Olive View Medical Center
ENVIRONMENT OF CARE

"Hazard Communication"

Close Encounters with Chemicals

- We encounter chemicals almost every day
  - Filling your vehicle with gasoline
  - Cleaning the bathroom
  - Applying pesticides or insecticides
  - Using solvents or acids at work
- Many chemicals can cause injury or illness if not handled properly.

Hazard Communication 'Goals'

Your training goals are:

- Right to Know chemical hazards
- Personal Protective Equipment (PPE), first aid, spills/leaks
- Labels, Material Safety Data sheets
- Quiz

Right to Know

- The Occupational Safety & Health Administration (OSHA) created the Hazard Communication Standard to help ensure your safety when working with hazardous chemicals. (California-Cal/OSHA)
- You have a **RIGHT TO KNOW** about the hazardous chemicals you use on the job and how to work safely with those chemicals.

Hazard Communication Standard

Chemical manufacturers must:

- Determine a chemical's hazards
- Provide labels and MSDSs

Employers must:

- Provide a hazard communication program
- Maintain MSDSs
- Train on hazardous materials

HazCom Standard (cont.)

Employees must:

- Read labels and MSDSs
- Follow employer instructions and warnings
- Identify hazards before starting a job
- Participate in training

Chemical Hazards

A chemical hazard will consist of:

Physical Hazards:

- Flammable
- Explosive
- Reactive

Health Hazards:

- Corrosive
- Toxic

Routes of Entry

Chemicals can enter the body by:

- Skin and eye contact
- Inhalation
- Swallowing
- Penetration (skin absorption)

Chemical Exposure

Chemical exposure consists of:

- Dosage
- Acute effects
- Chronic effects

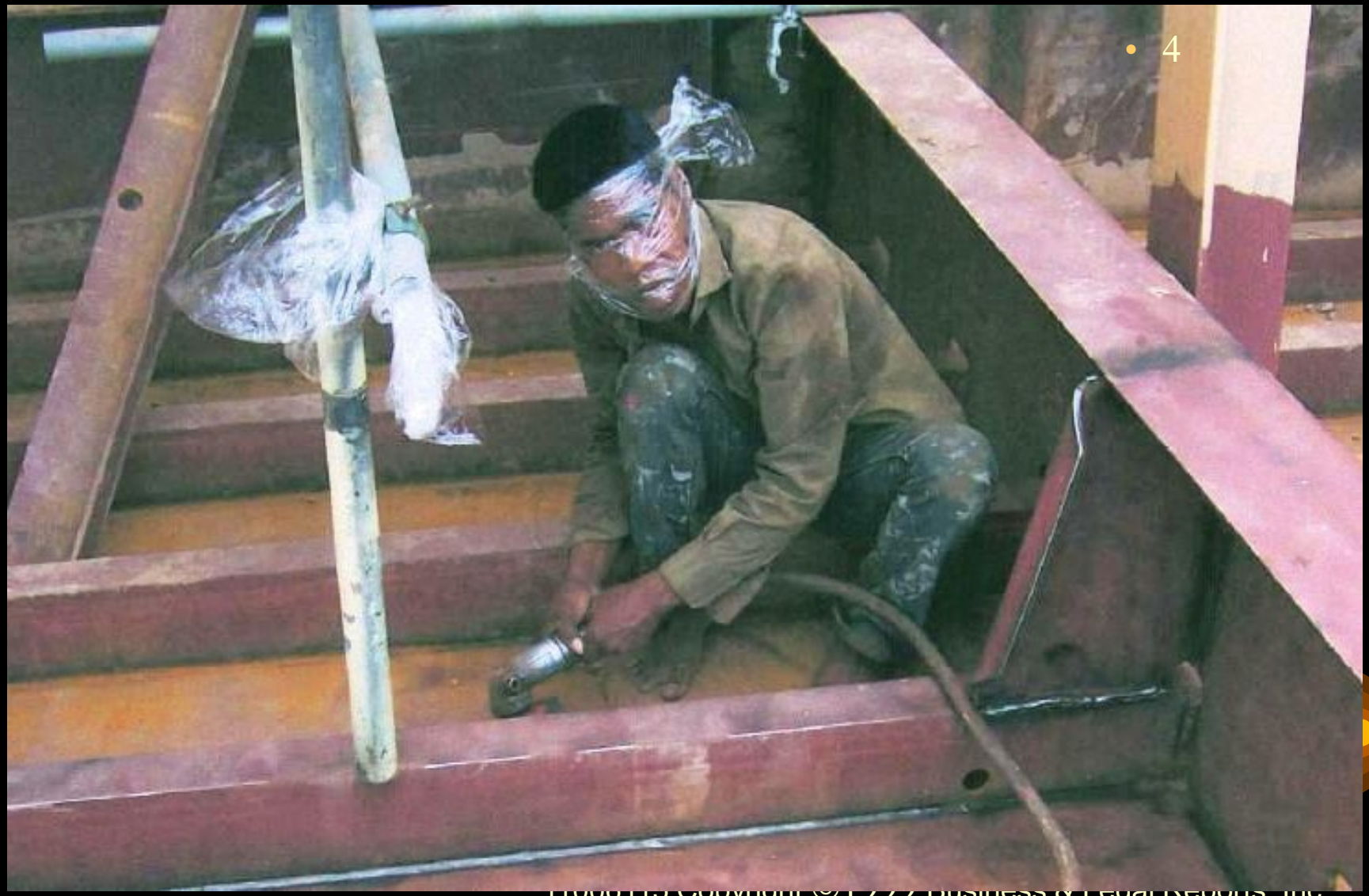
Personal Protective Equipment

Types of PPE are:

- Dust masks and respirators
- Glasses, goggles, and face shields
- Hearing protection
- Gloves
- Foot protection
- Head protection
- Aprons or full-body suits

Hazard Communication

Face Mask??



Hazardous Materials First Aid

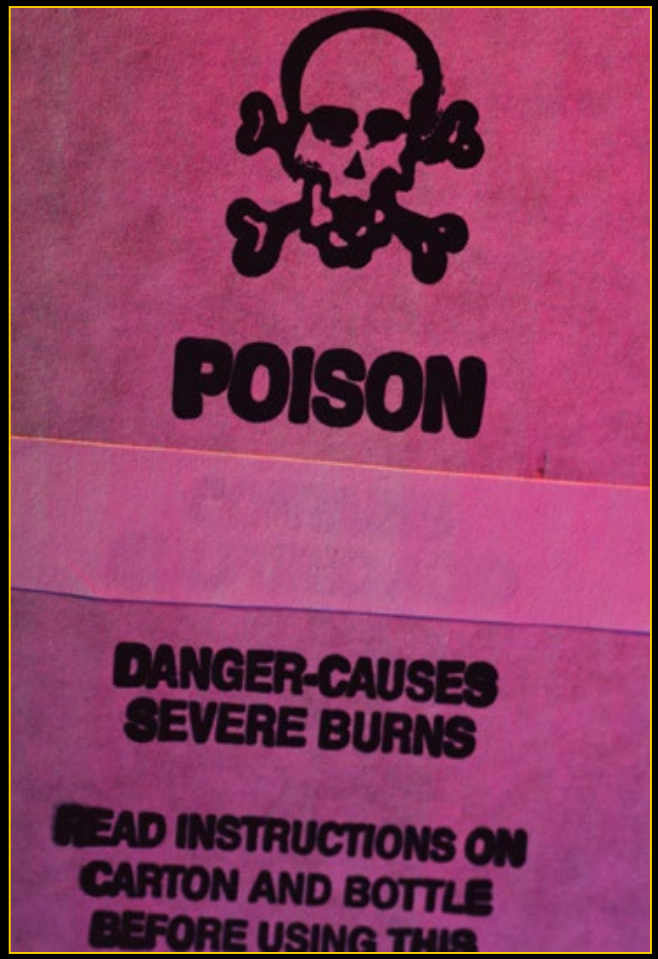
- Eyes: Flush with water for 15 minutes
- Skin: Wash with soap and cool/cold water
- Inhalation: Quickly move to fresh air
- Swallowing: Get emergency medical assistance

Spills and Leaks

- Evacuate the immediate area, control entry
- Post signs and/or barricades
- Notify immediate supervisor
- Notify Environmental Health & Safety dial (747) 210-3405 or Hospital Operator x111,
- If safe to do so, contain spill and remove any ignition sources

Importance of Labels

- Identity of the chemical
- Name, address, and emergency phone number of the manufacturer
- Physical and health hazards
- Special handling instructions
- Basic PPE recommendations
- First aid, fire response, spill cleanup procedure

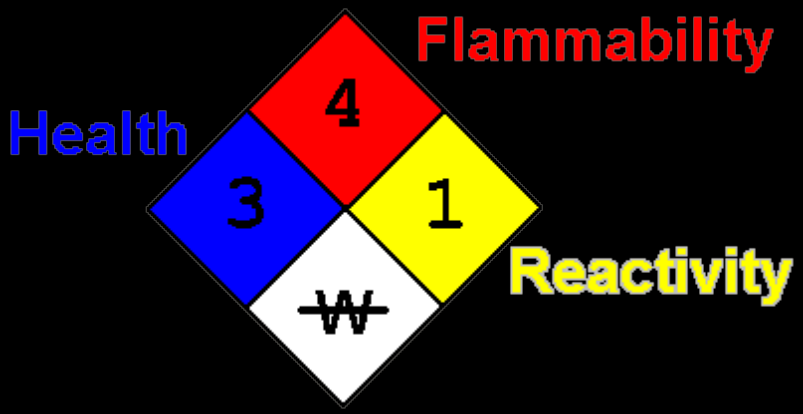


NFPA Labeling Systems

National Fire Protection Association Label

- Blue = Health
- Red = Flammability
- Yellow = Reactivity
- White = Other hazards or special handling

Scale: 0 (No Hazard) to 4 (Extreme Hazard)



Other Label Warnings

- Identity of the chemical
- Name, address, and emergency phone number of the manufacturer
- Physical and health hazards
- Special handling instructions
- Basic PPE recommendations
- First aid, fire response, spill cleanup

(Material) Safety Data Sheet Program

- Reading an MSDS/SDS
- MSDS/SDS locations (employees should ask you the Safety Coordinators for the exact location)

MSDS vs SDS

- Two Systems – at the same time
- Provided by the manufacturer for products that contain hazardous chemical
- Detailed written safety information
- Each product containing hazardous material should have a **MSDS or SDS**
- Available in your area at all times

MSDS vs SDS

- **MSDS** – Required Info.:

1. Product identification
2. Manufacturer identification
3. Hazardous ingredients, Permissible Exposure Limit & Threshold Limit Value
4. Physical & Chemical Properties
5. Physical Hazards

- **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

MSDS vs SDS (cont.)

MSDS (cont.)

6. Health hazards & Potential routes of entry
7. Carcinogenicity
8. Safe use & Handling
9. Control measures/PPE
10. Spill clean-up
11. Emergency & first-aid
12. Date of preparation

SDS (cont.)

8. Exposure controls/ Personal protection
9. Physical/chemical Properties
10. Stability & reactivity
11. Toxicological info.
12-16. Ecological, disposal, transport, regulatory & other information.

Hazard Communication Summary

In summary:

- Identify chemical hazards by reading labels and MSDS/SDS's
- Follow warnings and instructions, or ask your supervisor if in doubt
- Use the correct personal protective equipment (PPE)
- Practice sensible, safe work habits
- Learn emergency procedures

MSDS/SDS

- To find a specific **MSDS** or **SDS**, contact Environmental Health & Safety

  (747) 210-3405

Hazard Communication

Comments

- Questions or comments??

Quiz

Q. Chemical manufacturer's must label containers and provide _____.

A. Material safety data sheets must be provided by the manufacturer.

Q. Employers should keep material safety data sheets in a locked file cabinet. True or False

A. False. MSDS/SDSs must always be accessible to the employees.

Q. Dizziness, nausea, rashes, and respiratory irritation are signs of _____ exposure.

Quiz (cont.)

A. These are all symptoms of acute effects, or short-term exposure.

Q. List three routes by which a chemical can enter the body: _____, _____, _____.

A. The primary routes chemicals enter the body are skin and eye contact, inhalation, and swallowing.

Q. Household chemicals are never as hazardous as chemicals used at work. True or False

A. False. Many household chemicals are more hazardous than chemicals found at work.

Quiz (cont.)

Q. On NFPA labels, a 4 in the red diamond indicates an extreme health hazard. True or False

A. False. The red diamond indicates flammability hazards, not health hazards.

Q. Typical first-aid for chemicals splashed in the eyes includes _____.

A. Flushing the eyes for 15 minutes is the typical first aid for chemicals splashed in the eyes.

Q. You will only know the health hazards and PPE requirements if you _____.

Quiz (cont.)

A. You must read the labels and MSDSs to learn how to protect yourself from the hazards of a chemical.

Q. A _____ can be used to protect against breathing hazardous vapors or gases.

A. Respirators protect against breathing hazardous vapors and gases.

Q. If you see a chemical spill, you should clean it immediately. True or False

A. False. Only attempt to clean a chemical spill if you've been properly trained.

Humco Holding Group, Inc.
7400 Alumax Drive
Texarkana, TX 75501
800-662-3435

Item # 0395-0243

BENZOIN COMPOUND TINCTURE

DATE ISSUED: 04/10/07
DATE REVISED: 02/28/08

SECTION I PRODUCT IDENTIFICATION

PRODUCT NAME: Benzoin Compound Tincture

CAS #: 91845-21-5

SECTION II PHYSICAL DATA

Specific Gravity: 0.94 g/mL **Solubility:** (In water) Insoluble

Alcohol Content: 74 – 80% **Appearance:** Dark brown liquid with a characteristic odor.

SECTION II A DEGREE OF HAZARD

Degree of Hazard

4 - Extreme	Flammability	3
3 - High	Health	2
2 - Moderate	Reactivity	0
1 - Slight	Special Hazard	0
0 - Insignificant		

SECTION III FIRE AND EXPLOSION HAZARDS

Flash Point: 72°F open cup **DOT Hazard Class:** Tinctures, Medicinal UN 1293 Packing Group II

Extinguishing Media: Use water, foam, CO2, or dry chemical to extinguish fire.

Special Firefighting Procedures: Use liberal amounts of water.

Unusual Fire and Explosion Hazards: Contains 74 – 80% Alcohol

Hazardous Combustible or Decomposition Product: None

Conditions & Material to Avoid: Excessive heat, fire, sources of ignition, combustibles, flammables.

Hazardous Polymerization Products: None.

BENZOIN COMPOUND TINCTURE

SECTION IV HEALTH HAZARD DATA

Health Hazard Determination: No chronic health hazard information is available.

Emergency & First Aid Procedures

If on Skin: Thoroughly wash exposed area with soap and water. If irritation occurs, seek medical attention. Launder contaminated clothing before re-use.

If in Eyes: Flush with large amounts of water. Get medical attention immediately.

If Inhaled: If affected, remove individual to fresh air. If breathing is difficult, administer oxygen.

Other: None.

SECTION V PROTECTION INFORMATION

Respiratory: Recommend wearing protective mask. **Ventilation:** General

Eye: Recommend goggles. **Skin:** Recommend gloves.

Other Protective Devices & Procedures: Follow good manufacturing procedures.

SECTION VI OCCUPATIONAL EXPOSURE LIMIT

Threshold Limit Value (TLV): Not established
Permissible Exposure Limit (PEL): Not established.

Has the substance been listed as a carcinogen or potential carcinogen in the "Annual Report on Carcinogens: Published by NIP, by the International Agency for Research on Cancer, or by OSHA? No

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SECTION VII SPILL AND DISPOSAL PROCEDURES

Steps to be taken in the event of a spill or discharge: Use good ventilation. Wear gloves and goggles. Remove sources of ignition. Wet material is slippery. Dike spills to minimize contamination and to contain material. Sweep or scoop up and place in a proper disposal container. Immediately flush with area with alcohol.

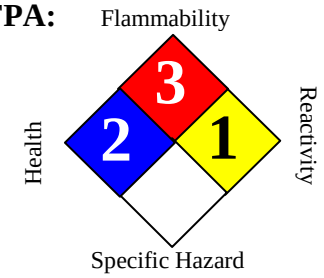
Disposal Procedures: Dispose of properly in accordance with local, state and federal regulations.

SECTION VIII HANDLING & STORAGE

Store in dry, cool area away from sources of heat & fire & direct sunlight.

Safety Data Sheet
Ethanol

NFPA:



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

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.

May cause drowsiness or dizziness. Extreme exposure such as intentional inhalation may cause unconsciousness, asphyxiation and death.

Precautionary statements

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames, welding and hot surfaces.
No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Use explosion-proof electrical equipment.
Use only non-sparking tools (if tools are used in flammable atmosphere).
Take precautionary measures against static discharge.
Wear gloves, eye protection and face protection (as needed to prevent skin and eye contact with liquid).
Wash hands or liquid-contacted skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe vapors.
Use only outdoors or in a well-ventilated area.

Response

In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to extinguish.
If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin or eye irritation persists, get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Get medical attention if you feel unwell.

Storage

Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers. Some containers not approved for gasoline may dissolve and release flammable gasoline liquid and vapors.

Disposal

Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Ethanol; Ethyl alcohol	64-17-5	90 - 95%
Gasoline, natural; Low boiling point naphtha	8006-61-9	5 - 7%
Pentane	109-66-0	0.0 - 1%
Benzene	71-43-2	0.0 - 0.75%
Toluene	108-88-3	0.0 - 0.75%

Butane	106-97-8	0.1 - 0.75%
Xylene	1330-20-7	0.0- 0.75%

SECTION 4. FIRST AID MEASURES

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Contaminated leather, particularly footwear, must be discarded. Note that contaminated clothing may be a fire hazard. If skin irritation persists, seek medical attention.

Eye contact : Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.

Ingestion : If swallowed Do NOT induce vomiting. Aspiration of material into lungs can cause pulmonary edema. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Notes to physician : Symptoms: Dizziness, Discomfort, Headache, Nausea, Kidney disorders, Liver disorders. Aspiration may cause pulmonary edema and pneumonitis. Swallowing ethanol and gasoline mixture is more likely to be fatal for small children than adults, even if aspiration does not occur.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide blanket, Water spray, Dry chemical, Foam, SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Specific hazards during fire fighting : Fire Hazard Fire will produce dense black smoke containing hazardous combustion products (see heading 10). Flash back possible over considerable distance.

Special protective equipment for fire-fighters : Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure.

Further information : Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam. Exposure to decomposition products may be a hazard to health. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water may be subject to disposal regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate personnel to safe areas. Ventilate the area. Remove all sources of

ignition. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental precautions : Do not contaminate surface water. Should not be released into the environment. Authorities should be advised if significant releases cannot be contained.

Methods for cleaning up : Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

: Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:

(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.
(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).
(3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Reports suggest that government-mandated ethanol, if present, may not be compatible with fiberglass gasoline tanks. Ethanol may dissolve fiberglass resin, causing engine damage and possibly allow leakage of explosive gasoline.

: Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

: No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA	Benzene	71-43-2	TWA	1 ppm
		71-43-2	STEL	5 ppm
		71-43-2	OSHA_ACT	0.5 ppm
OSHA Z1	Ethanol; Ethyl alcohol	64-17-5	PEL	1,000 ppm 1,900 mg/m3
	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
ACGIH	Ethanol; ethyl alcohol	64-17-5	TWA	1,000 ppm
	Toluene	108-88-3	TWA	50 ppm
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Benzene	71-43-2	TWA	0.5 ppm
		71-43-2	STEL	2.5 ppm

Engineering measures : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying. Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection : Gloves constructed of nitrile or neoprene are recommended. Consult manufacturer specifications for further information.

Skin and body protection : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

Respiratory protection : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Work / Hygiene practices : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear to straw colored liquid
Odor		Characteristic hydrocarbon-like
Odor threshold		0.5 - 1.1 ppm
pH		Not applicable
Melting point/freezing point		About -101°C (-150°F)
Initial boiling point & range		Boiling point varies: 30 – 200°C (85 – 392°F)
Flash point		< -21°C (-5.8°F)
Evaporation rate		Higher initially and declining as lighter components evaporate
Flammability (solid, gas)		Flammable vapor released by liquid
Upper explosive limit		7.6 %(V)
Lower explosive limit		1.3 %(V)
Vapor pressure		345 - 1,034 hPa at 37.8 °C (100.0 °F)
Vapor density (air = 1)		Approximately 3 to 4
Relative density (water = 1)		0.8 g/mL
Solubility (in water)		Negligible
Partition coefficient (n-octanol/water)		2 – 7 as log Pow
Auto-ignition temperature		Approximately 250°C (480°F)
Decomposition temperature		Will evaporate or boil and possibly ignite before decomposition occurs.
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature)		Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with ”ultra-low conductivities” below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, alkaline products and strong acids. Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.
Conditions to avoid	Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	Ignition and burning can release carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

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 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.

Repeated over-exposure may cause liver and kidney injuries.
Components of the product may affect the nervous system.

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.

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

		Prolonged skin contact may defat the skin and produce dermatitis. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Xylene	1330-20-7	Acute oral toxicity: LD50 rat Dose: 2,840 mg/kg Acute dermal toxicity: LD50 rabbit Dose: ca. 4,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 6,350 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Ethanol; Ethyl alcohol	64-17-5	Acute oral toxicity: LD50 rat Dose: 6,200 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 19,999 mg/kg Acute inhalation toxicity: LC50 rat Dose: 8,001 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Prolonged skin contact may cause skin irritation and/or dermatitis. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Mild eye irritation
Naphthalene	91-20-3	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute dermal toxicity: LD50 rat Dose: 2,501 mg/kg Acute inhalation toxicity: LC50 rat Dose: 101 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Carcinogenicity: N11.00422130
Benzene	71-43-2	Acute oral toxicity: LD50 rat Dose: 930 mg/kg Acute inhalation toxicity: LC50 rat Dose: 44 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.

Pentane	109-66-0	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 364 mg/l Exposure time: 4 h Skin irritation: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Cyclohexane	110-82-7	Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 14 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Ethylbenzene	100-41-4	Acute oral toxicity: LD50 rat Dose: 3,500 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 15,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 18 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.
Heptane [and isomers]	142-82-5	Acute oral toxicity: LD50 rat Dose: 15,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 103 g/m3 Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
N-hexane	110-54-3	Acute oral toxicity: LD50 rat Dose: 25,000 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 171.6 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Teratogenicity: N11.00418960

Carcinogenicity

NTP	Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2)
IARC	Gasoline, natural; Low boiling point naphtha (CAS-No.: 8006-61-9) Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2) Ethylbenzene (CAS-No.: 100-41-4)
OSHA	Benzene (CAS-No.: 71-43-2)
CA Prop 65	WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene (CAS-No.: 108-88-3) Benzene (CAS-No.: 71-43-2)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component:

Ethanol; Ethyl alcohol	64-17-5	Toxicity to fish: LC50 Species: Leuciscus idus (Golden orfe) Dose: 8,140 mg/l Exposure time: 48 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species: Daphnia magna (Water flea) Dose: 9,268 - 14,221 mg/l Exposure time: 48 h
Pentane	109-66-0	Acute and prolonged toxicity for aquatic invertebrates: EC50 Species: Daphnia magna (Water flea) Dose: 9.74 mg/l Exposure time: 48 h
Toluene	108-88-3	Toxicity to fish: LC50 Species: Carassius auratus (goldfish) Dose: 13 mg/l Exposure time: 96 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species: Daphnia magna (Water flea) Dose: 11.5 mg/l Exposure time: 48 h Toxicity to algae: IC50 Species: Selenastrum capricornutum (green algae) Dose: 12 mg/l Exposure time: 72 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name	: Denatured Alcohol
UN-No.	: 1987
Class	: 3
Packing group	: II
Emergency Response Guidebook Number	: 127

TDG

Proper shipping name	: Denatured Alcohol
UN-No.	: UN1987
Class	: 3
Packing group	: II
Emergency Response Guidebook Number	: 127

IATA Cargo Transport

UN UN-No.	: UN1987
Description of the goods	: Denatured Alcohol
Class	: 3
Packaging group	: II
ICAO-Labels	: 3
Packing instruction (cargo aircraft)	: 364
Packing instruction (cargo aircraft)	: Y341

IATA Passenger Transport

UN UN-No.	: UN1987
Description of the goods	: Denatured Alcohol
Class	: 3
Packaging group	: II
ICAO-Labels	: 3
Packing instruction (passenger aircraft)	: 353
Packing instruction (passenger aircraft)	: Y341

IMDG-Code

UN-No.	: UN 1987
Description of the goods	: Denatured Alcohol
Class	: 3
Packaging group	: II
IMDG-Labels	: 3
EmS Number	: F-E S-D
Marine pollutant	: Yes

SECTION 15. REGULATORY INFORMATION

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply**.**

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components	CAS-No.
Benzene	71-43-2
Xylene	1330-20-7
Toluene	108-88-3
Gasoline, natural; Low boiling point naphtha	8006-61-9
Ethanol; Ethyl alcohol	64-17-5

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Components	CAS-No.
Benzene	71-43-2
Xylene	1330-20-7
Toluene	108-88-3
Gasoline, natural; Low boiling point naphtha	8006-61-9
Ethanol; Ethyl alcohol	64-17-5

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Components	CAS-No.
Benzene	71-43-2
Xylene	1330-20-7
Toluene	108-88-3
Gasoline, natural; Low boiling point naphtha	8006-61-9
Ethanol; Ethyl alcohol	64-17-5

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Components	CAS-No.
Toluene	108-88-3

Xylene	1330-20-7
Benzene	71-43-2

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Benzene	71-43-2

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Toluene	108-88-3
Benzene	71-43-2

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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