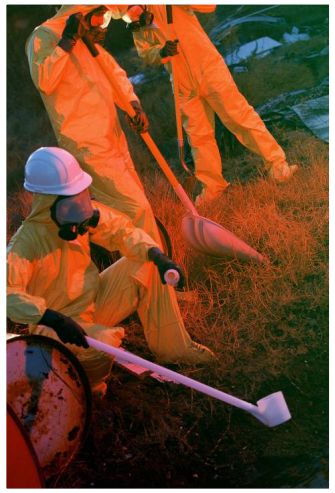
Hazard Communication

A basic review of standards and practices for development and use of Haz Com Programs in the workplace.



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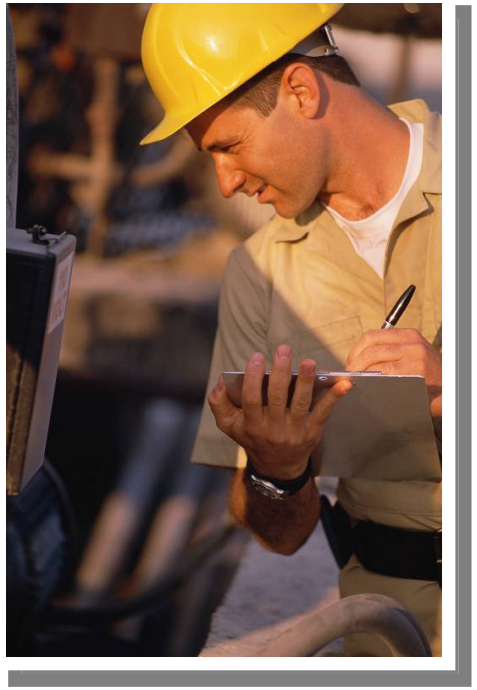
What is Haz Com?

Hazard Communication or “Haz Com,” is the means of informing employees of the hazards associated with chemicals used in their workplace.

The Basic Elements of Haz Com are:

- Labeling
- Material Safety Data Sheets
- Employee training
- Employee rights
- Emergency response



Labeling

Labels will contain:

- Product Name
- Basic Hazard Warning
  - Toxic
  - Flammable
  - Etc.

Other information may include:

- Emergency numbers
- First aid information

National Fire Protection Association 704 System

Red = Flammable

Yellow = Instability

White =
Special Hazard

Blue = Health

0 = Minimal

1 = Slight

2 = Moderate

3 = Serious

4 = Extreme

Blue – Health Hazard

4 - Very short exposure could cause death or serious residual injury even though prompt medical attention was given.

3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

Red - Flammability

4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

3 - Liquids and solids that can be ignited under almost all ambient conditions.

2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.

1 - Must be preheated before ignition can occur.

0 - Materials that will not burn.

Yellow - Reactivity

4 - Readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.

3 - Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation or reacts explosively with water.

2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.

1 - Normally stable but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

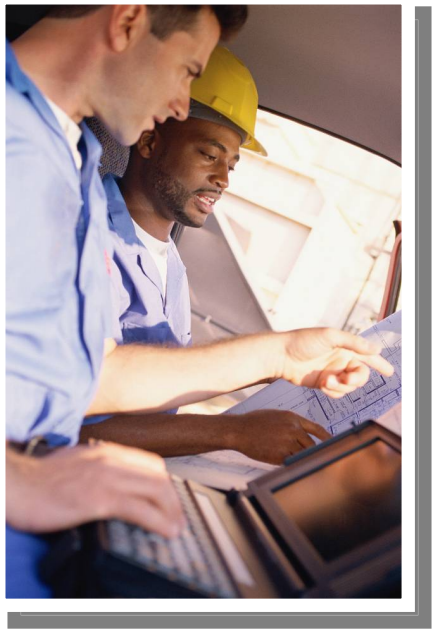
Special Hazard

This section is used to denote special hazards. There are only two NFPA 704 approved symbols:

- OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.
- W Unusual reactivity with water. This indicates a potential hazard using water to fight a fire involving this material.

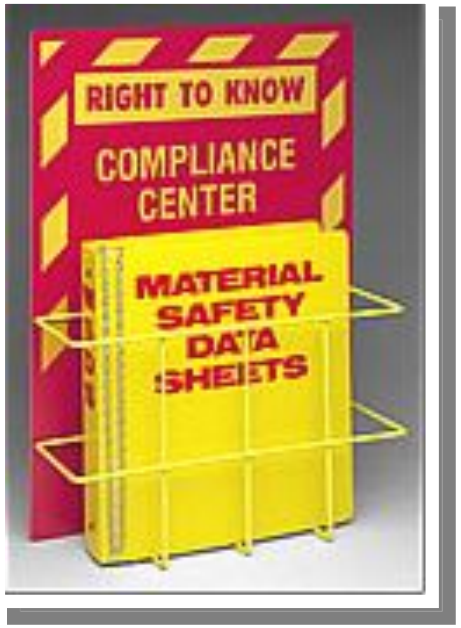
What questions would you ask if you saw this next to the entrance door?

Safety Data Sheets (SDS)



SDS are to be:

- maintained at the work site
- available to all employees
- updated frequently
- reviewed by the site supervisor



What about Normal Household Chemicals?

Regulators have yielded to comments from industry to the extent that household chemicals are not included in the enforcement guidelines as long as:

- They are over the counter products in over the counter labeled containers.
- They are stored and used in quantities consistent with typical home use.

Employee Training

- Employees must be trained in the following areas:
  - Haz Com regulations
  - How to read and analyze MSDS sheets
  - Employee rights
  - Personal Protective Equipment
  - Emergency Response

SDS Example

AMOCO OIL -- AMOCO SILVER REGULAR LEAD-FREE GASOLINE -
GASOLINE,AUTOMOTIVE,PREMIUM MOGAS UNLEADED
MATERIAL SAFETY DATA SHEET
NSN: 9130001487103
Manufacturer's CAGE: 15958
Part No. Indicator: A
Part Number/Trade Name: AMOCO SILVER REGULAR LEAD-FREE GASOLINE

Physical/Chemical Characteristics
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Appearance And Odor: CLEAR,COLORLESS TO STRAW YELLOW LIQUID;GASOLINE ODOR.
Boiling Point: 80.0F,26.7C
Vapor Density (Air=1): 3.5 (AIR)
Specific Gravity: 0.72-0.76
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: 100
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Fire and Explosion Hazard Data
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Flash Point: -45F,-43C
Lower Explosive Limit: 1.3
Upper Explosive Limit: 7.6
Extinguishing Media: DRY CHEMICAL, CARBON DIOXIDE, FOAM, WATER FOG. WATER MAY BE INEFFECTIVE, AS PRODUCT WILL FLOAT AND MAY SPREAD FIRE.

Health Hazard Data

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LD50-LC50 Mixture: ORAL LD50 = 18,800 MG/KG (RAT)

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: NO

Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: PRODUCT IS IRRITATING TO EYES,SKIN,
RESPIRATORY TRACT AND DEPRESSES THE CENTRAL NERVOUS SYSTEM. CHRONIC OVER
EXPOSURE MAY CAUSE LIVER,KIDNEY, OR CENTRAL NERVOUS SYSTEM DAMAGE.

Carcinogenicity - NTP: YES

Carcinogenicity - IARC: YES

Carcinogenicity - OSHA: YES

Explanation Carcinogenicity: CONTAINS BENZENE;LISTED BY ALL THREE. ALSO,
AN A STUDY FOUND LIVER CANCER IN MICE EXPOSED TO GASOLINE VAPORS.

Signs/Symptoms Of Overexp: EYE/SKIN CONTACT:TRANSITORY IRRITATION.
INHALED:RESPIRATORY IRRITATION,CENTRAL NERVOUS SYSTEM DEPRESSION INCLUDING
EUPHORIA,HEADACHE,DIZZINESS,DROWSINESS,FATIGUE,TREMORS,CONVULSIONS,NAUSEA,
VOMITING,DIARRHEA,LOSS OF CONSCIOUSNESS AND FINALLY DEATH. INGESTED:G/I
IRRITATION,PLUS SYMPTOMS SIMILAR TO THOSE UNDER "INHALED".

Med Cond Aggravated By Exp: PRE-EXISTING EYE,SKIN CONDITIONS O

Emergency/First Aid Proc: EYE:FLUSH WITH WATER 15 MIN. SKIN:WASH WI SOAP &
WATER. REMOVE CONTAMINATED CLOTHING;LAUNDER BEFORE REUSE.INHALED: REMOVE TO
FRESH AIR.RESUSCITATE OR GIVE OXYGEN AS NEEDED. GET MEDICAL CARE.
INGESTED:GET IMMEDIATE MEDICAL ATTENTION. DO NOT INDUCE VOMITING.IF
VOMITING OCCURS, MINIMIZE ASPIRATION HAZARD.

Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: ELIMINATE IGNITION SOURCES. ISOLATE AREA. USE PROTECTIVE EQUIPMENT AS NECESSARY. STOP LEAK AND CONTAIN SPILL. DIKE AS NEEDED TO KEEP SPILL FROM DRAINS,WATER WAYS ETC. WATER FOR MAY BE USED TOREDUCE VAPORS & PERSONAL HAZARD.REPORT SPILL PER LAW.

Neutralizing Agent: NONE

Waste Disposal Method: DISPOSE I/A/W FEDERAL,STATE,LOCAL REGULATIONS. PRODUCT QUALIFY'S AS IGNITABLE WASTE AND CANNOT BE LANDFILLED. IF RECOVERY OR RECYCLE ARE UNACCEPTABLE, INCINERATION MAY BE ACCEPTABLE DISPOSAL METHOD.

Precautions-Handling/Storing: STORE IN A COOL,DRY,ISOLATED WELL VENTILATED AREA. KEEP IGNITION SOURCES AWAY. GROUND CONTAINERS TO PREVENT STATIC DISCHARGE DURING TRANSFERS.

Other Precautions: FIRE AND EXPLOSION ARE THE ACUTE HAZARDS OF THIS PRODUCT. TAKE EXTRAORINARY STEPS TO PREVENT THEM.

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Control Measures

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Respiratory Protection: IF NEEDED, USE NIOSH/MSHA RESPIRATOR WITH ORGANIC VAPO CARTRIDGE OR PREFERRABLY,A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR OR SELF-CONTAINED BREATHING APPARATUS.

Ventilation: USE EXPLOSION PROOF VENTILATION EQUIPMENT TO MAINTAIN EXPOSURE BELOW PEL/TLV.

Protective Gloves: IMPERVIOUS RUBBER OR POLYMER.

Eye Protection: SAFETY GLASSES,OR SPLASH GOGGLES.

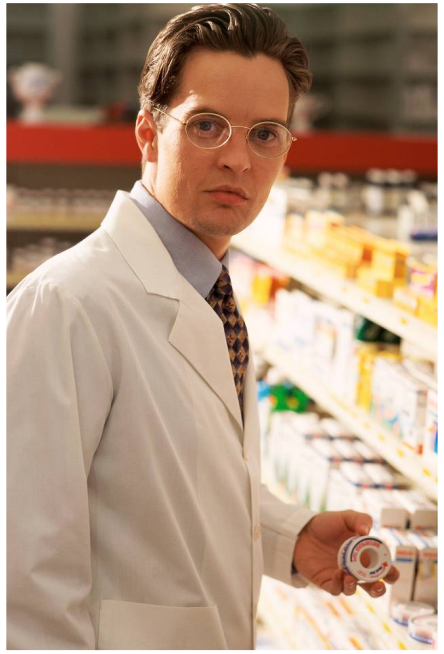
Other Protective Equipment: SAFETY SHOWER/EYE WASH. WORK CLOTHING AS NEEDED TO PROTECT FROM PROLONGED/REPEATED CONTACT.

Work Hygienic Practices: USE GOOD CHEMICAL HYGIENE PRACTICE. AVOID UNNECESSARY CONTACT. MINIMIZE ALL CONTACT.

Employee Rights

- All employees are entitled under law to know the hazard characteristics of the substances that they are exposed to in the workplace.
- Healthcare professionals may also be entitled to information relating to exposures if authorized by the employee. Consult company policy concerning such communication.
- Under no circumstances are employees to be discriminated against or otherwise punished because they exercise their right to know.

Emergency Response



Employees should know what to do in case of a workplace emergency involving chemicals.

Such as:

- Emergency telephone numbers
- PPE
- Evacuation procedures

Summary Points

- Haz Com programs inform employees about the hazards of the chemicals used in their workplace.
- Employees have a legal right to the Haz Com information.
- Labels and MSDS sheets provide the necessary Haz Com information
- Planned and proper emergency response will minimize the negative impacts of an accident.