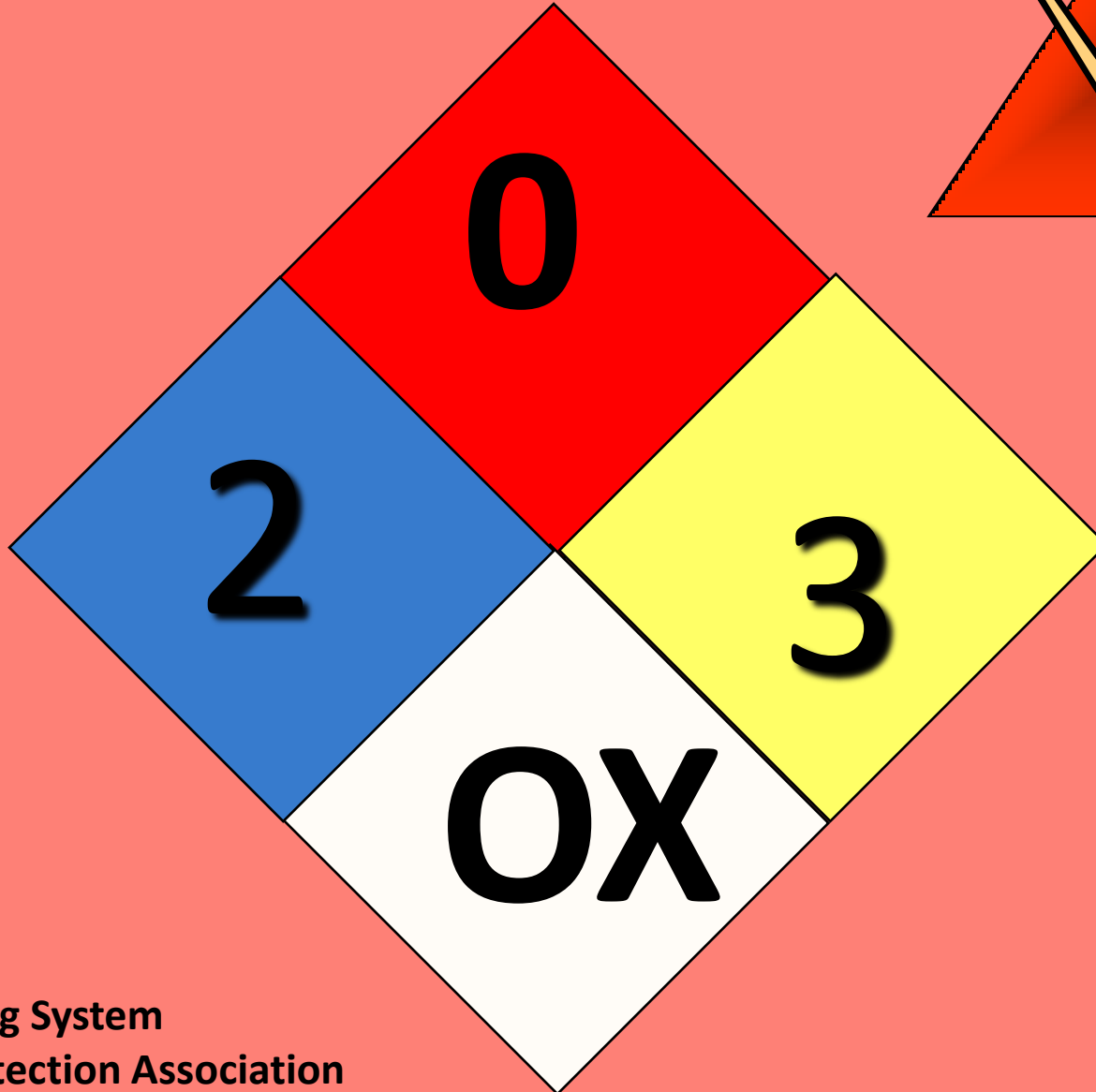
NFPA



1960  
NFPA 704 Marking System  
National Fire Protection Association



NFPA



1960  
NFPA 704 Marking System  
National Fire Protection Association



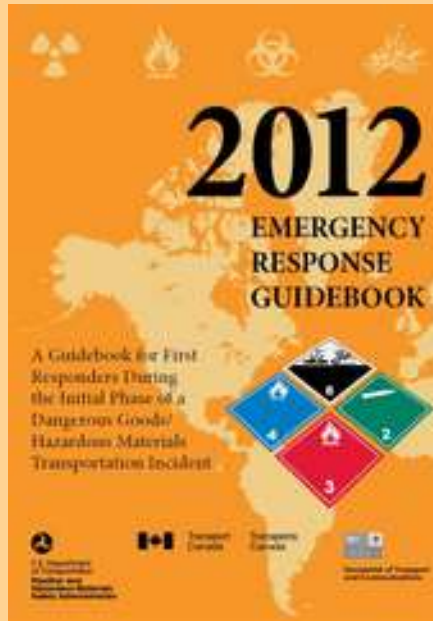


# HMIS<sup>®</sup>

<b>Health</b>	*	2
<b>Flammability</b>		1
<b>Physical Hazard</b>		0

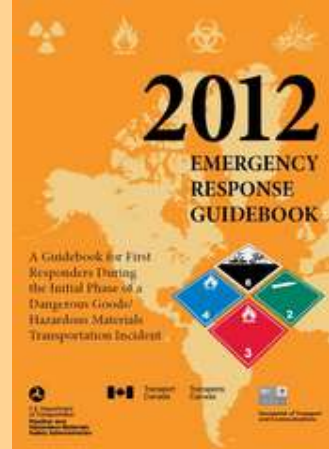


# Hazardous Materials (Dangerous Goods)



1975  
Hazardous Materials Transportation Act

# Transport Pictograms





...S-10





AIROX  
HIGH PERMANGANATE  
POTASSIUM OXIDIZER

OXIDIZER  
OX  
PERMANGANATE  
POTASSIUM

OX  
PERMANGANATE  
POTASSIUM  
OXIDIZER





**C Industries**

**SODIUM  
FLUOROSILICATE**

(SODIUM SILICOFLUORIDE)  
(SODIUM HEXAFLUOROSILICATE)  
CAS NUMBER 16893-85-9



UN 2674

50 LBS. NET WT. 22.68 Kg

DANGER!

**KC Industries**

**SODIUM  
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(SODIUM SILICOFLUORIDE)  
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CAS NUMBER 16893-85-9



UN 2674

50 LBS. NET WT. 22.68 Kg.

DANGER!



# Globally Harmonized System (GHS)

- United Nations
- Past
  - Each country had its own labels
  - Workers were confused
  - People got hurt
- Now
  - Same labels in all countries
  - Less misunderstanding

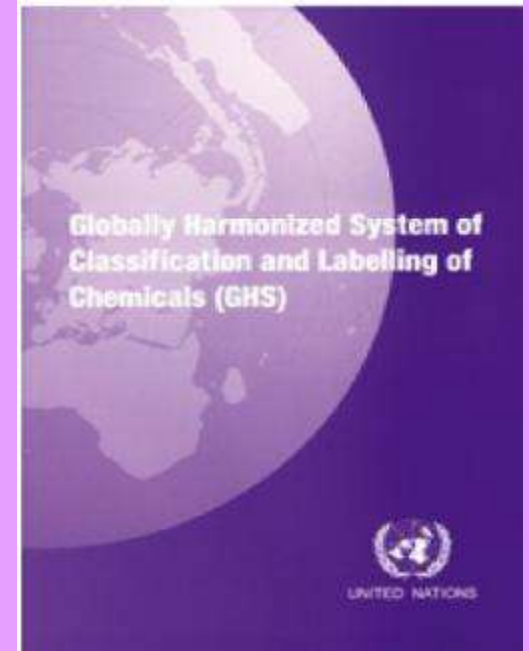


# GHS Pictograms: Much is familiar



# Three Kinds Of GHS Hazards

- Physical
- Health
- Environmental



# Physical Hazards

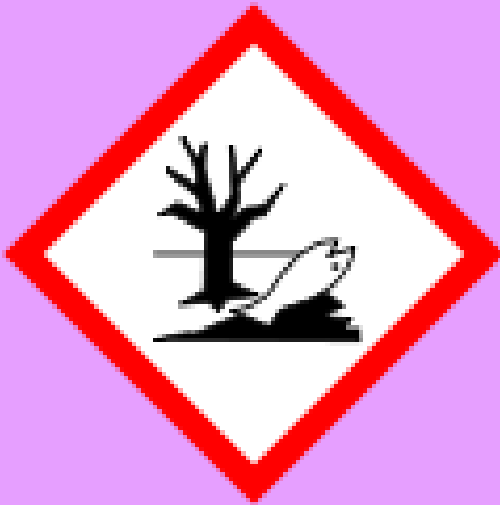













# Health Hazards



# Environmental Hazards



# GHS Hazard Communication

<p><u>Flame over circle</u></p>  <ul style="list-style-type: none"><li>• Oxidizers</li></ul>	<p><u>Flame</u></p>  <ul style="list-style-type: none"><li>• Flammables</li><li>• Pyrophorics</li><li>• Self-Heating</li><li>• Emits Flammable Gas</li><li>• Self Reactives</li><li>• Organic Peroxides</li></ul>	<p><u>Exploding bomb</u></p>  <ul style="list-style-type: none"><li>• Explosives</li><li>• Self Reactives</li><li>• Organic Peroxides</li></ul>
<p><u>Skull and crossbones</u></p>  <ul style="list-style-type: none"><li>• Acute toxicity (severe)</li></ul>	<p><u>Corrosion</u></p>  <ul style="list-style-type: none"><li>• Corrosives</li></ul>	<p><u>Gas cylinder</u></p>  <ul style="list-style-type: none"><li>• Gases under pressure</li></ul>
<p><u>Health Hazard</u></p>  <ul style="list-style-type: none"><li>• Carcinogen</li><li>• Mutagenicity</li><li>• Reproductive Toxicity</li><li>• Respiratory Sensitizer</li><li>• Target Organ Toxicity</li><li>• Aspiration Toxicity</li></ul>	<p><u>Environment</u></p>  <ul style="list-style-type: none"><li>• Aquatic Toxicity</li></ul>	<p><u>Exclamation mark</u></p>  <ul style="list-style-type: none"><li>• Irritant</li><li>• Skin Sensitizer</li><li>• Acute Toxicity (harmful)</li><li>• Narcotic effects</li><li>• Respiratory Tract Irritation</li><li>• Hazardous to Ozone Layer</li></ul>



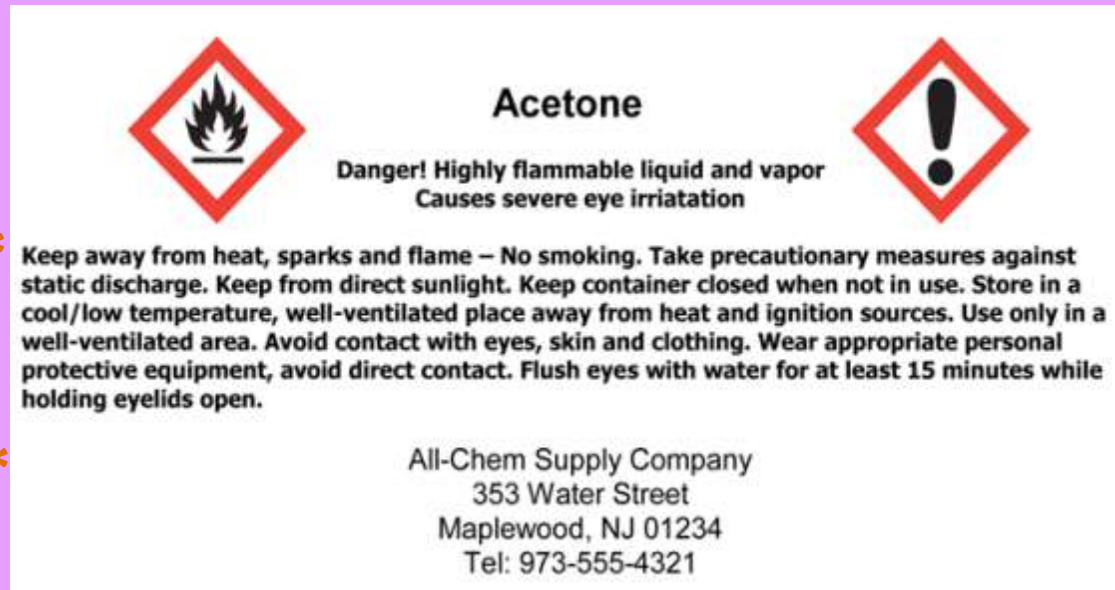
# Signal Word

- Important information about the chemical
- **Danger** for the more severe hazards
- **Warning** for less severe hazards
- Read the label before you use a chemical



# Label Elements

- Product identifier
- Supplier identifier
- Chemical identity
- **Hazard pictograms\***
- **Signal word\***
- **Hazard statements\***
- Precautionary information



**Acetone**

**Danger!** Highly flammable liquid and vapor  
Causes severe eye irritation

Keep away from heat, sparks and flame – No smoking. Take precautionary measures against static discharge. Keep from direct sunlight. Keep container closed when not in use. Store in a cool/low temperature, well-ventilated place away from heat and ignition sources. Use only in a well-ventilated area. Avoid contact with eyes, skin and clothing. Wear appropriate personal protective equipment, avoid direct contact. Flush eyes with water for at least 15 minutes while holding eyelids open.

All-Chem Supply Company  
353 Water Street  
Maplewood, NJ 01234  
Tel: 973-555-4321

**\*These three elements, all hazard warnings, are required to be located together on the label**



# Old vs New

## OSHA MSDS

- **Manufacturer information**
- **Hazard Ingredients/Identity Information**
- **Physical/chemical properties**
- **Fire and Explosion Hazard Data**
- **Reactivity Data**
- **Health Hazard Data**
- **Precautions for Safe Handling and Use**
- **Control Measures**

## GHS SDS

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



# Get Information

- How they hurt you
- How to protect yourself
  - PPE
  - Handling
  - Storage
  - Disposal

Health	*	4
Flammability		0
Physical Hazard		0

