SAFETY DATA SHEET

Revision Date 19-Jun-2017 **SDS Number** 888100004450 **Revision Number** 2.01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product Name **Naphtha**

Synonyms SNG Naphtha, Light Cat Naphtha, Sweet Virgin Naphtha (SVN), Debutanized Naphtha, Atmospheric Naphtha (DAN), HCU Light Naphtha, Light CR Gasoline, Full Range Cracked Naphtha, Full Range Hydrocracked Naphtha, Full Range Reformed Naphtha, Light Chemical Treated Naphtha, Light Cracked Naphtha, Light Hydrocracked Naphtha, Light Hydrotreated Naphtha, Aviation Alkylate Naphtha, Light Hydrocrackate, Sweetened Naphtha, APPC890, RS108

Recommended Use Fuels
Uses advised against All others

Manufacturer
Tesoro Refining & Marketing Co.
19100 Ridgewood Parkway
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Emergency Telephone Chemtrec: 1-800-424-9300
Tesoro Call Center: 1-877-783-7676

E-mail address ProductStewardship@TSOCORP.com

2. HAZARDS IDENTIFICATION

Classification

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

Flammable liquids	Category 3
Skin Corrosion/Irritation Category	Category 2
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Acute Aquatic Toxicity	Category 1
Chronic Aquatic Toxicity	Category 1
Aspiration toxicity	Category 1

Label elements

Danger

Flammable liquid and vapor
Harmful if inhaled
Causes skin irritation

May cause genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child
May cause drowsiness or dizziness by inhalation.
Causes damage to organs through prolonged or repeated exposure
Very toxic to aquatic life with long lasting effects
May be fatal if swallowed and enters airways

Appearance Liquid **Physical State @20°C** Liquid **Odor** Characteristic Hydrocarbon like

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Avoid release to the environment
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/or bond container and receiving equipment
Use explosion-proof electrical/ ventilating / lighting / equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
Specific treatment (see .? on this label)
Specific treatment (see .? on this label)
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Rinse mouth
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting
In case of fire: Use CO2, dry chemical, or foam for extinction
Collect spillage

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Percent
Naphtha; Low boiling point naphtha	8030-30-6	0-100
Xylene	1330-20-7	25-35
N-hexane	110-54-3	25-35
Toluene	108-88-3	15-20
Pentane	109-66-0	15-20
Cyclohexane	110-82-7	15-20
n-Heptane	142-82-5	12.5-15
Ethylbenzene	100-41-4	5-7
Benzene	71-43-2	0.5-5
1,2,4-Trimethylbenzene	95-63-6	2-3
Sulfur	7704-34-9	0-1.5

4. FIRST AID MEASURES

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. Remove from exposure, lie down. In case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt, seek medical advice. Never give anything by mouth to an unconscious person. Take off all contaminated clothing immediately and thoroughly wash material from skin.

Inhalation

Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical advice/attention. Delayed pulmonary edema may occur.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Self-protection of the first aider

Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists.

Most important symptoms and effects, both acute and delayed

Symptoms

Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

Note to physicians Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Small Fire Any extinguisher suitable for Class B fires, dry chemical, CO2, foam (AFFF/ATC), or water spray can be used.

Large Fire Water spray, fog or alcohol-resistant foam. CAUTION: Use of water spray when fighting fire may be inefficient. Cool containers with flooding quantities of water until well after fire is out.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazardous combustion products Smoke, CO, and other products of incomplete combustion.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge Yes.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

Further information ALWAYS stay away from tanks engulfed in fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Do not direct water at source of leak or safety devices; icing may occur. Cool containers with flooding quantities of water until well after fire is out. Do not allow run-off from fire-fighting to enter drains or water courses.

NFPA	Health hazards 1	Flammability 3	Stability 0	Physical and chemical properties -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Keep people away from and upwind of spill/leak. Stop leak if you can do it without risk. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Flammable vapor may accumlate to flammable ranges in confined spaces or containers. Monitor area for flammable or explosive atmosphere.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up. Store away from other materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL
Naphtha; Low boiling point naphtha 8030-30-6	-	TWA: 100 ppm TWA: 400 mg/m³ TWA: 500 ppm TWA: 2000 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 400 mg/m³
Xylene 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m³ (vacated) STEL: 150 ppm (vacated) STEL: 655 mg/m³
N-hexane 110-54-3	TWA: 50 ppm S*	TWA: 500 ppm TWA: 1800 mg/m³ (vacated) TWA: 50 ppm (vacated) TWA: 180 mg/m³
Toluene 108-88-3	TWA: 20 ppm	TWA: 200 ppm (vacated) TWA: 100 ppm (vacated) TWA: 375 mg/m³ (vacated) STEL: 150 ppm (vacated) STEL: 560 mg/m³ Ceiling: 300 ppm
Pentane 109-66-0	TWA: 1000 ppm	TWA: 1000 ppm TWA: 2950 mg/m³ (vacated) TWA: 600 ppm (vacated) TWA: 1800 mg/m³ (vacated) STEL: 750 ppm (vacated) STEL: 2250 mg/m³

Cyclohexane 110-82-7	TWA: 100 ppm	TWA: 300 ppm TWA: 1050 mg/m^3 (vacated) TWA: 300 ppm (vacated) TWA: 1050 mg/m^3
n-Heptane 142-82-5	STEL: 500 ppm TWA: 400 ppm	TWA: 500 ppm TWA: 2000 mg/m^3 (vacated) TWA: 400 ppm (vacated) TWA: 1600 mg/m^3 (vacated) STEL: 500 ppm (vacated) STEL: 2000 mg/m^3
Ethylbenzene 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m^3 (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m^3 (vacated) STEL: 125 ppm (vacated) STEL: 545 mg/m^3
Benzene 71-43-2	STEL: 2.5 ppm TWA: 0.5 ppm S*	TWA: 10 ppm applies to industry segments exempt from the benzene standard at 29 CFR 1910.1028 TWA: 1 ppm (vacated) TWA: 10 ppm unless specified in 1910.1028 (vacated) STEL: 50 ppm 10 min unless specified in 1910.1028 (vacated) Ceiling: 25 ppm unless specified in 1910.1028 Ceiling: 25 ppm STEL: 5 ppm see 29 CFR 1910.1028

S* - Potential exposure by cutaneous route

NOTE: Limits shown for guidance only. For additional information, OSHA's 1989 air contaminants standard exposure limits provided even though the limits were vacated in 1992. State, local or other agencies or advisory groups may have established more stringent limits. Follow applicable regulations.

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use goggles or face-shield where there is a possibility of splashing.

Hand Protection

Wear suitable gloves. Impervious gloves.

Skin and body protection

If there is a risk of contact:. Wear suitable protective clothing. Wear fire/flame resistant/retardant clothing.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a NIOSH approved respirator when there is a potential for airborne concentrations to exceed occupational exposure limits. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2, NIOSH Respirator Decision Logic, and the respirator manufacturer for additional guidance on respiratory protection selection. A Self-Contained Breathing Apparatus (SCBA) should be used for fire fighting. Use a NIOSH approved positive-pressure supplied air respirator if there is a potential for uncontrolled release, exposure levels are unknown, in oxygen deficient (less than 19.5% oxygen), or any other circumstance where an air-purifying respirator may not provide adequate protection.

General hygiene considerations

Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

Remove and wash contaminated clothing and gloves, including the inside, before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State @20°C	Liquid
Appearance	Liquid
Odor	Characteristic Hydrocarbon like
Color	Clear to straw
Odor threshold	0.5-1.1 ppm

Property	**Values**	**Remarks • Method**
pH	Not applicable	
Melting point / freezing point	-101 °C / -150 °F	
Boiling range	49 °C	
Flash point	23 °C / 73 °F	
Evaporation rate	No data available	
Flammability (solid, gas)	Flammable vapor released by liquid	
Flammability Limit in Air %		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	34.5 - 103.4	@ 37.8 °C
Vapor density	3-4	
Relative density	.71	
Water solubility	Negligible	
Solubility in other solvents	No data available	
Partition coefficient	2.1-6	
Autoignition temperature	250 °C / 482 °F	
Decomposition temperature	No data available	
Kinematic viscosity	10.64 to 0.88 mm2/s	
Dynamic viscosity	No data available	
Explosive properties	No data available	
Oxidizing properties	No data available	
Minimum Ignition Energy (mJ)	No data available	
K_{st} (bar.m/s)	No data available	
Softening point	No data available	
VOC Content (%)	No data available	
Density	No data available	
Bulk density	Not applicable	
Conductivity	Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with ”ultra-low conductivities” below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products. Note that conductivity can be reduced by environmental factors such as a decrease in temperature	

10. STABILITY AND REACTIVITY

Reactivity This product is non-reactive under normal conditions.

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Heat, flames and sparks. Excessive heat.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products None under normal use conditions.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness by inhalation. Harmful by inhalation. (based on components).

Eye contact Irritating to eyes. (based on components).

Skin contact Repeated exposure may cause skin dryness or cracking. Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Toxic in contact with skin.

Ingestion Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. (based on components).

Information on toxicological effects

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Redness. May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 1,660.00 mg/kg
ATEmix (dermal) 972.00 mg/kg
ATEmix (inhalation-dust/mist) 3.00 mg/l
ATEmix (inhalation-vapor) 483.34 mg/l

Chemical Name	Oral LD50	LD50/dermal/rat - NO UNITS (Wizards mg/kg)	Inhalation LC50
Naphtha; Low boiling point naphtha 8030-30-6	> 5 g/kg (Rat)	> 3 g/kg (Rabbit)	-
Xylene 1330-20-7	= 3500 mg/kg (Rat)	> 1700 mg/kg (Rabbit) > 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h = 5000 ppm (Rat) 4 h
N-hexane 110-54-3	= 25 g/kg (Rat)	= 3000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h
Toluene 108-88-3	= 2600 mg/kg (Rat)	= 12000 mg/kg (Rabbit)	= 12.5 mg/L (Rat) 4 h
Pentane 109-66-0	> 2000 mg/kg (Rat)	= 3000 mg/kg (Rabbit)	= 364 g/m^3 (Rat) 4 h
Cyclohexane 110-82-7	= 12705 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 13.9 mg/L (Rat) 4 h
n-Heptane 142-82-5	-	= 3000 mg/kg (Rabbit)	= 103 g/m^3 (Rat) 4 h
Ethylbenzene 100-41-4	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h
Benzene 71-43-2	= 1800 mg/kg (Rat) = 810 mg/kg (Rat)	> 8200 mg/kg (Rabbit)	= 44.66 mg/L (Rat) 4 h
1,2,4-Trimethylbenzene 95-63-6	= 3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 18 g/m^3 (Rat) 4 h
Sulfur 7704-34-9	> 3000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 9.23 mg/L (Rat) 4 h

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

Chemical Name

Xylene	Mixed xylenes can cause skin, eye, and respiratory irritation. Both short- and long-term repeated exposures to high enough levels in humans have resulted in a variety of adverse nervous system effects that include headache, mental confusion, narcosis, equilibrium, impaired short-term memory, dizziness and tremors. Studies in laboratory animals indicate that xylene can cause changes in the liver and harmful effects on the kidneys, lungs, heart, and nervous system as well as hearing loss. The relevance of these observations to humans is not clear at this time. In general, developmental studies in animals reported adverse fetal effects only at concentrations that caused maternal toxicity. The relevance of these observations to humans is unclear at this time. The available data from in vitro and in vivo studies suggest that xylenes are not mutagenic and do not produce chromosomal abnormalities. Furthermore, rats exposed up to 500 mg/kg bw and mice exposed up to 1000 mg/kg bw mixed xylenes for 103 weeks showed no treatment-related increases in any tumor type. IARC has determined that the carcinogenicity of xylenes is not classifiable (Group 3).
N-hexane	N-Hexane may be fatal if it is swallowed and enters the airways. Acute (short-term) dermal overexposure can cause skin and eye irritation in humans. Acute inhalation and oral exposures have caused systemic effects such as decreased body weight and respiratory effects, as well as reproductive and developmental effects in animals. Respiratory effects may include nose, throat, and lung irritation, coughing, wheezing, and shortness of breath. Acute overexposures may also cause headache, nausea, vomiting, dizziness, lightheadedness, loss of consciousness, coma, and death in human. Intermediate duration inhalation and oral exposures to relatively high concentrations (400-3,000 ppm) of n-hexane have led to nerve damage, paralysis, and/or deaths in rats. N-hexane may damage male reproductive glands. Intermediate-duration inhalation and oral exposure to high levels (1,000-10,000 ppm; 4,000 mg/kg/day) of n-hexane damages sperm-forming cells and testicles in rats. Chronic (long-term) inhalation of large amounts of n-hexane causes nerve damage and paralysis of the arms and legs in humans. Dermal effects, such as a skin rash, dryness, or redness can also occur following chronic overexposure. Chronic duration inhalation exposures in animals are not available.
Pentane	Pentane may be fatal if it is swallowed and enters the airway. If inhaled, short-term (acute) overexposure can cause drowsiness, disorientation, other narcotic effects, and possibly death. Acute exposure to n-pentane by inhalation and ingestion results in low toxicity in animal studies. Exposure can cause irritation to eyes, skin (including dermatitis), and nose. Sensitization has not been reported. Exposure to high enough levels may also affect the central nervous system (CNS).
Cyclohexane	Cyclohexane may be fatal if it is swallowed and enters the airways. Cyclohexane has low acute oral, dermal, and inhalation toxicity. Acute (short-term) overexposure can irritate and burn the eyes, irritate the nose and throat, and cause coughing, wheezing, headache, dizziness, nausea, vomiting, lightheadedness, drowsiness, and unconciousness at high concentrations. Chronic inhalation exposure caused maternal toxicity and developmental effects in rats. At high enough levels, repeated or prolonged contact with skin may cause dermatitis.
Ethylbenzene	Ethylbenzene may be fatal if it is swallowed and enters the airways. Short term (acute) exposure to ethylbenzene can cause eye, skin, and throat irritation. It may have effects on the central nervous system including dizziness, and at very high exposure, lowering on consciousness. Long-term exposures orally and by inhalation have been shown to cause damage to the inner ear and hearing in animals. Long term or repeated exposure to high enough levels of ethylbenzene may have effects on the kidneys and liver, resulting in impaired functions, and repeated contact with skin may cause dryness and cracking. Animal studies indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland. In a 2-year inhalation study in mice and rats, the animals were exposed to 0, 75, 250, and 750 ppm ethylbenzene 6 hours/day, 5 days/week. Renal effects were observed in male rats (renal tubule hyperplasia) and female rats (renal tubule adenoma and adenoma or carcinoma) exposed to 750 ppm. The incidence of adenoma in the testes of males was significantly greater than in the control group and exceeded the historical control range for inhalation studies. The incidences of alveolar/bronchiolar adenoma was increased in males and the incidence of hepatocellular adenoma was increased in females. IARC has classified ethylbenzene as possibly carcinogenic to humans (Group 2B). Studies do not provide conclusive evidence of reproductive effects. In one study, developmental effects were reported in animals but only at very high doses (≥1000 ppm) that are likely to be toxic

to the mother. The relevance of these findings to humans is not clear at this time.

Benzene

Benzene exposure may occur through inhalation, ingestion, skin absorption or eye contact. Benzene exposure can cause skin, eye and respiratory irritation. The most characteristic systemic effect resulting from high enough intermediate and chronic benzene exposure is arrested development of blood cells. Studies have linked overexposure to benzene to many hematological effects including aplastic anemia, pancytopenia, leukopenia, and myelodysplastic syndrome. In vivo and in vitro data from both humans and animals show that benzene and/or its metabolites are genotoxic. Studies in animals provide supporting evidence for the carcinogenicity of inhaled benzene. Epidemiological studies have reported a causal relationship between occupational benzene exposures and acute myelogenous leukemia. Some studies suggest associations between benzene exposure and non-Hodgkin's lymphoma, multiple myeloma, and other cancers. Benzene has been classified as carcinogenic to humans (Group 1) by IARC, and the ECHA C&L Inventory states it may cause cancer (Carc. 1B). IARC concluded that benzene causes acute myeloid leukemia and a positive association has been observed for acute lymphatic leukemia, chronic lymphatic leukemia, non-hodgkin lymphoma, and multiple myeloma. Human studies suggest that female fertility and menstrual cycles were effected by benzene exposure; however, due to uncertainties in exposure and limited data the studies were considered inconclusive. Developmental effects have been observed in animals including persistent hematopoietic anomalies. It has been suggested that the reported benzene fetotoxicity of decreased weight and skeletal variants is a function of maternal toxicity.

1,2,4-Trimethylbenzene

1,2,4-Trimethylbenzene may be fatal if it is swallowed and enters airways. Overexposure through inhalation and ingestion can cause confusion, dizziness, drowsiness, headache, and vomiting, cough, and sore throat. Short-term exposure to high enough levels through inhalation may cause respiratory irritation, and long-term overexposure may cause asthmatic bronchitis. Contact with skin can cause irritation, redness and dry skin. Contact with eyes can cause serious eye irritation, redness, and pain.

Health hazard and classification information

Skin Corrosion/Irritation Category

Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation

No information available.

No information available.

Germ cell mutagenicity

Classification based on data available for ingredients. Contains a known or suspected mutagen. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Carcinogenicity

Classification based on data available for ingredients. Contains a known or suspected carcinogen.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Xylene 1330-20-7	-	Group 3	-	-
Toluene 108-88-3	-	Group 3	-	-
Ethylbenzene 100-41-4	A3	Group 2B	-	X
Benzene 71-43-2	A1	Group 1	Known	X

Reproductive toxicity

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Target Organ Systemic Toxicant - Single Exposure

May cause drowsiness or dizziness by inhalation.

Target Organ Systemic Toxicant - Repeated Exposure Causes damage to organs through prolonged or repeated exposure.

Target organ effects liver, kidney, Respiratory system, Eyes, Skin, Central nervous system, Peripheral Nervous System (PNS), blood, bone marrow.

Aspiration hazard May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Additional Ecological Information Release of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. U.S.A. regulations require reporting spills of this material that could reach any surface waters. The toll free number to the U.S. Coast Guard National Response Center is (800) 424-8802

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Naphtha; Low boiling point naphtha 8030-30-6	4700: 72 h Pseudokirchneriella subcapitata mg/L EC50	9.2: 96 h Lepomis macrochirus mg/L LC50 static	-	-
Xylene 1330-20-7	-	13.4: 96 h Pimephales promelas mg/L LC50 flow-through 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 19: 96 h Lepomis macrochirus mg/L LC50 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static	-	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
N-hexane 110-54-3	-	2.1 - 2.98: 96 h Pimephales promelas mg/L LC50 flow-through	-	1000: 24 h Daphnia magna mg/L EC50
Toluene 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	12.6: 96 h Pimephales promelas mg/L LC50 static 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 15.22 - 19.05: 96 h Pimephales promelas mg/L LC50 flow-through 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50	-	11.5: 48 h Daphnia magna mg/L EC50 5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static

		static 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static		
Pentane 109-66-0	-	9.99: 96 h Lepomis macrochirus mg/L LC50 9.87: 96 h Oncorhynchus mykiss mg/L LC50 11.59: 96 h Pimephales promelas mg/L LC50	-	9.74: 48 h Daphnia magna mg/L EC50
Cyclohexane 110-82-7	500: 72 h Desmodesmus subspicatus mg/L EC50	3.96 - 5.18: 96 h Pimephales promelas mg/L LC50 flow-through 23.03 - 42.07: 96 h Pimephales promelas mg/L LC50 static 24.99 - 44.69: 96 h Lepomis macrochirus mg/L LC50 static 48.87 - 68.76: 96 h Poecilia reticulata mg/L LC50 static	-	400: 24 h Daphnia magna mg/L EC50
n-Heptane 142-82-5	-	375.0: 96 h Cichlid fish mg/L LC50	-	10: 24 h Daphnia magna mg/L EC50
Ethylbenzene 100-41-4	438: 96 h Pseudokirchneriella subcapitata mg/L EC50 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static	4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.6: 96 h Poecilia reticulata mg/L LC50 static 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static	-	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
Benzene 71-43-2	29: 72 h Pseudokirchneriella subcapitata mg/L EC50	10.7 - 14.7: 96 h Pimephales promelas mg/L LC50 flow-through 5.3: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 22.49: 96 h Lepomis macrochirus mg/L LC50 static 28.6: 96 h Poecilia reticulata mg/L LC50 static 22330 - 41160: 96 h Pimephales promelas µg/L LC50 static 70000 - 142000: 96 h Lepomis macrochirus µg/L LC50 static	-	10: 48 h Daphnia magna mg/L EC50 8.76 - 15.6: 48 h Daphnia magna mg/L EC50 Static
1,2,4-Trimethylbenzene 95-63-6	-	7.19 - 8.28: 96 h Pimephales promelas mg/L LC50 flow-through	-	6.14: 48 h Daphnia magna mg/L EC50
Sulfur	-	14: 96 h Lepomis	-	-

7704-34-9		macrochirus mg/L LC50 static 866: 96 h Brachydanio rerio mg/L LC50 static 180: 96 h Oncorhynchus mykiss mg/L LC50 static		

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

Chemical Name	Partition coefficient
Xylene 1330-20-7	2.77 - 3.15
Toluene 108-88-3	2.7
Pentane 109-66-0	3.39
Cyclohexane 110-82-7	3.44
n-Heptane 142-82-5	4.66
Ethylbenzene 100-41-4	3.2
Benzene 71-43-2	2.1
1,2,4-Trimethylbenzene 95-63-6	3.63

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture of weld containers.

US EPA Waste Number D001, U220 U239

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Xylene 1330-20-7	-	Included in waste stream: F039	-	U239
Toluene 108-88-3	U220	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	-	U220
Cyclohexane 110-82-7	-	-	-	U056
Ethylbenzene 100-41-4	-	Included in waste stream: F039	-	-
Benzene 71-43-2	U019	Included in waste streams: F005, F024, F025, F037, F038, F039, K085, K104, K105, K141, K142, K143, K144, K145,	0.5 mg/L regulatory level	U019

		K147, K151, K159, K169, K171, K172		

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Toluene 108-88-3	-	-	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	-

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Naphtha; Low boiling point naphtha 8030-30-6	Toxic of petroleum or coal tar origin Ignitable of petroleum or coal tar origin
Xylene 1330-20-7	Toxic Ignitable
N-hexane 110-54-3	Toxic Ignitable
Toluene 108-88-3	Toxic Ignitable
Pentane 109-66-0	Toxic Ignitable
Cyclohexane 110-82-7	Toxic Ignitable
n-Heptane 142-82-5	Toxic Ignitable
Ethylbenzene 100-41-4	Toxic Ignitable
Benzene 71-43-2	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN/ID no	UN1268
Proper Shipping Name	Petroleum distillates, n.o.s.
Hazard Class	3
Packing group	II
Reportable Quantity (RQ)	(Hexane: RQ (kg)= 9080.00, Xylenes (mixed isomers): RQ (kg)= 181.60, Toluene: RQ (kg)= 3026.67)
Special Provisions	144, IB2, T7, TP1, TP8, TP28
Description	UN1268, Petroleum distillates, n.o.s., 3, II

Emergency Response Guide Number	128

TDG

UN/ID no	UN1268
Proper Shipping Name	Petroleum distillates, n.o.s.
Hazard Class	3
Packing group	II
Description	UN1268, Petroleum distillates, n.o.s., 3, II

MEX

UN/ID no	UN1268
Proper Shipping Name	Petroleum distillates, n.o.s.
Hazard Class	3
Packing group	II
Description	UN1268, Petroleum distillates, n.o.s., 3, II

IATA

UN/ID no	UN1268
Proper Shipping Name	Petroleum distillates, n.o.s.
Hazard Class	3
Packing group	II
ERG Code	3H
Description	UN1268, Petroleum distillates, n.o.s., 3, II

IMDG

UN/ID no	UN1268
Proper Shipping Name	Petroleum distillates, n.o.s.
Hazard Class	3
Packing group	II
EmS No.	F-E, S-E
Special Provisions	363
Description	UN1268, Petroleum distillates, n.o.s., 3, II, (23°C C.C.), Marine pollutant

15. REGULATORY INFORMATION

International Inventories

TSCA	Listed
DSL/NDSL	Listed
ENCS	Not Listed
IECSC	Listed
KECL	Listed
PICCS	Listed
AICS	Listed

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	Yes

Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Xylene 1330-20-7	100 lb	-	-	X
Toluene 108-88-3	1000 lb	X	X	X
Cyclohexane 110-82-7	1000 lb	-	-	X
Ethylbenzene 100-41-4	1000 lb	X	X	X
Benzene 71-43-2	10 lb	X	X	X

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

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Toluene - 108-88-3	Developmental
Ethylbenzene - 100-41-4	Carcinogen
Benzene - 71-43-2	Carcinogen Developmental Male Reproductive

U.S. State Right-to-Know Regulations

US State Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Naphtha; Low boiling point naphtha 8030-30-6	X	X	X
N-hexane 110-54-3	X	X	X
Xylene 1330-20-7	X	X	X
Cyclohexane 110-82-7	X	X	X
Toluene 108-88-3	X	X	X
Pentane 109-66-0	X	X	X
n-Heptane 142-82-5	X	X	X
Ethylbenzene 100-41-4	X	X	X

Benzene 71-43-2	X	X	X
1,2,4-Trimethylbenzene 95-63-6	X	X	X
Sulfur 7704-34-9	X	X	X

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Revision Date 19-Jun-2017

Revision Note No information available.

Disclaimer

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257, 258, 1017, 1019, 1021, 1027, 1716, 1452

End of Safety Data Sheet