

# SAFETY DATA SHEET



TruFuel 4-cycle Engineered Fuel

## Section 1. Identification

**GHS product identifier** : TruFuel 4-cycle Engineered Fuel  
**Product code** : 6527200  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

#### Identified uses

Consumer products: Fuel.  
Industrial applications: Fuel.

#### Uses advised against

None known.

#### Reason

**Supplier's details** : Calumet Branded Products, LLC  
2780 Waterfront Pkwy E. Drive Suite 200  
Indianapolis, IN 46214  
USA  
Technical Services:317-328-5660

**24hr. CHEMTREC** : 24 hr. CHEMTREC 1-800-424-9300 / International 1-703-527-3887  
**1-800-424-9300 /**  
**International 1-703-527-3887**

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** :  **FLAMMABLE LIQUIDS** - Category 1  
ACUTE TOXICITY (dermal) - Category 4  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION (Fertility) - Category 2  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs, kidneys, liver) - Category 2  
ASPIRATION HAZARD - Category 1  
AQUATIC HAZARD (ACUTE) - Category 2  
AQUATIC HAZARD (LONG-TERM) - Category 2  
 Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 17%  
Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 97%  
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 59.3%

### GHS label elements

## Section 2. Hazards identification

**Hazard pictograms**



**Signal word**

: Danger

**Hazard statements**

- : Extremely flammable liquid and vapor.
- Harmful in contact with skin or if inhaled.
- Causes serious eye irritation.
- Causes skin irritation.
- Suspected of damaging fertility or the unborn child.
- Suspected of causing cancer.
- May be fatal if swallowed and enters airways.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.
- May cause damage to organs through prolonged or repeated exposure. (hearing organs, kidneys, liver)
- Toxic to aquatic life with long lasting effects.

**Precautionary statements**

**General**

: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention**

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling.

**Response**

: Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: 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.

**Storage**

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

**Disposal**

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements**

: Avoid contact with skin and clothing. Wash thoroughly after handling.

**Hazards not otherwise classified**

: Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture**

: Mixture

**Other means of identification**

: Not available.

## Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Naphtha (petroleum), full-range alkylate, butane-contg.	≥50 - ≤75	68527-27-5
xylene	≥10 - ≤25	1330-20-7
toluene	≥10 - ≤25	108-88-3
isopentane	≥10 - ≤25	78-78-4
ethylbenzene	≤2.3	100-41-4
n-hexane	≤0.3	110-54-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Harmful in contact with skin. Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness

## Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 nausea or vomiting  
 headache  
 drowsiness/fatigue  
 dizziness/vertigo  
 unconsciousness  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 dryness  
 cracking  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 nausea or vomiting  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Extremely flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

## Section 5. Fire-fighting measures

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

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Naphtha (petroleum), full-range alkylate, butane-contg.	<b>ACGIH TLV (United States).</b> TWA: 200 ppm 8 hours.
xylene	<b>ACGIH TLV (United States, 3/2017).</b> TWA: 100 ppm 8 hours. TWA: 434 mg/m <sup>3</sup> 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m <sup>3</sup> 15 minutes.
	<b>OSHA PEL (United States, 6/2016).</b> TWA: 100 ppm 8 hours. TWA: 435 mg/m <sup>3</sup> 8 hours.
	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 100 ppm 8 hours. TWA: 435 mg/m <sup>3</sup> 8 hours. STEL: 150 ppm 15 minutes. STEL: 655 mg/m <sup>3</sup> 15 minutes.
toluene	<b>ACGIH TLV (United States, 3/2017).</b> TWA: 20 ppm 8 hours.
	<b>OSHA PEL Z2 (United States, 2/2013).</b> TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes.
	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 100 ppm 8 hours. TWA: 375 mg/m <sup>3</sup> 8 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m <sup>3</sup> 15 minutes.
	<b>NIOSH REL (United States, 10/2016).</b> TWA: 100 ppm 10 hours. TWA: 375 mg/m <sup>3</sup> 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m <sup>3</sup> 15 minutes.
isopentane	<b>ACGIH TLV (United States, 3/2017).</b> TWA: 1000 ppm 8 hours.
ethylbenzene	<b>ACGIH TLV (United States, 3/2017).</b> TWA: 20 ppm 8 hours.
	<b>OSHA PEL (United States, 6/2016).</b> TWA: 100 ppm 8 hours. TWA: 435 mg/m <sup>3</sup> 8 hours.
	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 100 ppm 8 hours. TWA: 435 mg/m <sup>3</sup> 8 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m <sup>3</sup> 15 minutes.
	<b>NIOSH REL (United States, 10/2016).</b> TWA: 100 ppm 10 hours. TWA: 435 mg/m <sup>3</sup> 10 hours. STEL: 125 ppm 15 minutes.

## Section 8. Exposure controls/personal protection

<p>n-hexane</p>	<p>STEL: 545 mg/m<sup>3</sup> 15 minutes.</p> <p><b>ACGIH TLV (United States, 3/2017).</b>  <b>Absorbed through skin.</b>                      TWA: 50 ppm 8 hours.</p> <p><b>OSHA PEL (United States, 6/2016).</b>                      TWA: 500 ppm 8 hours.                      TWA: 1800 mg/m<sup>3</sup> 8 hours.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>                      TWA: 50 ppm 8 hours.                      TWA: 180 mg/m<sup>3</sup> 8 hours.</p> <p><b>NIOSH REL (United States, 10/2016).</b>                      TWA: 50 ppm 10 hours.                      TWA: 180 mg/m<sup>3</sup> 10 hours.</p>
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**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin protection**

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid. [Mobile liquid.]
<b>Color</b>	: Clear.
<b>Odor</b>	: Characteristic. Hydrocarbon.
<b>Odor threshold</b>	: Not available.
<b>pH</b>	: Not available.
<b>Melting point</b>	: Not available.
<b>Boiling point</b>	: 34.444 to 190.56°C (94 to 375°F)
<b>Flash point</b>	: Closed cup: -40°C (-40°F) [Tagliabue.]
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: Not available.
<b>Relative density</b>	: 0.7199
<b>Solubility</b>	: Insoluble in the following materials: cold water and hot water.
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Kinematic (40°C (104°F)): <0.205 cm <sup>2</sup> /s (<20.5 cSt)
<b>Flow time (ISO 2431)</b>	: Not available.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: oxidizing materials
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), full-range alkylate, butane-contg. xylene	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours
toluene	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
isopentane	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	636 mg/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	280000 mg/m <sup>3</sup>	4 hours
	LC50 Inhalation Gas.	Rat	4000 ppm	4 hours
n-hexane	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapor	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
toluene	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
ethylbenzene	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-
n-hexane	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
toluene	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-
ethylbenzene	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
n-hexane	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
	Eyes - Mild irritant	Rabbit	-	10 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

**Conclusion/Summary** : Animal tumorigen. May cause tumors.

### Classification

Product/ingredient name	OSHA	IARC	NTP
xylene	-	3	-
toluene	-	3	-
ethylbenzene	-	2B	-

## Section 11. Toxicological information

### Reproductive toxicity

Not available.

**Conclusion/Summary** : Reproductive toxicant - female Suspected of damaging the unborn child if inhaled.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Naphtha (petroleum), full-range alkylate, butane-contg. xylene	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation and
toluene	Category 3	Not applicable.	Narcotic effects Respiratory tract irritation and
ethylbenzene	Category 3	Not applicable.	Narcotic effects
n-hexane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
toluene	Category 2	Not determined	kidneys and liver
ethylbenzene	Category 2	Not determined	hearing organs
n-hexane	Category 2	Not determined	peripheral nervous system

### Aspiration hazard

Name	Result
Naphtha (petroleum), full-range alkylate, butane-contg. xylene	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** :  Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Harmful in contact with skin. Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

## Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 nausea or vomiting  
 headache  
 drowsiness/fatigue  
 dizziness/vertigo  
 unconsciousness  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 dryness  
 cracking  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 nausea or vomiting  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

- General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : Suspected of damaging the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : Suspected of damaging fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	2730.7 mg/kg
Dermal	1246.9 mg/kg
Inhalation (gases)	17305.3 ppm

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
toluene	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
isopentane	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
ethylbenzene	Acute EC50 2.3 mg/l	Daphnia - Daphnia magna	48 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6530 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
n-hexane	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
isopentane	301F Ready Biodegradability - Manometric Respirometry Test	71.43 % - 28 days	-	-
ethylbenzene	301B Ready Biodegradability - CO <sub>2</sub> Evolution Test	70 to 80 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
toluene	-	-	Readily
isopentane	-	-	Readily
ethylbenzene	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Naphtha (petroleum), full-range alkylate, butane-contg.	-	10 to 2500	high
xylene	3.12	8.1 to 25.9	low
toluene	2.73	90	low
isopentane	3	171	low
ethylbenzene	3.6	-	low
n-hexane	4	501.187	high

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

## Section 12. Ecological information

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**RCRA classification** : D001 [Flammable]

### United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Xylene Toluene; Benzene, methyl-	1330-20-7 108-88-3	Listed Listed	U239 U220

## Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
<b>UN number</b>	UN1203	UN1203	UN1203	UN1203
<b>UN proper shipping name</b>	Gasoline	GASOLINE	GASOLINE	Gasoline
<b>Transport hazard class(es)</b>	3 	3  	3  	3 
<b>Packing group</b>	II	II	II	II
<b>Environmental hazards</b>	No.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

### Additional information

**DOT Classification** : **Reportable quantity** 482.21 lbs / 218.92 kg [80.335 gal / 304.1 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.  
**Limited quantity** Yes.  
**Packaging instruction** Exceptions: 150. Non-bulk: 202. Bulk: 242.  
**Quantity limitation** Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.  
**Special provisions** 144, 177, B1, B33, IB2, T4

## Section 14. Transport information

- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.  
**Explosive Limit and Limited Quantity Index** 30  
**Passenger Carrying Ship Index** 100  
**Passenger Carrying Road or Rail Index** 5  
**Special provisions** 17, 88, 91, 98, 150
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Emergency schedules** F-E, S-E  
**Special provisions** 243, 363
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.  
**Quantity limitation** Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.  
**Special provisions** A100
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 8(a) PAIR:** naphthalene  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
 **Clean Water Act (CWA) 307:** ethylbenzene; toluene; naphthalene; benzene  
 **Clean Water Act (CWA) 311:** xylene; ethylbenzene; toluene; naphthalene; benzene  
**Clean Air Act (CAA) 112 regulated flammable substances:** isopentane
- 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
- DEA List I Chemicals (Precursor Chemicals)** : Not listed
- DEA List II Chemicals (Essential Chemicals)** : Listed
- SARA 302/304**  
**Composition/information on ingredients**  
 No products were found.
- SARA 304 RQ** : Not applicable.
- SARA 311/312**  
**Classification** :  **FLAMMABLE LIQUIDS** - Category 1  
 ACUTE TOXICITY (dermal) - Category 4  
 ACUTE TOXICITY (inhalation) - Category 4  
 SKIN IRRITATION - Category 2  
 EYE IRRITATION - Category 2A  
 CARCINOGENICITY - Category 2  
 TOXIC TO REPRODUCTION (Fertility) - Category 2

## Section 15. Regulatory information

TOXIC TO REPRODUCTION (Unborn child) - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs, kidneys, liver) - Category 2  
 ASPIRATION HAZARD - Category 1  
 HNOC - Defatting irritant

### Composition/information on ingredients

Name	%	Classification
Naphtha (petroleum), full-range alkylate, butane-contg.	≥50 - ≤75	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 TOXIC TO REPRODUCTION (Fertility) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
xylene	≥10 - ≤25	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
toluene	≥10 - ≤25	ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
isopentane	≥10 - ≤25	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys, liver) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid FLAMMABLE LIQUIDS - Category 1 HNOC - Defatting irritant
ethylbenzene	≤2.3	HNOC - Static-accumulating flammable liquid FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
n-hexane	≤0.3	HNOC - Static-accumulating flammable liquid FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Fertility) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

## Section 15. Regulatory information

(Narcotic effects) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (peripheral nervous system) - Category 2  
 ASPIRATION HAZARD - Category 1  
 HNOX - Static-accumulating flammable liquid

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Xylene	1330-20-7	≥10 - ≤25
	toluene	108-88-3	≥10 - ≤25
	ethylbenzene	100-41-4	≤2.3
Supplier notification	Xylene	1330-20-7	≥10 - ≤25
	toluene	108-88-3	≥10 - ≤25
	ethylbenzene	100-41-4	≤2.3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

#### Massachusetts

: The following components are listed: XYLENE; DIMETHYLBENZENE; ETHYL BENZENE; ETHYLBENZENE; TOLUENE; METHYLBENZENE; ISOPENTANE

#### New York

: The following components are listed: Xylene mixed; Ethylbenzene; Toluene

#### New Jersey

: The following components are listed: XYLENES; BENZENE, DIMETHYL-; ETHYL BENZENE; BENZENE, ETHYL-; TOLUENE; BENZENE, METHYL-; ISOPENTANE; BUTANE, 2-METHYL-

#### Pennsylvania

: The following components are listed: BENZENE, DIMETHYL-; BENZENE, ETHYL-; BENZENE, METHYL-; BUTANE, 2-METHYL-

### California Prop. 65

**⚠ WARNING:** This product can expose you to Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Ethylbenzene, Naphthalene, which are known to the State of California to cause cancer, and n-Hexane, Toluene, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
X-Hexane	-	-
Toluene	-	Yes.
Ethylbenzene	Yes.	-
Naphthalene	Yes.	-
Benzene	Yes.	Yes.

### International lists

#### National inventory

#### Australia

: All components are listed or exempted.

#### Canada

: All components are listed or exempted.

#### China

: Not determined.

#### Europe

: All components are listed or exempted.

#### Japan

: **Japan inventory (ENCS):** Not determined.  
**Japan inventory (ISHL):** Not determined.

#### Malaysia

: Not determined.

#### New Zealand

: Not determined.

#### Philippines

: Not determined.

#### Republic of Korea

: All components are listed or exempted.

#### Taiwan

: All components are listed or exempted.

#### Thailand

: Not determined.

#### Turkey

: Not determined.

## Section 15. Regulatory information

- United States** : All components are listed or exempted.  
**Viet Nam** : Not determined.

## Section 16. Other information

### Procedure used to derive the classification

Classification	Justification
 am. Liq. 1, H224 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 Repr. 2, H361 (Fertility) Repr. 2, H361 (Unborn child) STOT SE 3, H335 STOT SE 3, H336 STOT RE 2, H373 (hearing organs, kidneys, liver) Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 2, H411	On basis of test data Calculation method Calculation method

### History

**Date of issue/Date of revision** : 06/21/2018

**Version** : 2.03

### Key to abbreviations

- : ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

 Indicates information that has changed from previously issued version.

### Notice to reader

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