



# MATERIAL SAFETY DATA SHEET

## Naphtha

MSDS: 962

MSDS DATE: 7/20/2009

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### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME: **Naphtha**

SYNONYMS: Naphtha, Light Straight Run Naphtha, Heavy Straight Run Naphtha, Isomerate, Reformate, Gasoline Blend Stock, Pretreated Naphtha, EAC-100

PRODUCT CODE:	Isomerate	(611200)	Naphtha	(622100)
	Low Octane Reformate	(611300)	High Octane Reformate	(611400)
	EAC-100	(611600)		

This Material Safety Data Sheet applies to the listed materials and synonym descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the material and are not reflected in this document. Consult specification sheets for technical information. This material contains ingredients that are considered to be hazardous as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**IMPORTANT:** Read this MSDS before handling or disposing of this material. Pass this information on to employees, customers and material users.

MANUFACTURER: U. S. OIL & REFINING CO.  
ADDRESS: 3001 Marshall Ave., Tacoma, WA 98421

EMERGENCY PHONE: (253)-383-1651  
FAX PHONE: (253)-272-2495  
CHEMTREC PHONE: (800) 424-9300  
NATIONAL RESPONSE: (800) 424-8802

CHEMICAL NAME: Petroleum Naphtha  
CHEMICAL FAMILY: Hydrocarbon

PRODUCT USE: Product is a complex mixture of petroleum hydrocarbons that contain hydrocarbons in the C<sub>4</sub>-C<sub>10</sub> range. This product is used as a feedstock or blend stock for production of gasoline.

PREPARED BY: U.S. OIL & REFINING CO.

CAS #: Mixture

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## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

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This product is a complex blend of hydrocarbons derived from various refinery streams. It contains primarily paraffinic, olefinic, naphthenic, and aromatic hydrocarbons. This product may also contain up to 4.9% benzene.

<u>Name</u>	<u>CAS NUMBER</u>	<u>CONCENTRATION %</u>
PETROLEUM DISTILLATES (NAPHTHA)		100%
TOLUENE	108-88-3	0-16%
BENZENE	71-43-2	0-4.9%
CYCLOHEXANE	110-82-7	0-7%
ETHYLBENZENE	100-41-4	0-4.5%
NAPHTHALENE	91-20-3	0-1%
N-HEXANE	110-54-3	0-16%
1,2,4- TRIMETHYLBENZENE	95-63-6	0-5%
XYLENES	1330-20-7	0-21%
CUMENE	98-82-8	0-0.5%

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## SECTION 3: HAZARDS IDENTIFICATION

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**Danger!** This product is a highly flammable liquid and vapor. This product contains petroleum hydrocarbons that can pose health risks. Avoid liquid, mist and vapor contact. Harmful or fatal if swallowed. Aspiration hazard, can enter lungs and cause damage. May cause irritation or be harmful if inhaled or absorbed through the skin. Avoid prolonged or repeated skin contact. This product may contain or release Hydrogen Sulfide a highly toxic, highly flammable gas which can be fatal if inhaled at certain concentrations.

**PHYSICAL STATE:** Clear, Bright Liquid / Vapor,

**ROUTES OF ENTRY:** Dermal Contact. Eye Contact. Inhalation. Ingestion.

### **POTENTIAL HEALTH EFFECTS**

**EYES:** May cause eye irritation, stinging, watering, redness and swelling.

**SKIN:** Prolonged or repeated skin contact tends to remove skin oils, possibly leading to irritation and dermatitis. It is likely that some components can enter the body by passing through the skin and may cause similar effects as inhaling or ingesting this product.

**INGESTION:** May irritate the mouth, throat and stomach. This material may cause nausea, vomiting, dizziness, drowsiness, diarrhea, and other central nervous system effects. **DO NOT INDUCE VOMITING.** Aspiration into the lungs can cause chemical pneumonitis.

**INHALATION:** May cause headache, nausea, blurred vision, and other central nervous system effects. Extremely high concentrations may cause dizziness, loss of consciousness and death. Hydrogen sulfide can evolve from this product, which can cause dizziness, nausea, headache or death.

### **MEDICAL CONDITIONS GENERALLY AGGRAVATED**

**BY EXPOSURE:** This product may contain up to 4.9 weight percent benzene. Benzene can cause anemia, and other blood diseases, including leukemia. Benzene has been classified as a human carcinogen by the EPA, OSHA and IARC. Benzene is also considered a mutagen.

The presence of n-hexane in this product represents a distinct hazard of producing peripheral polyneuropathy, a progressive disorder of the nervous system, which with sufficiently high exposure has the potential of becoming irreversible. Adverse effects include numbness, tingling, pain and loss of muscle control.

Disorders associated with skin, liver, respiratory system, and central nervous system may be aggravated by significant exposure to this product.

### **OVER-EXPOSURE SIGNS/SYMPTOMS:**

Nasal and respiratory tract irritation, central nervous system effects including excitation, euphoria, dizziness, drowsiness, delirium, nausea, headache, seizures, or sudden death could occur as a result of long term and/or high concentration exposure to vapors. May also cause anemia and irregular heart rhythm.

**See Toxicological Information (Section 11)**

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## **SECTION 4: FIRST AID MEASURES**

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**EYES:** Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if pain or redness continues.

**SKIN:** In case of contact, immediately flush skin with large amounts of water for at least 15 minutes. Remove contaminated clothing promptly and launder before reuse. Contaminated leather goods should be discarded. Wash exposed area thoroughly with soap and water. If irritation persists or symptoms described in the MSDS develop, seek medical attention.

**INGESTION:** This material may cause nausea, vomiting, diarrhea and restlessness. **DO NOT INDUCE VOMITING.** Aspiration into the lungs presents a significant chemical pneumonitis hazard. Obtain medical attention promptly. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

**INHALATION:** If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

### **NOTES TO PHYSICIANS**

**OR FIRST AID PROVIDERS:** In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption. Individuals intoxicated by the material should be hospitalized immediately, with acute and continuing attention to neurological and cardiopulmonary function. Positive pressure ventilation may be necessary. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

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## SECTION 5: FIRE-FIGHTING MEASURES

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**FLAMMABILITY OF THE PRODUCT:** Flammable

**FLAMMABLE LIMITS IN AIR,  
(% BY VOLUME)** LOWER: Approximately 1.1  
UPPER: Approximately 8.2

**FLASH POINT:** Approximately – 43°C (ASTM D-56)

**AUTOIGNITION TEMPERATURE:** Approximately 530 °F

**PRODUCTS OF COMBUSTION:** These products are carbon oxides (CO, CO<sub>2</sub>), water vapor, smoke, fumes, unburned hydrocarbons and other products of incomplete combustion.

**FIRE HAZARDS IN THE  
PRESENCE OF VARIOUS  
SUBSTANCES:**

Extremely flammable! This material releases vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, these vapors can burn in the open or explode in confined spaces. Vapors are heavier than air, and can travel long distance along the ground before reaching a point of ignition and flashing back.

**EXPLOSION HAZARDS IN THE  
PRESENCE OF VARIOUS  
SUBSTANCES:**

Explosive in the presence of open flames, sparks, heat and static discharge. Vapors may create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers.

**FIRE-FIGHTING MEDIA  
AND INSTRUCTIONS:**

Flammable liquid and vapor. Use dry chemical, foam, or carbon dioxide to extinguish the fire. Consult foam manufacturer for appropriate media, application rates and water/foam ratio. Water spray may be used to disperse vapors and/or flush spills away from source of ignition. Water spray can be used to cool tanks and exposures. Vapor suppressing foam may be used to suppress vapors.

Vapor may cause flash fire. Vapors are heavier than air and may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flashback. Runoff to sewer may create fire or explosion hazard.

**SPECIAL FIRE FIGHTING  
EQUIPMENT:**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**UNUSUAL FIRE AND  
EXPLOSION HAZARDS:**

This material will release flammable vapors which if exposed to a source of ignition can burn or be explosive in confined spaces. Keep away from heat and open flame.

**FIRE FIGHTING  
ADDITIONAL ADVICE:**

Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

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## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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### **PERSONAL**

#### **PRECAUTIONS:**

Immediately contact emergency personnel. An accidental release will cause an immediate fire or explosion hazard. Eliminate all ignition sources and stop spill/release if it can be done without risk. Isolate hazard area and restrict entry to emergency crew. Stay upwind and away from spill and notify personnel downwind. Keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant. (Section 8). Do not enter or stay in area unless monitoring indicates that it is safe to do so.

Do not touch or walk through spilled material. Tanks, vessels or other confined spaces which have contained material should be freed of vapors before entering. The container should be checked to ensure a safe atmosphere before entry. Empty containers may contain toxic, flammable, or explosive residues or vapors. Do not cut, grind, drill, weld or reuse empty containers that contained this material. Do not transfer this material to another container unless the container receiving the material is labeled with proper DOT shipping name, hazard class and other information that describes the material and its hazards.

### **ENVIRONMENTAL**

#### **PRECAUTIONS**

Contain spill in smallest possible area. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures.

Flammable. Review Fire Fighting Measures Section before proceeding with clean up.

Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 800-424- 8802. For highway or railway spills, contact Chemtrec at 800-424-9300. Additional reporting may be required to state and local agencies.

### **METHODS FOR**

#### **CLEANING UP:**

Contain spilled material to ensure runoff does not reach a drainage ditch or waterway. Do not flush away residues with water. For small spills, use absorbent pads or add absorbent (soil may be used in the absence of other suitable materials) and use a nonsparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain to facilitate removal with appropriate spill response personnel and equipment. Place spilled material in an appropriate container for disposal and dispose in accordance with Federal, State and Local regulations. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

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## SECTION 7: HANDLING AND STORAGE

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### HANDLING

Highly flammable liquid and vapor. Keep containers closed except when ready to use. Open container slowly to relieve any pressure. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Do not ingest. Do not get in eyes, on skin or on clothing. Use only with adequate ventilation. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Wash thoroughly after handling. In case of fire, use foam, dry chemical or carbon dioxide as described in the Fire Fighting Measures Section of the MSDS. "Empty" container contains residue (liquid and/or vapor) and may explode in heat of a fire. Do not pressurize, cut, weld, braze, solder, or drill on or near this container. Use good personal hygiene practices. After handling this material, wash hands before eating, drinking, or using toilet facilities. Keep out of reach of children. Failure to use caution may cause serious injury or illness. To prevent ingestion and exposure - Do not siphon by mouth to transfer material between containers. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

### STORAGE:

Store in a segregated and approved area. Only store this product in approved and properly labeled containers and keep containers tightly closed and sealed until ready to use. Post area "No Smoking or Open Flame". Avoid all possible sources of ignition (spark or flame). Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes. Keep container in a cool, dry, well-ventilated area. Containers should be able to withstand pressures expected from warming or cooling in storage. Drums must be equipped with self closing valves, pressure vacuum bungs, and flame arresters. Protect containers against physical damage. Post area "No smoking or Open Flame". "Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.



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## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**ENGINEERING CONTROLS:** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

### **PERSONAL PROTECTION**

**SKIN:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this material. Flame Retardant (FR) Clothing may be recommended.

**RESPIRATORY:** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the material and the safe working limits of the selected respirator.

**HANDS:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical materials if a risk assessment indicates this is necessary. Suggested protective materials: Nitrile.

**Eye:** Eye protection (chemical-type goggles and/or face shield) should be worn whenever there is a likelihood of splashing or spraying liquid. Contact lenses should not be worn. Eye wash water should be provided.

**Other:** Use good personal hygiene practices. In case of skin contact, wash with mild soap and water or a waterless hand cleaner. Immediately remove soiled clothing and wash thoroughly before reuse. Discard oil-soaked leather goods.

## SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

**PROTECTIVE CLOTHING OR EQUIPMENT:** GLOVES, HARDHAT, FACE SHIELD, BOOTS, SAFETY GLASSES, RESPIRATOR, FR CLOTHING

**PERSONAL PROTECTIVE EQUIPMENT IN CASE OF A LARGE SPILL:** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the material. Suggested protective clothing might not be adequate. Consult a specialist before handling this material.

### Established Occupational Exposure Limits

Substance	Value	Time/Type	Source
PETROLEUM DISTILLATES (NAPHTHA)	350 PPM 500 PPM	TWA STEL	NIOSH OSHA
BENZENE	0.5 PPM 2.5 PPM 1 PPM 5 PPM 500 PPM	TWA – Skin STEL - Skin TWA STEL IDLH	ACGIH ACGIH OSHA OSHA NIOSH
CYCLOHEXANE	300 PPM	TWA	OSHA/ACGIH
ETHYLBENZENES	100 PPM 125 PPM 800 PPM	TWA STEL IDLH	OSHA/ACGIH ACGIH NIOSH
TRIMETHYLBENZENES	25 PPM	TWA	ACGIH
NAPHTHALENE	10 ppm 15 ppm	TWA STEL	OSHA/ACGIH OSHA/ACGIH
N-HEXANE	50 PPM 500 PPM 1,100 PPM	TWA – Skin TWA IDLH	ACGIH OSHA NIOSH
TOLUENE	50 PPM 100 PPM 150 PPM 200 PPM 300 PPM 500 PPM 500 PPM	TWA – Skin TWA STEL TWA CEIL IDLH 10 min peak/8 hr shift	ACGIH NIOSH NIOSH OSHA OSHA OSHA OSHA
XYLENES	100 PPM 150 PPM 900 PPM	TWA STEL IDLH	OSHA/ACGIH ACGIH NIOSH
HYDROGEN SULFIDE	10 PPM 15 PPM	8 hr PEL 15 min STEL	OSHA OSHA

Consult local authorities for acceptable exposure limits.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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<b>PHYSICAL STATE</b>	Liquid.
<b>COLOR</b>	Transparent, clear to amber
<b>ODOR</b>	Petroleum hydrocarbon, Gasoline odor
<b>BOILING POINT</b>	90-400 °F
<b>SPECIFIC GRAVITY</b>	0.64-0.83 (Water = 1)
<b>VISCOSITY:</b>	0.1 cSt @ 25 °C
<b>VAPOR PRESSURE</b>	Approximately 5-15 psi Reid Vapor Pressure (@ 100 °F)
<b>VAPOR DENSITY</b>	Approximately 3.5 (Air = 1)
<b>VOLATILITY</b>	Appreciable
<b>MATERIALS TO AVOID:</b>	Strong oxidizers or strong acids
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Burning or excessive heating may produce carbon monoxide, smoke, unburned hydrocarbons and other harmful gases.

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## SECTION 10: STABILITY AND REACTIVITY

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<b>STABILITY AND REACTIVITY:</b>	The material is stable. Stable under normal ambient and anticipated conditions of storage and handling. Extremely flammable liquid and vapor. Vapor can cause flash fire.
<b>INCOMPATIBILITY WITH VARIOUS SUBSTANCES:</b>	Avoid strong oxidizing agents (chlorates, nitrates, peroxides, and liquid chlorine), acids, alkalis.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	These products are carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), particulate matter, and VOC's.
<b>HAZARDOUS POLYMERIZATION:</b>	Not expected to occur.
<b>CONDITIONS TO AVOID (STABILITY):</b>	Heat, sparks, open flame, and build up of static electricity. Avoid high temperatures and all sources of ignition. Keep away from strong oxidizing agents.

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## SECTION 11: TOXICOLOGICAL INFORMATION (Continued)

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### TOXICITY DATA

**CARCINOGENICITY:** Benzene has been identified by the EPA and IARC as a human carcinogen. Gasoline mixtures are listed as a possible carcinogen by IARC and NIOSH. Risk of cancer depends on duration and level of exposure.

**TARGET ORGANS:** Potential components which have demonstrated developmental and or target organ issues include: n-hexane, toluene, xylenes, benzene, ethyl benzene, trimethylbenzene, cyclohexane, and naphthalene.

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## SECTION 12: ECOLOGICAL INFORMATION

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**ECOLOGICAL INFORMATION:** This product is potentially toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water. On release to the environment the lighter, product components will readily evaporate, but the remainder may become dispersed in the water column or adsorbed to soil or sediment. Primary components of this product are considered biodegradable in aerobic conditions.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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**WASTE DISPOSAL** The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Due to the varying nature of the material, any generated wastes will require an adequate characterization of physical and chemical properties to ensure proper disposal. Disposal of this material, solutions and any by-products should at all times comply with all applicable federal, state, and local environmental regulations.

Consult your state and local authorities.

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## SECTION 14: TRANSPORT INFORMATION

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Regulatory Information	UN Number	Emergency Response Guidebook	Proper shipping name	Class	Packing Group
DOT Classification	UN1268	Guide 128	Petroleum Distillates, n.o.s.	3	I
International Maritime Dangerous Goods (IMDG)	UN1268		Petroleum Distillates, n.o.s.	3	I
International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)	UN1268		Petroleum Distillates, n.o.s.	3	I

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## SECTION 15: REGULATORY INFORMATION

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**U.S. FEDERAL  
REGULATIONS:**

**EPA SARA Sections 302, 304 & 313 and CERCLA :**

This material contains the following chemicals subject to the reporting requirements of SARA 302, SARA 304, SARA 313, CERCLA and 40 CFR 372:

Chemical Name	CAS Number	Material Concentration (vol%)	CERCLA/SARA Section 302 TPQ (lbs.)	CERCLA/SARA Section 304 RQ (lbs.)
CUMENE	98-82-8	<0.5		5,000
BENZENE	71-43-2	<4.9		10
CYCLOHEXANE	110-82-7	<2		1,000
ETHYLBENZENE	100-41-4	<2		1,000
1,2,4 TRIMETHYLBENZENE	95-63-6	<5		
NAPHTHALENE	91-20-3	<1		100
N-HEXANE	110-54-3	<16		5,000
TOLUENE	108-88-3	<16		1,000
XYLENES	1330-20-7	<21		100

**Carcinogen Identification:**

This mixture may contain chemicals that have been identified as a carcinogen by NTP, IARC, or OSHA.

**EPA SARA 311/312 Title III Hazard Categories:**

**Acute Health Hazard: Yes**  
**Chronic Health Hazard: Yes**  
**Fire Hazard: Yes**  
**Pressure Hazard: No**  
**Reactive Hazard: No**

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## SECTION 16: OTHER INFORMATION

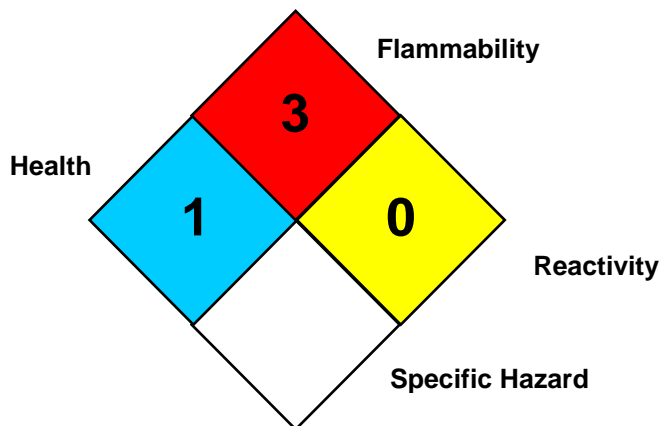
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HAZARDOUS MATERIAL  
INFORMATION SYSTEM  
(U.S.A.)

HMIS III		
HEALTH	*	2
FLAMMABILITY		3
PHYSICAL HAZARD		
PERSONAL PROTECTION		

\* Chronic Health Hazard

NATIONAL FIRE PROTECTION  
ASSOCIATION (U.S.A.)



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