



SAFETY DATA SHEET

SDS ID NO.: 0153MAR019
Revision Date 05/04/2017

1. IDENTIFICATION

Product Name: Marathon Petroleum Denatured Alcohol
Synonym: Denatured Ethyl Alcohol; Denatured Ethanol
Product Code: 0153MAR019
Chemical Family: Alcohol
Recommended Use: Fuel additive.
Restrictions on Use: All others.

Manufacturer, Importer, or Responsible Party Name and Address:
MARATHON PETROLEUM COMPANY LP
539 South Main Street
Findlay, OH 45840

SDS information: 1-419-421-3070
Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Serious eye damage/eye irritation	Category 2A
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3

Hazards Not Otherwise Classified (HNOC)

Not applicable.

Label elements

EMERGENCY OVERVIEW

Danger

HIGHLY FLAMMABLE LIQUID AND VAPOR
Causes serious eye irritation
May cause genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child

Harmful to aquatic life with long lasting effects



Appearance Colorless Liquid

Physical State Liquid

Odor Very faint. Alcoholic

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/hot surfaces. - No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools.
 Take precautionary measures against static discharge
 Wash hands and any possibly exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Avoid release to the environment

Precautionary Statements - Response

IF exposed or concerned: Get medical 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 attention
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Precautionary Statements - Storage

Store in a well-ventilated place. Keep cool
 Store locked up

Precautionary Statements - Disposal

Dispose of contents/container at an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Denatured Alcohol is a mixture of ethyl alcohol and natural gasoline, reformat, light straight run naphtha, or unleaded gasoline. It is approved for use as an octane-enhancing blending component in gasoline.

Composition Information:

Name	CAS Number	% Concentration
Ethyl Alcohol	64-17-5	94-99
Natural Gasoline	8006-61-9	0-5
Naphtha (Petroleum), Light Straight-Run	64741-46-4	0-5
Naphtha (petroleum), heavy catalytic reformed	64741-68-0	0-5
Naphtha (petroleum), catalytic reformed	68955-35-1	0-5
Gasoline	86290-81-5	0-5
Pentane (mixed isomers)	78-78-4	0-3.3
Ethylbenzene	100-41-4	0-2.1
Heptane (mixed isomers)	142-82-5	0-1.8
Xylene (mixed isomers)	1330-20-7	0-1.3
Toluene	108-88-3	0-0.9
n-Hexane	110-54-3	0-0.7
Benzene	71-43-2	0-0.4

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

First Aid Measures

- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).
- Inhalation:** Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. If symptoms occur get medical attention.
- Skin Contact:** Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists. Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties.
- Eye Contact:** Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. If irritation or other symptoms occur get medical attention.
- Ingestion:** Do not induce vomiting. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Most important signs and symptoms, both short-term and delayed with overexposure

- Adverse Effects:** Irritating to the eyes and mucous membranes. Symptoms may include redness, itching, and inflammation. Overexposure may cause coughing, nausea, vomiting, headache, shortness of breath, chest pains, and signs of nervous system depression. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

Indication of any immediate medical attention and special treatment needed

- Notes To Physician:** Aspiration into lungs may cause chemical pneumonia and lung damage. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small fires, Class B fire extinguishing media such as CO₂, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media

Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical

This product has been determined to be a highly flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the Emergency Response Guidebook 127.

Hazardous combustion products

Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge Yes.

Special protective equipment and precautions for firefighters

Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Flame is invisible in daylight. Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Keep run-off water out of sewers and water sources.

Additional firefighting tactics

FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

EVACUATION: Consider initial downwind evacuation for at least 1000 feet. If tank, rail car or tank truck is involved in a fire, ISOLATE for 5280 feet (1 mile) in all directions; also, consider initial evacuation of 5280 feet (1 mile) in all directions.

NFPA Health 2 Flammability 3 Instability 0 Special Hazard -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources.
Protective equipment:	Use personal protection measures as recommended in Section 8.
Emergency procedures:	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
Environmental precautions:	Avoid release to the environment. Avoid subsoil penetration.
Methods and materials for containment:	Contain liquid with sand or soil. Prevent spilled material from entering storm drains, sewers, and open waterways.
Methods and materials for cleaning up:	Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

7. HANDLING AND STORAGE

Safe Handling Precautions:	Use appropriate grounding and bonding practices. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Vapors may travel along the ground or be moved by ventilation. Flashback may occur along vapor trails. No smoking. Use only non-sparking tools. Avoid breathing vapors or mists. Use only with adequate ventilation. Avoid contact with eyes. Avoid repeated and prolonged skin contact. Use personal protection measures as recommended in Section 8. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.
Storage Conditions:	Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Do not store near an open flame, heat or other sources of ignition.
Incompatible Materials	Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELs:	OSHA - Vacated PELs	NIOSH IDLH
Ethyl Alcohol 64-17-5	1000 ppm STEL	TWA: 1000 ppm TWA: 1900 mg/m ³	1000 ppm TWA 1900 mg/m ³ TWA	3300 ppm
Natural Gasoline 8006-61-9	-	-	300 ppm TWA 900 mg/m ³ TWA 500 ppm STEL 1500 mg/m ³ STEL	-
Naphtha (Petroleum), Light Straight-Run 64741-46-4	-	-	-	-
Naphtha (petroleum), heavy catalytic reformed 64741-68-0	-	-	-	-
Naphtha (petroleum), catalytic reformed 68955-35-1	-	-	-	-
Gasoline 86290-81-5	300 ppm TWA 500 ppm STEL	-	300 ppm TWA 900 mg/m ³ TWA 500 ppm STEL 1500 mg/m ³ STEL	-
Pentane (mixed isomers) 78-78-4	1000 ppm TWA	-	-	-
Ethylbenzene 100-41-4	20 ppm TWA	TWA: 100 ppm TWA: 435 mg/m ³	100 ppm TWA 435 mg/m ³ TWA 125 ppm STEL 545 mg/m ³ STEL	800 ppm
Heptane (mixed isomers) 142-82-5	400 ppm TWA 500 ppm STEL	TWA: 500 ppm TWA: 2000 mg/m ³	400 ppm TWA 1600 mg/m ³ TWA 500 ppm STEL 2000 mg/m ³ STEL	750 ppm
Xylene (mixed isomers) 1330-20-7	100 ppm TWA 150 ppm STEL	TWA: 100 ppm TWA: 435 mg/m ³	100 ppm TWA 435 mg/m ³ TWA 150 ppm STEL 655 mg/m ³ STEL	900 ppm
Toluene 108-88-3	20 ppm TWA	TWA: 200 ppm Ceiling: 300 ppm	100 ppm TWA 375 mg/m ³ TWA 150 ppm STEL 560 mg/m ³ STEL	500 ppm
n-Hexane 110-54-3	50 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 500 ppm TWA: 1800 mg/m ³	50 ppm TWA 180 mg/m ³ TWA	1100 ppm
Benzene 71-43-2	0.5 ppm TWA 2.5 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm (applies to industry segments exempt from the benzene standard) TWA: 1 ppm STEL: 5 ppm (see 29 CFR 1910.1028)	25 ppm Ceiling 1 ppm TWA 5 ppm STEL	500 ppm

Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures: Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection: Use goggles or face-shield if the potential for splashing exists.

Skin and body protection: Viton® or polyethylene/ethylene vinyl alcohol (PE/EVAL) gloves for prolonged or repeated skin exposure. Glove suitability is based on workplace conditions and usage. Contact the

glove manufacturer for specific advice on glove selection and breakthrough times.

Respiratory protection: Use a NIOSH approved organic vapor chemical cartridge or supplied air respirators when there is the potential for airborne exposures to exceed permissible exposure limits or if excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless Liquid
Color	Colorless
Odor	Very faint. Alcoholic
Odor Threshold	350 ppmv

<u>Property</u>	<u>Values (Method)</u>
Melting Point / Freezing Point	-114 °C / -173 °F
Initial Boiling Point / Boiling Range	78.3 °C / 172.9 °F
Flash Point	28.3 °C / 55.1 °F
Evaporation Rate	2 (butyl acetate = 1)
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%):	
Upper Flammability Limit:	19
Lower Flammability Limit:	4.3
Explosion limits:	No data available.
Vapor Pressure	2.23 psi @100°F
Vapor Density	1.59 (air = 1)
Specific Gravity / Relative Density	0.795
Water Solubility	No data available.
Solubility in other solvents	No data available.
Partition Coefficient	No data available.
Decomposition temperature	No data available.
pH:	Not applicable.
Autoignition Temperature	423 °C / 793 °F
Kinematic Viscosity	1.1 cSt @ 100°F
Dynamic Viscosity	No data available.
Explosive Properties	No data available.
VOC Content (%)	No data available.
Density	49.58 lbs/ft ³
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	The product is non-reactive under normal conditions.
<u>Chemical stability</u>	Stable under recommended storage conditions.
<u>Possibility of hazardous reactions</u>	None under normal processing.
<u>Hazardous polymerization</u>	Will not occur.
<u>Conditions to avoid</u>	Sources of heat or ignition.
<u>Incompatible Materials</u>	Strong oxidizing agents.
<u>Hazardous decomposition products</u>	None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation	Inhalation of high vapor concentrations may cause irritation of the respiratory system.
Eye contact	Irritating to eyes.
Skin contact	Prolonged or repeated contact may dry skin and cause irritation.
Ingestion	May cause irritation of the mouth, throat and gastrointestinal tract. Aspiration into lungs may result in pneumonitis.

Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl Alcohol 64-17-5	> 5000 mg/kg (Rat)	-	124.7 mg/L (Rat) 4 h
Natural Gasoline 8006-61-9	>5000 mg/kg (rat)	> 5 mL/kg (rabbit)	>5000 mg/m ³ (Rat) 4 h
Naphtha (Petroleum), Light Straight-Run 64741-46-4	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5 mg/L (Rat) 4 h
Naphtha (petroleum), heavy catalytic reformed 64741-68-0	>5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5 mg/L (Rat) 4 h
Naphtha (petroleum), catalytic reformed 68955-35-1	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5 mg/L (Rat) 4 h
Gasoline 86290-81-5	14000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Pentane (mixed isomers) 78-78-4	-	-	450 mg/L (Mouse) 2 h
Ethylbenzene 100-41-4	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h
Heptane (mixed isomers) 142-82-5	-	3000 mg/kg (Rabbit)	103 g/m ³ (Rat) 4 h
Xylene (mixed isomers) 1330-20-7	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.04 mg/L (Rat) 4 h
Toluene 108-88-3	> 2000 mg/kg (Rat)	8390 mg/kg (Rabbit)	12.5 mg/L (Rat) 4 h
n-Hexane 110-54-3	15000 mg/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h
Benzene 71-43-2	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 20 mg/l (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

ETHANOL: Repeated ingestion of ethanol can result in alcohol abuse, causing behavioral changes, memory loss, impaired judgement, decreased appetite, irregular heartbeats, and decreased fertility. Prolonged and repeated ingestion of ethanol has also been associated with cancers of the mouth, pharynx, esophagus and liver. Ethanol ingestion by pregnant women can cause miscarriage, low birth weight, premature birth and fetal alcohol syndrome. In males, acute and chronic alcohol ingestion may affect gonadal hormone levels. It may also affect the liver, kidney, brain, blood and cardiovascular system.

NAPHTHAS: In a large epidemiological study on over 15,000 employees at several petroleum refineries and amongst residents located near these refineries, no increased risk of kidney cancer was observed in association with gasoline exposures (a similar material). In a similar study, no increased risk of kidney cancer was observed among petroleum refinery workers, but there was a slight trend in the incidence of kidney cancers among service station employees, especially after a 30-year latency period.

ISOPARAFFINS: Studies in laboratory animals have shown that long-term exposure to similar materials (isoparaffins) can cause kidney damage and kidney cancer in male laboratory rats. However, in-depth research indicates that these findings are unique to the male rat, and that these effects are not relevant to humans.

PENTANES: Studies of pentane isomers in laboratory animals indicate exposure to extremely high levels (roughly 10 vol.%) may induce cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

ETHYLBENZENE: Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). The incidence of tumors was also elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B). Studies in laboratory animals indicate some evidence of post-implantation deaths following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure with evidence of maternal toxicity. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals have demonstrated evidence of ototoxicity (hearing loss) following exposure levels as low as 300 ppm for 5 days. Studies in laboratory animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland.

XYLENES, ALL ISOMERS: Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, nervous system damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross overexposure. Effects from Prolonged or Repeated Exposure: Impaired neurological function was reported in workers exposed to solvents including xylene. Studies in laboratory animals have shown evidence of impaired hearing following high levels of exposure. Studies in laboratory animals suggest some changes in reproductive organs following high levels of exposure but no significant effects on reproduction were observed. Studies in laboratory animals indicate skeletal and visceral malformations, developmental delays, and increased fetal resorptions following extremely high levels of maternal exposure with evidence of maternal toxicity. The relevance of these observations to humans is not clear at this time. Adverse effects on the liver, kidney, bone marrow (changes in blood cell parameters) were observed in laboratory animals following high levels of exposure. The relevance of these observations to humans is not clear at this time.

TOLUENE: Abuse of toluene at high concentrations (e.g., glue sniffing and solvent abuse) has been associated with adverse effects on the liver, kidney and nervous system, and can cause nervous system depression, cardiac arrhythmias, and death. Studies of workers indicate long-term exposure may be related to impaired color vision and hearing. Some studies of workers suggest long-term exposure may be related to neurobehavioral and cognitive changes. Some of these effects have been observed in laboratory animals following repeated exposure to high levels of toluene. Several studies of workers suggest long-term exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals have been largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure. Studies of workers indicate long term exposure may be related to effects on the liver, kidney and blood, but these appear to be limited to changes in serum enzymes and decreased leukocyte counts. Adverse effects on the liver, kidney, thymus and nervous system were observed in animal studies following very high levels of exposure. The relevance of these findings to humans is not clear at this time.

N-HEXANE: Long-term or repeated exposure to n-hexane can cause peripheral nerve damage. Initial symptoms are numbness of the fingers and toes. Also, motor weakness can occur in the digits, but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. Testicular atrophy and partial to full loss of the germ cell line were observed in sub-chronic high-dose inhalation studies of laboratory rodents. These effects appeared irreversible. Rodent reproduction studies have shown evidence of reduced fetal weight but no frank malformations.

BENZENE: Studies of workers exposed to benzene show clear evidence that overexposure can cause cancer and other diseases of the blood forming organs including Acute Myelogenous Leukemia (AML), and Aplastic Anemia (AA), an often fatal disease. Some studies suggest overexposure to benzene may also be associated with Myelodysplastic Syndrome (MDS). Findings from a case control study of workers exposed to benzene was reported during the 2009 Benzene Symposium in Munich included an increase in Acute Myeloid Leukemias and Non-Hodgkins Lymphoid Neoplasms (NHLN) of the subtype follicular lymphoma (FL) in some occupational categories. Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes. One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of AA have been reported in the offspring of persons severely overexposed to benzene. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and minor skeletal variations. Benzene has been classified as a proven human carcinogen by OSHA and a Group 1 (Carcinogenic to Humans) material by IARC. The current proposed IARC classification for benzene is summarized as follows: Sufficient evidence for Acute Myeloid Leukemia; limited evidence for Acute Lymphatic Leukemia, Chronic Lymphatic Leukemia, Non-Hodgkin Lymphoma, and Multiple Myeloma.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs and Symptoms

Irritating to the eyes and mucous membranes. Symptoms may include redness, itching, and inflammation. Overexposure may cause coughing, nausea, vomiting, headache, shortness of breath, chest pains, and signs of nervous system depression. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

Sensitization

Not expected to be a skin or respiratory sensitizer.

Mutagenic effects

May cause genetic defects.

Carcinogenicity

May cause cancer.

Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Ethyl Alcohol 64-17-5	Confirmed animal carcinogen (A3)	Alcoholic Beverages Carcinogenic to humans (1)	Alcoholic Beverage Consumption Known to be human carcinogen	Not Listed
Natural Gasoline 8006-61-9	Not Listed	Possibly carcinogenic to humans(2B)	Not Listed	Not Listed
Naphtha (Petroleum), Light Straight-Run 64741-46-4	Not Listed	Not Listed	Not Listed	Not Listed
Naphtha (petroleum), heavy catalytic reformed 64741-68-0	Not Listed	Not Listed	Not Listed	Not Listed

Naphtha (petroleum), catalytic reformed 68955-35-1	Not Listed	Not Listed	Not Listed	Not Listed
Gasoline 86290-81-5	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Pentane (mixed isomers) 78-78-4	Not Listed	Not Listed	Not Listed	Not Listed
Ethylbenzene 100-41-4	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Heptane (mixed isomers) 142-82-5	Not Listed	Not Listed	Not Listed	Not Listed
Xylene (mixed isomers) 1330-20-7	Not classifiable (A4)	Not classifiable (3)	Not Listed	Not Listed
Toluene 108-88-3	Not Classifiable (A4)	Not Classifiable (3)	Not Listed	Not Listed
n-Hexane 110-54-3	Not Listed	Not Listed	Not Listed	Not Listed
Benzene 71-43-2	Confirmed human carcinogen (A1)	Carcinogenic to humans (1)	Known to be human carcinogen	Known carcinogen

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity (STOT) - single exposure Not classified.

Specific Target Organ Toxicity (STOT) - repeated exposure Not classified.

Aspiration hazard Potential for aspiration if swallowed.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product should be considered harmful to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Ethyl Alcohol 64-17-5	-	96-hr LC50 >1,000 mg/l Rainbow Trout (static) 96-hr LC50 >100 mg/l Fathead minnow (static)	-	48-hr LC50 >1,000 mg/l Daphnia magna
Natural Gasoline 8006-61-9	-	96-hr LC50 = 11 mg/l Rainbow Trout (static)	-	48-hr LC50 = 7.6 mg/l Daphnia magna
Naphtha (Petroleum), Light Straight-Run 64741-46-4	-	96-hr LL50 = 1-10 mg/l Fish	-	48-hr EL50 = 1-10 mg/l Daphnia
Naphtha (petroleum), heavy catalytic reformed 64741-68-0	-	96-hr EL50 = 1-10 mg/l fish	-	48-hr EC50 = 1-10 mg/l Daphnia
Naphtha (petroleum), catalytic reformed 68955-35-1	-	96-hr LL50 = 1-10 mg/L Fish	-	48-hr EL50 = 1-10 mg/l Daphnia
Gasoline 86290-81-5	72-hr EC50 = 56 mg/l Algae	96-hr LC50 = 11 mg/l Rainbow trout (static)	-	48-hr LC50 = 7.6 mg/l Daphnia magna
Pentane (mixed isomers) 78-78-4	-	96-hr LC50 = 3.1 mg/L Rainbow trout	-	48-hr EC50 = >1 - <10 mg/L Daphnia magna
Ethylbenzene 100-41-4	72-hr EC50 = 1.7-7.6 mg/l Algae	96-hr LC50 = 4 mg/L Rainbow trout	-	48-hr EC50 = 1-4 mg/L Daphnia magna
Heptane (mixed isomers) 142-82-5	-	96-hr LC50 = 375 mg/L Tilapia	-	-
Xylene (mixed isomers) 1330-20-7	72-hr EC50 = 11 mg/l Algae	96-hr LC50 = 8 mg/l Rainbow trout	-	48-hr LC50 = 3.82 mg/l Daphnia magna
Toluene 108-88-3	72-hr EC50 = 12.5 mg/l Algae	96-hr LC50 <= 10 mg/l Rainbow trout	-	48-hr EC50 = 5.46-9.83 mg/l Daphnia magna 48-hr EC50 = 11.5 mg/l

				Daphnia magna (Static)
n-Hexane 110-54-3	-	96-hr LC50 = 2.5 mg/l Fathead minnow	-	-
Benzene 71-43-2	72-hr EC50 = 29 mg/l Algae	96-hr LC50 = 5.3 mg/l Rainbow trout (flow-through)	-	48-hr EC50 = 8.76-15.6 mg/l Daphnia magna (Static)

Persistence and degradability Readily biodegradable in the environment. The presence of ethanol in this product may impede the biodegradation of benzene, toluene, ethylbenzene and xylene in groundwater, resulting in elongated plumes of these constituents.

Bioaccumulation Not expected to bioaccumulate in aquatic organisms.

Mobility in soil May partition into air, soil and water.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues

This material may be a flammable liquid waste.

Safe Handling of Wastes

Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal

The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal

Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):

UN Proper Shipping Name:	Denatured Alcohol
UN/Identification No:	NA 1987
Class:	3
Packing Group:	II

TDG (Canada):

UN Proper Shipping Name:	Ethanol and Gasoline Mixture
UN/Identification No:	UN 3475
Transport Hazard Class(es):	3
Packing Group:	II

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous

	Substances and TPQs
Ethyl Alcohol	NA
Natural Gasoline	NA
Naphtha (Petroleum), Light Straight-Run	NA
Naphtha (petroleum), heavy catalytic reformed	NA
Naphtha (petroleum), catalytic reformed	NA
Gasoline	NA
Pentane (mixed isomers)	NA
Ethylbenzene	NA
Heptane (mixed isomers)	NA
Xylene (mixed isomers)	NA
Toluene	NA
n-Hexane	NA
Benzene	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
Ethyl Alcohol	NA
Natural Gasoline	NA
Naphtha (Petroleum), Light Straight-Run	NA
Naphtha (petroleum), heavy catalytic reformed	NA
Naphtha (petroleum), catalytic reformed	10
Gasoline	NA
Pentane (mixed isomers)	NA
Ethylbenzene	1000
Heptane (mixed isomers)	NA
Xylene (mixed isomers)	100
Toluene	1000 lb final RQ 454 kg final RQ
n-Hexane	5000
Benzene	10

SARA Section 311/312: The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
Ethyl Alcohol	None
Natural Gasoline	None
Naphtha (Petroleum), Light Straight-Run	None
Naphtha (petroleum), heavy catalytic reformed	None
Naphtha (petroleum), catalytic reformed	None
Gasoline	None
Pentane (mixed isomers)	None
Ethylbenzene	0.1 % de minimis concentration
Heptane (mixed isomers)	None
Xylene (mixed isomers)	1.0 % de minimis concentration
Toluene	1.0 % de minimis concentration
n-Hexane	1.0 % de minimis concentration
Benzene	0.1 % de minimis concentration

State and Community Right-To-Know Regulations:

The following component(s) of this material are identified on the regulatory lists below:

Ethyl Alcohol

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 4/29/11 (in alcoholic beverages) Carcinogen, initial date 7/1/88 (when associated with alcohol abuse) Developmental toxicity, initial date 10/1/87 (in alcoholic beverages)
New Jersey Right-To-Know:	SN 0844
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Teratogen
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree; Mutagen; Teratogen
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Natural Gasoline

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Naphtha (Petroleum), Light Straight-Run

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 -	Not Listed

List of Hazardous Substances:	
Naphtha (petroleum), heavy catalytic reformed	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 -	Not Listed
List of Hazardous Substances:	
Naphtha (petroleum), catalytic reformed	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 -	Not Listed
List of Hazardous Substances:	
Gasoline	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0957
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0957 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 -	Not Listed
List of Hazardous Substances:	
Pentane (mixed isomers)	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed

New Jersey Right-To-Know:	SN 1064
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1064 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Ethylbenzene	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 6/11/04
New Jersey Right-To-Know:	SN 0851
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen; flammable - Third degree
New Jersey - Environmental Hazardous Substances List:	SN 0851 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)
Heptane (mixed isomers)	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1339
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Xylene (mixed isomers)	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 2014
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)

Michigan Critical Materials Register List:	100 lb Annual usage threshold	all isomers
Massachusetts Extraordinarily Hazardous Substances:	Not Listed	
California - Regulated Carcinogens:	Not Listed	
Pennsylvania RTK - Special Hazardous Substances:	Not Listed	
New Jersey - Special Hazardous Substances:	Flammable - third degree	
New Jersey - Environmental Hazardous Substances List:	SN 2014 TPQ: 500 lb	
Illinois - Toxic Air Contaminants:	Present	
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)	
Toluene		
Louisiana Right-To-Know:	Not Listed	
California Proposition 65:	Developmental toxicity, initial date 1/1/91	Female reproductive toxicity, initial date 8/7/09
New Jersey Right-To-Know:	SN 1866	
Pennsylvania Right-To-Know:	Environmental hazard	
Massachusetts Right-To Know:	Present	
Florida Substance List:	Not Listed	
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)	
Michigan Critical Materials Register List:	100 lb Annual usage threshold	
Massachusetts Extraordinarily Hazardous Substances:	Not Listed	
California - Regulated Carcinogens:	Not Listed	
Pennsylvania RTK - Special Hazardous Substances:	Not Listed	
New Jersey - Special Hazardous Substances:	Flammable - third degree; Teratogen	
New Jersey - Environmental Hazardous Substances List:	SN 1866 TPQ: 500 lb	
Illinois - Toxic Air Contaminants:	Present	
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)	
n-Hexane		
Louisiana Right-To-Know:	Not Listed	
California Proposition 65:	Not Listed	
New Jersey Right-To-Know:	SN 1340	
Pennsylvania Right-To-Know:	Present	
Massachusetts Right-To Know:	Present	
Florida Substance List:	Not Listed	
Rhode Island Right-To-Know:	Toxic; Flammable	
Michigan Critical Materials Register List:	Not Listed	
Massachusetts Extraordinarily Hazardous Substances:	Not Listed	
California - Regulated Carcinogens:	Not Listed	
Pennsylvania RTK - Special Hazardous Substances:	Not Listed	
New Jersey - Special Hazardous Substances:	Flammable - third degree	
New Jersey - Environmental Hazardous Substances List:	SN 1340 TPQ: 500 lb	
Illinois - Toxic Air Contaminants:	Present	
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1 lb RQ (air); 1 lb RQ (land/water)	
Benzene		
Louisiana Right-To-Know:	Not Listed	
California Proposition 65:	Carcinogen, initial date 2/27/87	Developmental toxicity, initial date 12/26/97
New Jersey Right-To-Know:	SN 0197	Male reproductive toxicity, initial date 12/26/97
Pennsylvania Right-To-Know:	Environmental hazard; Special hazardous substance	
Massachusetts Right-To Know:	Carcinogen; Extraordinarily hazardous	
Florida Substance List:	Not Listed	
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin); Carcinogen (skin)	
Michigan Critical Materials Register List:	100 lb Annual usage threshold	
Massachusetts Extraordinarily Hazardous Substances:	Carcinogen; Extraordinarily hazardous	

California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Present
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree; Mutagen
New Jersey - Environmental Hazardous Substances List:	SN 0197 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	10 lb RQ (air); 1 lb RQ (land/water)

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Ethyl Alcohol	B2,D2B	0.1%
Natural Gasoline	B2,D2A	0.1%
Naphtha (Petroleum), Light Straight-Run	B2,D2A,D2B	0.1%
Naphtha (petroleum), heavy catalytic reformed	B2,D2B	1%
Naphtha (petroleum), catalytic reformed	B2,D2A,D2B	0.1%
Gasoline	B2,D2A,D2B	0.1%
Pentane (mixed isomers)	B2	1%
Ethylbenzene	B2,D2A,D2B	0.1%
Heptane (mixed isomers)	B2,D2B	1%
Xylene (mixed isomers)	B2,D2A,D2B	m-, o-isomers 1.0%; p-isomer 0.1%
Toluene	B2,D2A,D2B	0.1%
n-Hexane	B2,D2A,D2B	1%
Benzene	B2,D2A,D2B	0.1%



Note: Not applicable.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety

Revision Notes

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Revised Sections The following sections (§) have been updated:
 3. COMPOSITION/INFORMATION ON INGREDIENTS
 4. FIRST AID MEASURES
 5. FIRE-FIGHTING MEASURES
 6. ACCIDENTAL RELEASE MEASURES
 7. HANDLING AND STORAGE
 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
 9. PHYSICAL AND CHEMICAL PROPERTIES
 11. TOXICOLOGICAL INFORMATION
 14. TRANSPORT INFORMATION

Disclaimer

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