



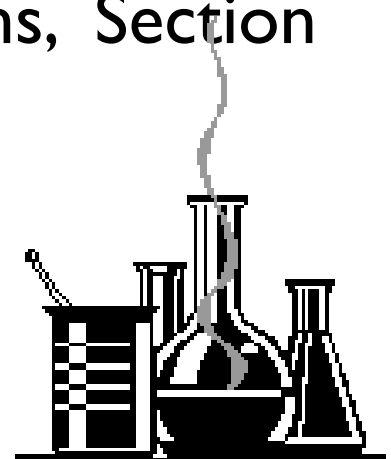
Hazard Communication

DHS

Health, Safety & Environmental

Hazard Communication

- Communicate about Workplace Hazardous Chemicals/Substances
- Cal/OSHA Standard
 - “Right to Know”
 - Title 8, California Code of Regulations, Section 5194



Your Right

- To receive information regarding hazardous chemicals to which you may be exposed.
 - Labels & other forms of warning
 - Safety Data Sheet (SDS)



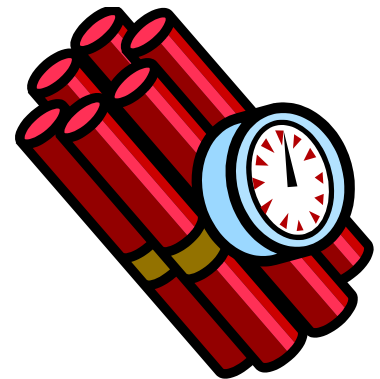
Hazardous Chemicals - California

1. A Physical Hazard
2. A Health Hazard
3. A Simple Asphyxiant
4. Combustible Dust
5. Pyrophoric gas
6. Hazard not otherwise classified
7. California List of Hazardous Substances



I. Physical Hazards

- Explosive
- Flammable (gases, aerosols, liquids or solids)
- Combustible Liquid
- Oxidizer (liquids, solids, gases)
- Self-Reactive
- Water-Reactive
- Pyrophoric (liquids & solids)
- Self-Heating
- Organic Peroxide
- Corrosive to Metals
- Gas under Pressure
- Contact with Water Emits Flammable Gas



2. Health Hazard

- Acute Toxicity
- Skin Corrosion/Irritation
- Serious Eye Damage/Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity (Heritable Mutation)
- Carcinogenicity
- Reproductive Toxicity
- Target Organ Systemic Toxicity
- Aspiration Hazard



3. Simple Asphyxiant

- Displaces oxygen in the ambient atmosphere
- Can thus cause oxygen deprivation
- Leading to unconsciousness and death

4. Combustible Dust

- Combustible dusts are fine particles that present an explosion hazard when suspended in air under certain conditions.
- Dust explosion: Loss of life, injury, and destruction of building
- Possible ignition source
 - Static electricity
 - Friction
 - Arcing

5. Pyrophoric Gas

- A gas that will burn spontaneously in air
- Danger! Avoid them!



6. Hazards Not Otherwise Classified

- Adverse physical or health effects
- Do not meet the specified criteria for the **Physical and Health Hazard** category
- Placed in **Hazards Not Otherwise Classified** category

7. List of Hazardous Substances

- Title 8, California Code of Regulations, Section 339
 - Over 1,000 substances on the list
 - Examples:
 - Asphalt fumes
 - Paraffin wax fume
 - Aspirin
 - Silver
 - Iron




Labeling

Shipped Container Labels:

1. Product identifier
2. Signal word
3. Hazard statement
4. Pictogram
5. Precautionary statement
6. Supplier identifier

(Sample Label)

GHS Product Name: _____		} (Product Identifier)	 (Hazard Pictograms)	
Supplier Name: _____				
Street Address: _____		} (Supplier Identification)	(Signal Word) Danger	
City: _____ State: _____				
Postal Code: _____ Country: _____				
Telephone Number: _____				
<p>Keep container tightly closed. Store in cool, well ventilated place that is isolated. Keep away from heat, sparks, open flames, fire, smoking. Only use non-sparking tools. Use explosion proof device at equipment. Take precautionary measures to avoid static discharge. Ground and bond container and receiving equipment. Direct to earth vapors. Wear protective gloves. Do not eat, drink or smoke when using the product. Wash hands thoroughly after handling. Dispose of this container with care, regional, national, international regulations as specified.</p> <p>In Case of Fire use dry chemical (BC) or Carbon Dioxide (CO2) fire extinguisher to extinguish.</p> <p>First Aid In case of eye contact: Flush eyes with water for 15 minutes. In case of skin contact: Wash with soap and water for 15 minutes. In case of inhalation: Move to fresh air and breathe normally. In case of ingestion: Do not induce vomiting. Seek medical attention immediately.</p>			<p>Hightly flammable liquid and vapor. May cause liver and kidney damage.</p>	} (Hazard Statements)
<p>(Precautionary Statements)</p>				
<p>(Supplemental Information)</p> <p>Section 1: _____</p> <p>Section 2: _____</p> <p>Section 3: _____</p> <p>Section 4: _____</p> <p>Section 5: _____</p> <p>Section 6: _____</p> <p>Section 7: _____</p> <p>Section 8: _____</p> <p>Section 9: _____</p> <p>Section 10: _____</p> <p>Section 11: _____</p> <p>Section 12: _____</p> <p>Section 13: _____</p> <p>Section 14: _____</p> <p>Section 15: _____</p> <p>Section 16: _____</p> <p>Section 17: _____</p> <p>Section 18: _____</p> <p>Section 19: _____</p> <p>Section 20: _____</p> <p>Section 21: _____</p> <p>Section 22: _____</p> <p>Section 23: _____</p> <p>Section 24: _____</p> <p>Section 25: _____</p> <p>Section 26: _____</p> <p>Section 27: _____</p> <p>Section 28: _____</p> <p>Section 29: _____</p> <p>Section 30: _____</p> <p>Section 31: _____</p> <p>Section 32: _____</p> <p>Section 33: _____</p> <p>Section 34: _____</p> <p>Section 35: _____</p> <p>Section 36: _____</p> <p>Section 37: _____</p> <p>Section 38: _____</p> <p>Section 39: _____</p> <p>Section 40: _____</p> <p>Section 41: _____</p> <p>Section 42: _____</p> <p>Section 43: _____</p> <p>Section 44: _____</p> <p>Section 45: _____</p> <p>Section 46: _____</p> <p>Section 47: _____</p> <p>Section 48: _____</p> <p>Section 49: _____</p> <p>Section 50: _____</p> <p>Section 51: _____</p> <p>Section 52: _____</p> <p>Section 53: _____</p> <p>Section 54: _____</p> <p>Section 55: _____</p> <p>Section 56: _____</p> <p>Section 57: _____</p> <p>Section 58: _____</p> <p>Section 59: _____</p> <p>Section 60: _____</p> <p>Section 61: _____</p> <p>Section 62: _____</p> <p>Section 63: _____</p> <p>Section 64: _____</p> <p>Section 65: _____</p> <p>Section 66: _____</p> <p>Section 67: _____</p> <p>Section 68: _____</p> <p>Section 69: _____</p> <p>Section 70: _____</p> <p>Section 71: _____</p> <p>Section 72: _____</p> <p>Section 73: _____</p> <p>Section 74: _____</p> <p>Section 75: _____</p> <p>Section 76: _____</p> <p>Section 77: _____</p> <p>Section 78: _____</p> <p>Section 79: _____</p> <p>Section 80: _____</p> <p>Section 81: _____</p> <p>Section 82: _____</p> <p>Section 83: _____</p> <p>Section 84: _____</p> <p>Section 85: _____</p> <p>Section 86: _____</p> <p>Section 87: _____</p> <p>Section 88: _____</p> <p>Section 89: _____</p> <p>Section 90: _____</p> <p>Section 91: _____</p> <p>Section 92: _____</p> <p>Section 93: _____</p> <p>Section 94: _____</p> <p>Section 95: _____</p> <p>Section 96: _____</p> <p>Section 97: _____</p> <p>Section 98: _____</p> <p>Section 99: _____</p> <p>Section 100: _____</p>				

Workplace Labeling

- If the hazardous material is poured into another container, you must label the second container with the following information:
 - 1. Identity of the hazardous material**
 - 2. Appropriate hazard warnings**

Label Signal Word

Only 2 of them

- **Danger**
 - More severe hazard
- **Warning**
 - Less severe hazard



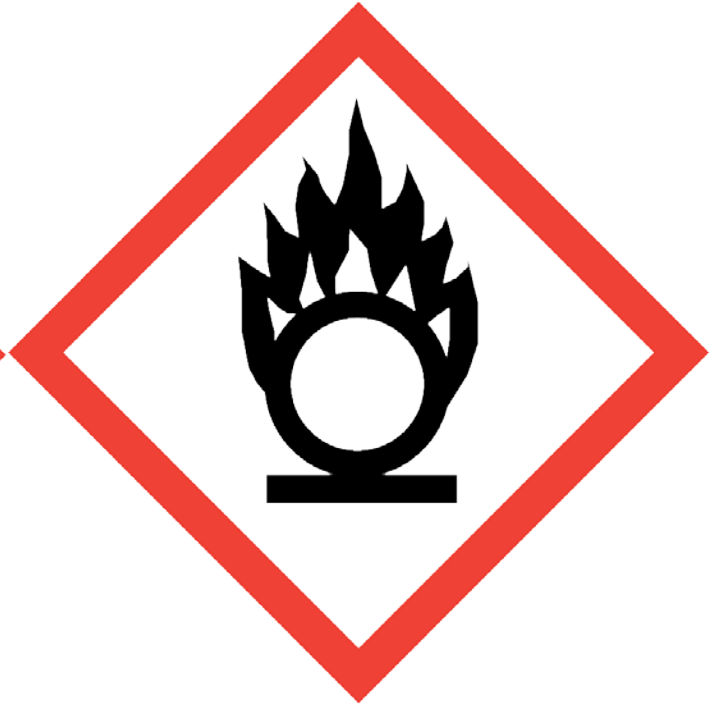
Label Pictograms



Label Pictograms



Flammable



Oxidizer
(Support burning)

Label Pictograms



Explosive



Fatal/Toxic

Label Pictograms



Corrosive
(Acids, Alkalis)

Compressed Gas

Label Pictograms



Health Hazard



Environment
(Aquatic Toxicity)

Label Pictograms



Irritant/Dermal Sensitizer/Narcotic
Effects/ Respiratory Tract/Harmful



Hazard Communication Standard Labels

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.

For more information: www.osha.gov



(800) 321-OSHA (6742)

SAMPLE LABEL

PRODUCT IDENTIFIER

CODE _____

Product Name _____

SUPPLIER IDENTIFICATION

Company Name _____

Street Address _____

City _____ State _____

Postal Code _____ Country _____

Emergency Phone Number _____

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in cool, well ventilated place that is locked.

Keep away from heat/sparks/open flame. No smoking.

Only use non-sparking tools.

Use explosion-proof electrical equipment.

Take precautionary measure against static discharge.

Ground and bond container and receiving equipment.

Do not breathe vapors.

Wear Protective gloves.

Do not eat, drink or smoke when using this product.

HAZARD PICTOGRAMS



SIGNAL WORD

Danger

HAZARD STATEMENT

**Highly flammable liquid and vapor.
May cause liver and kidney damage.**

SUPPLEMENTAL INFORMATION

Directions for use

Fill weight: _____ Lot Number _____

Gross weight: _____ Fill Date: _____

Expiration Date: _____

NFPA Label

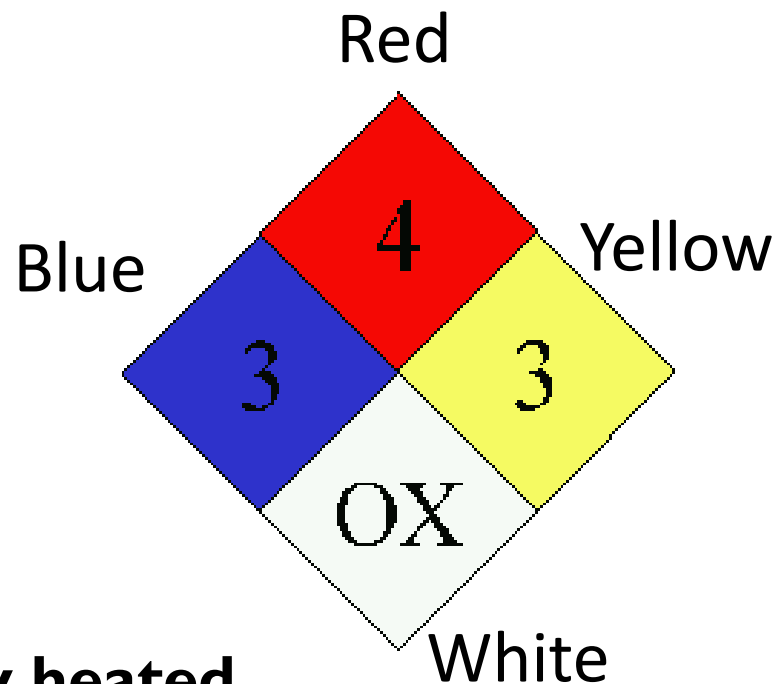
NFPA – National Fire Protection Association

Blue – Health Hazard

- 0 – Not hazardous
- 1 – Slightly hazardous
- 2 – Hazardous
- 3 – Extreme danger
- 4 – Deadly

Red – Fire Hazard

- 0 – Will not burn
- 1 – Will ignite if preheated
- 2 – Will ignite if moderately heated
- 3 – Will ignite at most ambient condition
- 4 – Burns readily at ambient conditions



NFPA LABEL

Yellow – Reactivity

0 – Stable

1 – Unstable if heated

2 – Violent chemical change

3 – Shock and heat may detonate

4 – May detonate

White- Special Hazard

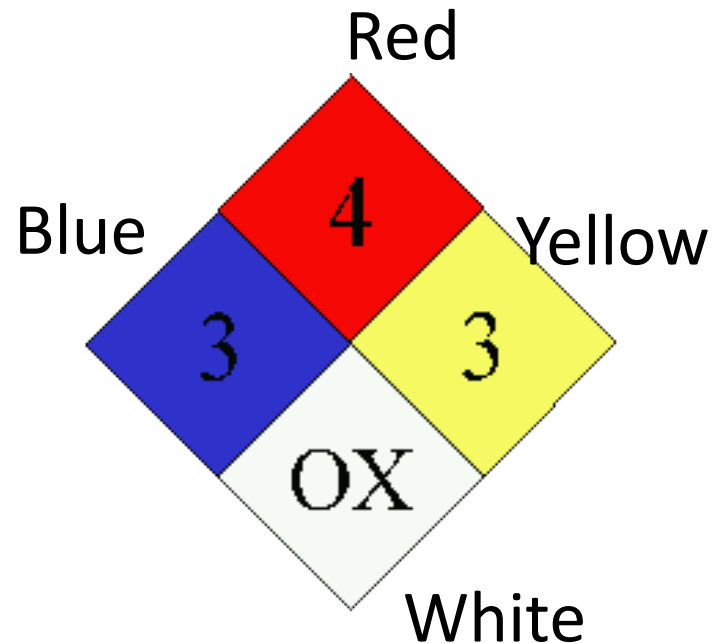
~~W~~ - Water-reactive

OX – Oxidizer

ACID – Acid

ALK – Alkali

COR – Corrosive



HMIS

- Hazardous Materials Identification System
- Same color code & numerical rating system as the NFPA diamond
- An * in HEALTH means chronic effect

HMIS®

HEALTH	<input type="text"/>	<input type="text"/>
FLAMMABILITY	<input type="text"/>	
REACTIVITY	<input type="text"/>	
PERSONAL PROTECTION		

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122-HM-S-6549

Chemical Name	
HEALTH	<input type="text" value="0"/>
FLAMMABILITY	<input type="text" value="0"/>
PHYSICAL HAZARD	<input type="text" value="0"/>
PERSONAL PROTECTION	<input type="text" value="0"/>

SDS (Safety Data Sheet)

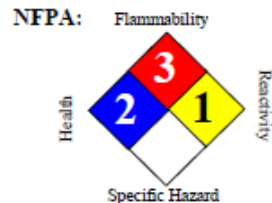
SDS - Required Format:

1. Identification
2. Hazards Identification
3. Composition/
Ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release
measures
7. Handling & storage
8. Exposure controls/
Personal protection
9. Physical/chemical
properties
10. Stability & reactivity
11. Toxicological info.
- 12-16. Ecological,
disposal, transport,
regulatory & other info.



Safety Data Sheet

Ethanol



SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Ethanol			
Synonyms	:	Ethyl Alcohol and Gasoline Mixture, Motor Fuel Ethanol; Denatured (with Gasoline) Ethanol, 888100004475			
SDS Number	:	888100004475	Version	:	2.16
Product Use Description	:	Fuel			
Company	:	For: Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway San Antonio, TX 78259			
Tesoro Call Center	:	(877) 783-7676	Chemtrec (Emergency Contact)	:	(800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications	Flammable Liquid – Category 1 or 2 depending on formulation. Aspiration Hazard – Category 1. Carcinogenicity – Category 2 Specific Target Organ Toxicity (Repeated Exposure) – Category 2 Specific Target Organ Toxicity (Single Exposure) – Category 3 Skin Irritation – Category 2 Eye Irritation – Category 2B Chronic Aquatic Toxicity – Category 2
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Pictograms



Signal Word

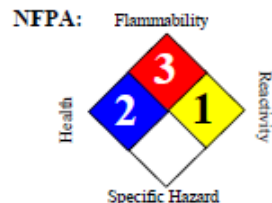
Danger

Hazard Statements

Extremely flammable liquid and vapor.
 May be fatal if swallowed and enters airways – do not siphon gasoline by mouth.
 Suspected of causing blood cancer if repeated over-exposure by inhalation and/or skin contact occurs.
 May cause damage to liver, kidneys and nervous system by repeated or prolonged inhalation or skin contact.
 Causes eye irritation. Can be absorbed through skin.
 Repeated or prolonged skin contact can cause irritation and dermatitis.

Safety Data Sheet

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Pictograms



Signal Word

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 Causes eye irritation. Can be absorbed through skin.
 Repeated or prolonged skin contact can cause irritation and dermatitis.

SECTION 11. TOXICOLOGICAL INFORMATION

Skin irritation	: Irritating to skin. Can be partially absorbed through skin.
Eye irritation	Irritating to eyes.
Ingestion	Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death. Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death may occur
Inhalation and further information	<p>Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, over excitation. Exposure to very high levels can result in unconsciousness and death.</p> <p>Repeated over-exposure may cause liver and kidney injuries. Components of the product may affect the nervous system.</p> <p>IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain. This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.</p>

<u>Component</u>	:
Gasoline, natural; Low boiling point naphtha	<p>8006-61-9 <u>Acute oral toxicity</u>: LD50 rat Dose: >5000 mg/kg</p> <p><u>Acute inhalation toxicity</u>: LC50 rat Dose: 20.7 mg/l Exposure time: 4 h</p> <p><u>Skin irritation</u>: Classification: Irritating to skin. Result: Mild skin irritation</p> <p><u>Eye irritation</u>: Classification: Irritating to eyes. Result: Moderate eye irritation</p>
Toluene	<p>108-88-3 <u>Acute oral toxicity</u>: LD50 rat Dose: 636 mg/kg</p> <p><u>Acute dermal toxicity</u>: LD50 rabbit Dose: 12,124 mg/kg</p> <p><u>Acute inhalation toxicity</u>: LC50 rat Dose: 49 mg/l Exposure time: 4 h</p> <p><u>Skin irritation</u>: Classification: Irritating to skin. Result: Mild skin irritation</p>

Hazardous Chemicals in the Facility (Your Facility)

- Liquid Nitrogen
- Liquid Oxygen
- Nitrous Oxide
- Compressed Gas
- Hazardous Drugs
- Disinfectants
- Alcohols
- Formalin
- Laboratory Chemicals
 - Xylene
- EVS Chemicals



Hazardous Materials Spill Procedure

- **Code Color**
 - Evacuate the area and deny entry
 - Call ext. **XXXXX**
 - Have MSDS/SDS ready for emergency responders

