SAFETY DATA SHEET

SECTION 1 ◆ IDENTIFICATION

Explorer Pipeline Company 6120 South Yale Ave., Suite 1100 Tulsa, OK 74136	**FOR EMERGENCY SOURCE INFORMATION CONTACT:** ✦ (918) 493 - 5100	
Naphtha - Isomerized, Naphtha - Light, Naphtha - Heavy, Naphtha Mix, Natural Gasoline, Alkylate, Reformate, Iso-Octane, Raffinate, HUF/Toluene and Naphtha (No DRA) **EPL Code:** 1E and 10-19	**CHEMICAL FAMILY:** Hydrocarbon Mixture(Aromatic and Paraffinic)	**PRODUCT USES:** Feedstock

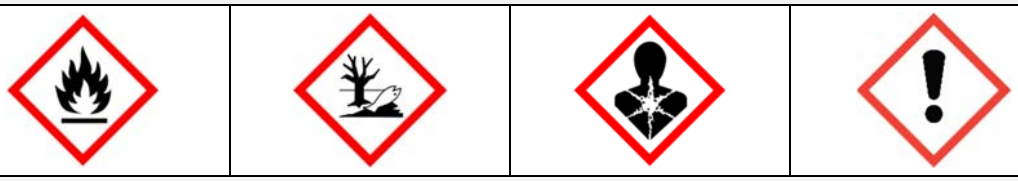
SECTION 2 ✷ HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Flammable liquids – Category 2	Skin corrosion/irritation – Category 2
Carcinogenicity - Category 1A	Aspiration Hazard – Category 1
Specific Target Organ Toxicity (Repeat Exposure) - Category 1 (liver, kidneys, bladder, blood, bone marrow, nervous system)	Specific target organ toxicity (single exposure) – Category 3
Hazardous to the Aquatic Environment – Chronic Hazard - Category 2	Eye Damage/Irritation – Category 2B
May contain or release poisonous hydrogen sulfide gas	

GHS LABEL ELEMENTS

BLEND STOCK

GHS PICTOGRAMS	SIGNAL WORD
	**DANGER**

HAZARD STATEMENTS

Highly flammable liquid and vapor.	May be fatal if swallowed and enters airways.
Harmful if inhaled.	May cause irritation of respiratory system.
Causes skin irritation.	Causes eye irritation.
May cause drowsiness or dizziness.	Causes damage to liver, kidneys, blood and nervous system through prolonged or repeated exposure.
May cause cancer.	Suspected of causing genetic defects.
Toxic to aquatic life.	May cause drowsiness or dizziness.

PRECAUTIONARY STATEMENTS

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed.	
Ground/bond container and receiving equipment.	Use only non-sparking tools.
Use explosion-proof electrical/ ventilating/ lighting/equipment.	
Take precautionary measures against static discharge.	Keep out of reach of children
Wear protective gloves/protective clothing/eye protection/face protection.	
Wash hands and forearms thoroughly after handling.	Obtain special instructions before use.

Do not breathe mist/vapors/spray.		Use only outdoors or in well-ventilated area.	
Do not eat, drink or smoke when using this product.		Avoid release to the environment.	
Do not handle until all safety precautions have been read and understood.			
Response			
In case of fire: Use water spray, fog, dry chemical fire extinguishers or hand held fire extinguisher.			
IF exposed or concerned: Get medical advice/attention.			
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.			
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.			
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or doctor/physician if you feel unwell.			
Get medical advice/attention if you feel unwell.			
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.			
Storage			
Store in a well-ventilated place	Keep cool	Store locked up	Keep container tightly closed
Disposal			
Dispose of contents/container in accordance with local/regional/national/international regulations.			
SUPPLIER INFORMATION			
Explorer Pipeline Company	6120 South Yale Ave., Suite 1100	Tulsa, Oklahoma 74136	

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Naphtha (mixture)	8030-30-6	0-95
Toluene	108-88-3	0-95
Alkylate	64741-64-6	0-95
Iso-octane	26635-64-3	0-95
Reformate	68514-79-4	0-95
Raffinate	8030-30-6	0-95
Pentane	109-66-0	0-30
n-Hexane	110-54-3	0-25
Benzene	71-43-2	0-10
Ethyl Benzene	100-41-4	0-7
1,2,4-Trimethylbenzene	95-63-6	0-5
Hydrogen Sulfide	7783-06-4	<0.0001

SECTION 4 ✚ FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids, Get Medical Aid.

SKIN: Quickly remove contaminated clothing and immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

INGESTION: Do not induce vomiting. Call a physician and/or transport to an emergency facility immediately.

INHALATION: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give cardiopulmonary resuscitation. If breathing is difficult, give medical oxygen.

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 ⌘ FIRE-FIGHTING MEASURES

SEE SECTION 9 FOR FLAMMABILITY PROPERTIES

HIGHLY 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. Being heavier than air, flammable vapors may travel long distances along the ground before reaching a point of ignition and flashing back.

SUITABLE EXTINGUISHING MEDIA: Water fog, dry chemical, foam, or Carbon Dioxide. Use water spray to cool nearby containers and structure exposed to fire. Water fog or spray are of value in cooling tanks and containers but may not achieve extinguishment.
HAZARDOUS REACTIONS/DECOMPOSITION: Burning or excessive heating may produce carbon monoxide and carbon dioxide, also other harmful gases/vapors including oxides and/or other compounds of chlorine, manganese, and bromine.
SPECIAL PROTECTIVE ACTIONS FOR FIREFIGHTERS: For fires involving this material, do not enter any enclosed or confined space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies. If firefighters cannot work upwind of the fire, respiratory protective equipment must be worn. Cool tanks and containers exposed to fire with water. Burning liquid will float on water. Notify appropriate authorities if liquid enters sewer/waterways.

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate personnel to safe areas. Use personal protective equipment. All equipment used when handling the product must be grounded. Ensure adequate ventilation. Take precautionary measures against static discharges. Keep people away from and upwind of spill/leak. Stop leak if you can do so without risk.
METHODS FOR CONTAINMENT	A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Dike far ahead of liquid spill for later disposal.
METHODS FOR CLEANING UP	Use clean non-sparking tools to collect absorbed material. Dike far ahead of liquid spill for later disposal.
OTHER INFORMATION	Water spray may reduce vapor but may not prevent ignition in closed spaces.

SECTION 7 ✂ HANDLING AND STORAGE

Prior to working with this product workers should be trained on its proper handling and storage

PRECAUTIONS FOR SAFETY HANDLING	✦ Do not siphon by mouth. ✦ Handle as a flammable liquid. ✦ Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion. ✦ 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) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out of Static, Lightning and Stray Currents."
STORAGE PROCEDURES	✦ Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. ✦ Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. ✦ Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". ✦ Avoid storage near incompatible materials.
INCOMPATIBILITIES	✦ Keep away from strong oxidizers.

SECTION 8 ⌗ EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH TLV (2019)	OSHA PEL	NIOSH IDLH
Naphtha Hydrocarbons (Aromatic & Paraffinic)	Not Applicable	TWA: 100 ppm Based on Coal Tar Naphtha	Not Applicable

n-Pentane	TWA: 600 ppm	TWA: 1,000	120 ppm (REL) 1,500 ppm
Hexane	TWA: 50 ppm *Skin*	TWA: 500	1,100 ppm
Octane (All isomers)	TWA: 300 ppm	TWA: 500 ppm	1,000 ppm
Toluene	TWA: 20 ppm	TWA: 200 ppm	500 ppm
Benzene	TWA: 0.5 ppm STEL: 2.5 ppm *Skin*	TWA: 1 ppm STEL: 5	500 ppm
Ethyl benzene	TWA: 20 ppm	TWA: 100 ppm	800 ppm
1,2,4 Trimethyl benzene	TWA: 25 ppm	Not Applicable	Not Applicable
Naphthalene	TWA: 10 ppm STEL: 15 ppm *Skin*	TWA: 10 ppm	250 ppm
Hydrogen Sulfide	TWA: 1 ppm STEL: 5 ppm	Ceiling: 20 ppm Peak: 50 ppm	100 ppm

ENGINEERING CONTROLS: Use adequate ventilation to keep vapor concentrations of this product below occupational exposure limits and flammability limits, particularly in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

- **EYES:** Eye protection (ANSI Z87.1 approved) should be worn whenever there is a likelihood of misting or splashing/spraying liquid. Suitable eyewash station should be available. Contact lenses must not be worn.
- **SKIN/BODY:** Chemical protective clothing is recommended based on a thorough PPE hazard assessment. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for specific information.
- **HAND PROTECTION:** Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for specific information.
- **RESPIRATORY PROTECTION:** A NIOSH approved air purifying respirator (APR) with properly selected cartridges may be permissible under certain circumstances where airborne concentrations may exceed exposure limits. Protection provided by APRs is limited, calculate the maximum use concentration for the exposure situation. Use a positive pressure air supplied (Grade D) respirator if there is any potential for an uncontrolled release, exposure levels are not known or any other circumstances where APRs may not provide adequate protection.
- **OTHER HYGIENIC AND WORK PRACTICES:** Safety shower and eyewash or equivalent should be available for emergency use. Use good personal hygiene practices. In case of skin contact, wash with mild soap and water or a waterless hand cleaner. Immediately remove soaked clothing and wash thoroughly before reuse.

SECTION 9 ϟ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG)**:** 23 to 116 °F/-5 to 47 °C	**PERCENT VOLATILE BY VOLUME:** 100%
SPECIFIC GRAVITY (H_2O = 1): 0.716 - 0.78	**VISCOSITY UNITS, TEMP:** No Data
EVAPORATION RATE (BuAc = 1): Unavailable	**VAPOR DENSITY (AIR =1):** >1.0
VAPOR PRESSURE AT 38 °C**:** 62 - 961 mm Hg	**SOLUBILITY IN WATER:** Negligible
APPEARANCE AND ODOR: Clear liquid, petroleum odor.	
FLASH POINT: (Method Used) <100 °F/<38 °C	**FLAMMABLE LIMITS:** % LEL: 1 % vol Literature Approx. % UEL: 7 % vol Literature Approx.
AUTOIGNITION TEMPERATURE: No data	**VOC CONTENT:** 100%

SECTION 10 ¤ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures

HAZARDOUS REACTION POTENTIAL: Will not occur

CONDITIONS TO AVOID: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

INCOMPATIBLE PRODUCTS: Keep away from strong oxidizers.

MATERIALS TO AVOID: Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

HAZARDOUS POLYMERIZATION: Has not been reported

OTHER PHYSICAL AND CHEMICAL PROPERTIES:

SECTION 11 ❁ TOXICOLOGICAL INFORMATION

N-PENTANE

Inhalation of very high concentrations of pentane (>10% in air) may cause narcosis and irritation of the mucous membranes (eye, noise, and throat). In humans, inhalation of 5000 ppm for 10 minutes failed to cause these symptoms. There is no report in the literature indicating any adverse effects from pentane other than narcosis and irritation.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	446 g/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	364 g/M^3

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: Liver damage

CARCINOGENICITY

IARC	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed as carcinogen	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Skin-rabbit: skin irritation	Serious eye damage, irritation-rabbit: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: RZ9450000	

OCTANE

Octane can affect the body if it is inhaled, comes in contact with the skin or eyes or is swallowed. Octane vapor is a mild narcotic and mucous membrane irritant. No chronic systemic effects have been reported in humans.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Mouse	No Data	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	118 g/M^3

Specific organ toxicity, single exposure: May cause drowsiness	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available

Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: RG8400000	

RAFFINATE

Harmful if inhaled, absorbed through skin, or swallowed. Aspiration may cause lung damage. Irritating to eyes, respiratory system and skin. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	>5,000 mg/kg	$LD_{50(dermal)}$	Rabbit	>2,000 mg/kg	$LC_{50(inh)}$	Rat (4 hours)	>7.6 g/M^3

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Group 2B: Possibly carcinogenic to humans
NTP	Not Listed

California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: Not expected to cause effects	Teratogenicity: No data available
Skin Corrosion/irritation: May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.	Serious eye damage, irritation: Contact with eyes may cause moderate to severe irritation
Synergistic effects: No data available	Aspiration hazard: May be fatal if aspirated and enters airway
From Literature	

HEXANE

May cause respiratory tract irritation. Exposure produces central nervous system depression. Inhalation of vapors may cause drowsiness and dizziness. Chronic exposure may cause liver damage. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	15.8 g/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	48,000 ppm

Specific organ toxicity, single exposure: May cause drowsiness or dizziness	Specific organ toxicity, repeated exposure: may cause damage to organs from repeated or prolonged exposure. May cause nervous system damage.

CARCINOGENICITY

Testicular tumors shown in rats.

IARC	Not Listed
NTP	Not Listed

California (Prop 65): Not listed as carcinogen	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available

Reproductive toxicity: overexposure may cause reproductive disorders based on lab animals. May damage fertility in humans.	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation -rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: May be fatal if swallowed and enters airway.
RTECS #: MN9275000	

TOLUENE

The most common effect of overexposure to toluene is irritation of the mucous membranes, skin and central nervous system depression (headaches, lassitude, light-headedness, incoordination, fatigue, decreased reaction time, etc.). Unlike closely related compound benzene, toluene does not appear to be toxic to the bone marrow. No synergistic effects data available. For the skin, prolonged and repeated exposure can caused defatting and dermatitis.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	636 mg/kg	$LD_{50(dermal)}$	Rabbit	14.1 mL/kg	$LC_{50(inh)}$	Rat (4 hours)	49 g/M^3

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Inadequate evidence in animals	Inadequate evidence in humans	Group 3: not classifiable as a human carcinogen
NTP	Not Listed		

California (Prop 65): Listed as carcinogen	**NIOSH:** Not Listed	**ACGIH:**A4-Not Classifiable As Human Carcinogen	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: Genotoxicity in vitro-rat: Liver and DNA damage
Reproductive toxicity: Have been shown in male/female rats	Teratogenicity: Developmental-rat: Fetotoxicity, stunted fetus. Suspected human reproductive toxicity.
Skin Corrosion/irritation: Skin-rabbit: irritation over 24 hours	Serious eye damage, irritation -rabbit: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: XS5250000	

BENZENE

Acute inhalation effects may cause respiratory tract irritation drowsiness, unconsciousness, and central nervous system depression. Potential symptoms of overexposure by inhalation are dizziness, headache, vomiting, visual disturbances, staggering gait, hilarity, fatigue, and other symptoms of CNS depression.

Chronic exposures may cause bone marrow abnormalities with damage to blood forming tissues. May cause anemia and other blood cell abnormalities. Chronic exposure to benzene has been associated with an increased incidence of leukemia and multiple myeloma (tumor composed of cells of the type normally found in the bone marrow). This substance has caused adverse reproductive and fetal effects in laboratory animals.

Toxicity								
Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	930 mg/kg	$LD_{50(dermal)}$	Rabbit	9.4 ml/kg	$LC_{50(inh)}$	Mouse (4 hours)	9,980 ppm

Specific organ toxicity, single exposure: May cause drowsiness or dizziness	Specific organ toxicity, repeated exposure: may cause damage to organs from repeated or prolonged exposure. May cause nervous system damage.

CARCINOGENICITY

IARC	Sufficient evidence in animals	Sufficient evidence in humans	Group 1: classifiable as a human carcinogen
NTP	Carcinogen		

California (Prop 65): Listed as carcinogen	**NIOSH:** Potential Occupational Carcinogen	**ACGIH:** A1 - Confirmed human carcinogen	**OSHA:** Select Carcinogen

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: lab testing shows mutagenic effects (in vivo). Genotoxicity in humans (in vivo) lymphocyte. Genotoxic damage shown in mice.
Reproductive toxicity: inhalation toxicity in mouse, including embryonic and fetal effects including death	Teratogenicity: Rat inhalation include effects include stunted fetus and death Mouse inhalation include effects include cytological changes and abnormalities to blood and lymphatic system.
Skin Corrosion/irritation: will cause skin irritation	Serious eye damage, irritation -rabbit: mild eye irritation
Synergistic effects: damage to bone marrow	Aspiration hazard: May be fatal if swallowed and enters airway.
RTECS #: CY1400000	

ETHYL BENZENE

Exposure to ethyl benzene may cause irritation of the skin and mucous membranes. It may also cause transient eye irritation at concentrations of 200 ppm. Breathing very high levels can cause dizziness and throat and eye irritation. Breathing lower levels has resulted in hearing effects and kidney damage in animals.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	3.5 g/kg	$LD_{50(dermal)}$	Rabbit	17.8 mL/kg	$LC_{50(inh)}$	Rat (4 hours)	55 g/M^3

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Sufficient evidence in animals	Inadequate evidence in humans	Group 2B: Possibly carcinogenic to humans
NTP	Not Listed		

California (Prop 65): Listed as carcinogen	**NIOSH:** Occupational Carcinogen	**ACGIH:** A4-Not Classifiable As Human Carcinogen	**OSHA:** Possible Select Carcinogen

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation-rabbit: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: DA0700000	

1,2,4 TRIMETHYL BENZENE

Acute inhalation effects respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. May cause drowsiness, unconsciousness, and central nervous system depression. Vapors may cause dizziness or suffocation. Prolonged or repeated skin contact may cause dermatitis. May cause anemia and other blood cell abnormalities. Prolonged exposure may produce a narcotic effect. Prolonged or repeated exposure may cause nausea, dizziness, and headache.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	5.0 g/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	18 g/M^3

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed as carcinogen	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: test performed on rats showed negative results
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation -rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: May be fatal if swallowed and enters airway.

RTECS #: DC3325000

NAPHTHALENE

Inhalation may cause respiratory tract irritation. Hemolytic anemia (destruction of red blood cells) is the primary health concern for humans exposed to naphthalene for either short or long periods of time. Other effects may include nausea, profuse perspiration, vomiting, kidney damage and liver damage. Chronic exposure may cause lung damage.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	490 mg/kg	$LD_{50(dermal)}$	Rabbit	>20 g/kg	$LC_{50(inh)}$	Rat (1 hour)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Sufficient evidence in animals	Inadequate evidence in humans	Group 2B: Possibly carcinogenic to humans
NTP	Listed as reasonably anticipated to be a human carcinogen		
California (Prop 65): Listed as carcinogen	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available

RTECS #: QJ0525000

HYDROGEN SULFIDE

Hydrogen sulfide is a toxic, flammable colorless gas with a distinct "rotten-egg" smell. Inhalation of high concentrations can cause severe eye, nose and mucous membrane damage, dizziness, headache, and nausea. Exposure to higher concentrations can result in unconsciousness, coma, and death. Chronic exposure can damage memory, nerve tissue, facial muscles, and eyes.

Toxicity

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$ Solution	Rat	2,300 µg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Mouse (1 hour)	634 ppm

Specific organ toxicity, single exposure: May cause severe eye, nose and mucous membrane irritation. Higher concentrations may cause chemical asphyxiation.	Specific organ toxicity, repeated exposure: Not Classified

CARCINOGENICITY

IARC	Not Listed
NTP	Not Listed

California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: Not Classified
Reproductive toxicity: Not Classified	Teratogenicity: Not Classified.
Skin Corrosion/irritation: will cause skin irritation	Serious eye damage, irritation -rabbit: serious eye irritation
Synergistic effects: No Data	Aspiration hazard: May be fatal if swallowed and enters airway.

RTECS #: MX1225000

SECTION 12 ✹ ECOLOGICAL INFORMATION

OCTANE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Rice Fish 96 hours	0.42 mg/L	EC_{50}	Water Flea	0.38 mg/L 48 Hours
EC_{50}	Green algae	5.8 g/L 72 hours	EC_{50}	----------	No Data

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	5.15	BCF	No Data
K_{oc} (Soil/water Partition Coefficient)	No Data		

MOBILITY IN SOIL

K_{oc} (Soil/water Partition Coefficient)	No Data

RAFFINATE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Fish	No Data	EC_{50}	Daphnia	No Data
EC_{50}	----------	No Data	EC_{50}	----------	No Data

PERSISTENCE AND DEGRADABILITY

No Data

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	No Data	BCF	No Data

MOBILITY IN SOIL

K_{oc} (Soil/water Partition Coefficient)	No Data

n-PENTANE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Rainbow trout	9.87 g/L 96 Hours	EC_{50}	Water Flea	9.7 g/L 48 Hours
EC_{50}	Green algae	No Data	EC_{50}	Microtox	No Data
Log P_{ow}		3.39	BCF		1.9-2.35

HEXANE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	fathead minnow	2.5 mg/L 96 hours	EC_{50}	Water Flea	3.87 mg/L 48 Hours
EC_{50}	Green algae	12.8 g/L 3 hours	EC_{50}	Microtox	No Data

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	3.9	BCF	No Data

TOLUENE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Goldfish	13 mg/L 96 Hours	EC_{50}	Water Flea	11.5 mg/L 48 Hours
EC_{50}	Green algae	>433 mg/L 72 Hours	EC_{50}	Microtox	19.7 mg/L 48 Hours

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	2.65	BCF	8.317

BENZENE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	fathead minnow	15-32 mg/L 96 hours	EC_{50}	Water Flea	10 mg/L 48 Hours
EC_{50}	Green algae	29 mg/L 72 Hours	EC_{50}	Microtox	No Data

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	1.83	BCF	4.265

ETHYL BENZENE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Sheepshead minnow	88 mg/L 96 hours	EC_{50}	Water Flea	1.8-2.4 mg/L 48 Hours
EC_{50}	Green algae	4.6 mg/L 72 Hours	EC_{50}	Microtox	9.68 mg/L 30 Min

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	3.118	BCF	No Data

1,2,4 TRIMETHYL BENZENE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	fathead minnow	7.72 mg/L 96 hours	EC_{50}	Water Flea	6.14 mg/L 48 Hours
EC_{50}	Green algae	No Data	EC_{50}	Microtox	No Data

BIOACCUMULATIVE POTENTIAL

Log P_{ow}	3.63	BCF	120.2

NAPHTHALENE					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	fathead minnow	1-6.5 mg/L 96 hours	EC_{50}	Water Flea	2.16 mg/L 48 Hours
EC_{50}	Green algae	0.4 mg/L 96 Hours	EC_{50}	Microtox	0.93 mg/L 30 Min
BIOACCUMULATIVE POTENTIAL					
Log P_{ow}		3.3	BCF		85.1

HYDROGEN SULFIDE					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Bluegill	0.0448 mg/L 96 hours	EC_{50}	Water Flea	No Data
LC_{50}	Bluegill	0.016 mg/L 96 hours	EC_{50}	Microtox	No Data
BIOACCUMULATIVE POTENTIAL					
Log P_{ow}		No Data	BCF		No Data

SECTION 13 ✱ DISPOSAL CONSIDERATIONS

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations

Maximize product recovery for reclaim and reuse. Implement waste minimization principles. EPA U.S. Waste Codes: “Ignitable hazardous waste” (D001), unless proven otherwise. Use approved treatment, transporters, and disposal sites in compliance with all laws.

Waste Disposal Method: Should not be released into the environment.

Contaminated Packaging: Dispose of in accordance with local, state, and federal regulations.

US EPA Waste Number: D001, D018

SECTION 14 ⧈ TRANSPORTATION INFORMATION

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations

Element	U.S. DOT	IMDG	IATA
UN Number	UN 1268	UN 1268	UN 1268
UN Proper Shipping Name	Petroleum Distillates, N.O.S.	Petroleum Distillates, N.O.S.	Petroleum Distillates, N.O.S.
Hazard Class	3	3	3
Placard/Label			
Environmental Hazard	Yes	Yes	Yes
Packing Group	II	II	II

SECTION 15 ❯ REGULATORY INFORMATION

Agency	Listing Guidance only, consult specific regulations	
OSHA	All ingredients are listed as hazardous under 29 CFR 1910.1200	
CERCLA RQ's (40 CFR Part 102)	n-Nonane	Benzene – 10 pounds
	Cumene - 5,000 pounds	Cyclohexane - 1,000 pounds
	Naphtha – 100 pounds	Styrene - 1,000 pounds
	Xylene - 100 pounds	Ethyl Benzene - 1,000 pounds
	Toluene - 1,000 pounds	Hexane – 5,000 pounds
TSCA 8(a)	None of the ingredients are listed	
TSCA 8(b)	All components are listed or exempted	
SARA (40 CFR Part 355) TPQ's	None of the ingredients are listed	
SARA 302/304/311/312 extremely hazardous substances	Xylene, Toluene, n-Hexane, Naphthalene, 1,2,4-Trimethylbenzene, Ethylbenzene, Benzene, nonane, heptane, and octane	
SARA 302/304 emergency planning and notification	None of the ingredients are listed	
SARA 302/304/311/312 hazardous chemicals	Xylene; Toluene; n-Hexane; Naphtha; 1,2,4-Trimethylbenzene; Ethyl Benzene; Benzene	
RCRA	Benzene - U019	Hexane - U056
	Xylene - U239	Toluene - U220
State Regulations: Massachusetts, New Jersey, and Pennsylvania	Toluene, Hexane, Benzene, Ethyl benzene, 1,2,4 Trimethyl Benzene, and Naphtha	
New York - all listed except 1,2,4 Trimethyl Benzene		
SARA 311/312 SDS distribution - chemical inventory - hazard identification	Diesel: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Xylene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Toluene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; n-Hexane: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Naphtha: Fire hazard, Immediate(acute) health hazard, Delayed (chronic) health hazard; 1,2,4-Trimethylbenzene: Fire hazard, Delayed (chronic) health hazard; Ethylbenzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Benzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard, Octane (All Isomers): Fire hazard	
EPA Form R Toxic Chemical Release Inventory	Toluene, Xylene, Hexane, 1,2,4 Trimethyl Benzene, Benzene, Ethyl benzene and Naphtha	
Clean Water Act (CWA) 307	Toluene, Benzene, Ethylbenzene and Naphtha	
Clean Water Act (CWA) 311	Xylene, Toluene, Benzene, Ethylbenzene and Naphtha	
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	
Clean Air Act Section 602 Class I Substances	Not Listed	
Clean Air Act Section 602 Class II Substances	Not Listed	

SECTION 16 ⌘ OTHER INFORMATION

NFPA LABEL

HMIS III LABEL

Personal Protection Index
NPCA recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.

Acronym List

°F=degrees Fahrenheit	°C=degrees Celsius	ACGIH= American Conference of Industrial Hygienists
APR=Air Purifying Respirator	BCF= Bioconcentration Factor	BuAc=Butyl Acetate
CANUTEC= Canadian Transport Emergency Centre	CAS=Chemical Abstract Service	CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act
CHEMTREC= Chemical Transportation Emergency Center	CNS=Central Nervous System	CWA=Clean Water Act
DOT=Department of Transportation	EC50= Effective Concentration Fifty	EPA=Environmental Protection Agency
g/Kg=Grams per Kilogram	g/M^3=Grams per Cubic Meter	GHS=Global Harmonization System
H_2O=Water	HAP=Hazardous Air Pollutants	HMIS= Hazardous Materials Identification System
IARC= International Agency for Research on Cancer	IATA= International Air Transport Association	IMDG= International Maritime Dangerous Goods
LC_{50}=Lethal Concentration Fifty	LD_{50}=Lethal Dose Fifty	LEL=Lower Explosive Limit
Log P_{ow} =Octanol/water partition coefficient	mg/Kg=Milligrams per Kilogram	mg/L=Milligrams per Liter
mL/Kg=Milliliters per Kilogram	mm HG=millimeters of mercury	NFPA=National Fire Protection Association
NIOSH= National Institute for Occupational Safety and Health	NTP=National Toxicology Program	OSHA=Occupational Safety and Health Administration
PEL=Permissible Exposure Limit	ppm=Parts per Million	RCRA=Resource Conservation and Recovery Act
RQ=Reportable Quantities	RTECS=Registry of Toxic Effects of Chemical Substances	SARA= Superfund Amendments and Reauthorization Act
SDS=Safety Data Sheet	SETIQ= Emergency Transportation System for the Chemical Industry	STEL=Short Term Exposure Limit
TLV=Threshold Limit Value	TPQ=Threshold Planning Quantity	TSCA=Toxic Substance and Control Act
TWA=Time Weighted Average	UEL=Upper Explosive Limit	VOC=Volatile Organic Compounds

SDS REVISIONS: Update in Section 9 flammable limits

SDS CREATION DATE: 05/28/15 **REVISION #2:** 06/05/20

DISCLAIMER

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SDS DEVELOPER: Cass Willard

Cass Willard, CIH

DATE: 06/05/20