

# SAFETY DATA SHEET

CITGO Turbine Fuel, Jet JP-8



## Section 1. Identification

**GHS product identifier** : CITGO Turbine Fuel, Jet JP-8  
**Synonyms** : Aviation Fuel; Turbine Fuel;  
**Code** : 06105  
**MSDS #** : 06105

**Supplier's details** : CITGO Petroleum Corporation  
P.O. Box 4689  
Houston, TX 77210  
sdsvend@citgo.com

**Emergency telephone number (with hours of operation)** : Technical Contact: (800) 248-4684  
Medical Emergency: (832) 486-4700  
CHEMTREC Emergency: (800) 424-9300  
(United States Only)

## 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 3  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
ASPIRATION HAZARD - Category 1  
AQUATIC HAZARD (ACUTE) - Category 2  
AQUATIC HAZARD (LONG-TERM) - Category 2

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** : Flammable liquid and vapor.  
Causes serious eye irritation.  
Causes skin irritation.  
Suspected of causing cancer.  
May be fatal if swallowed and enters airways.  
May cause drowsiness or dizziness.  
Toxic to aquatic life with long lasting effects.

### Precautionary statements

**General** : Diesel engine exhaust can cause upper respiratory tract irritation and reversible pulmonary effects. Long-term exposure to diesel engine exhaust may cause cancer. Do not syphon by mouth.

## Section 2. Hazards identification

- 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. Avoid breathing vapor. Wash hands thoroughly after handling.
- Response** : Collect spillage. 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. 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** : Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Avoid contact with skin and clothing. Wash thoroughly after handling.
- Hazards not otherwise classified** : Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion. Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Substance
- Other means of identification** : Aviation Fuel; Turbine Fuel;

### CAS number/other identifiers

- CAS number** : Not available.

Ingredient name	%	CAS number
Kerosine (petroleum), hydrodesulfurized	30 - 60	64742-81-0
Distillates (petroleum), hydrodesulfurized middle	30 - 60	64742-80-9
Distillates (petroleum), hydrodesulfurized light catalytic cracked	30 - 60	68333-25-5
Kerosine petroleum	30 - 60	8008-20-6
Naphthalene	1 - 5	91-20-3
Ethylbenzene	0.5 - 1.5	100-41-4
Xylene	0.5 - 1.5	1330-20-7
Cumene	0.5 - 1.5	98-82-8

\* = Various      \*\* = Mixture      \*\*\* = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process 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. Continue to rinse for at least 10 minutes. Get medical attention. 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. 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** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : 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
- Inhalation** : Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination.  
Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

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

## Section 4. First aid measures

- Notes to physician** : If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is 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.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use caution when applying carbon dioxide in confined spaces.  
SMALL FIRE: Steam, CO<sub>2</sub>, dry chemical or inert gas (e.g., nitrogen). LARGE FIRE: Use foam, water fog or water spray. Water fog and spray are effective in cooling containers and adjacent structures. However, water can cause frothing and/or may not extinguish the fire. Water can be used to cool the external walls of vessels to prevent excessive pressure, ignition or explosion.
- Unsuitable extinguishing media** : Do not use water jet.

### Specific hazards arising from the chemical

- : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. 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  
Diesel engine exhaust

### 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.

### 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.

## Section 6. Accidental release measures

**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. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. 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. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle.
- Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained a dissimilar product).

## Section 7. Handling and storage

**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.

**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.

**Bulk Storage Conditions:** Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Head spaces in tanks and other containers may contain a mixture of air and vapor in the flammable range. Vapor may be ignited by static discharge. Storage area must meet OSHA requirements and applicable fire codes. Additional information regarding the design and control of hazards associated with the handling and storage of flammable and combustible liquids may be found in professional and industrial documents including, but not limited to, the National Fire Protection Association (NFPA) publications NFPA 30 ("Flammable and Combustible Liquid Code"), NFPA 77 ("Recommended Practice on Static Electricity") and the American Petroleum Institute (API) Recommended Practice 2003, ("Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents").

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Kerosine (petroleum), hydrodesulfurized

**ACGIH TLV (United States, 4/2014).  
Absorbed through skin.**

TWA: 200 mg/m<sup>3</sup>, (as total hydrocarbon vapor) 8 hours.

Naphthalene

**ACGIH (United States). Absorbed through skin.**

TWA: 10 ppm 8 hours.

STEL: 15 ppm 15 minutes.

**OSHA (United States).**

TWA: 10 ppm 8 hours.

**ACGIH TLV (United States, 4/2014).  
Absorbed through skin.**

TWA: 10 ppm 8 hours.

TWA: 52 mg/m<sup>3</sup> 8 hours.

**OSHA PEL (United States, 2/2013).**

TWA: 10 ppm 8 hours.

TWA: 50 mg/m<sup>3</sup> 8 hours.

Ethylbenzene

**ACGIH TLV (United States, 4/2014).**

TWA: 20 ppm 8 hours.

**OSHA PEL (United States, 2/2013).**

TWA: 100 ppm 8 hours.

TWA: 435 mg/m<sup>3</sup> 8 hours.

Xylene

**ACGIH TLV (United States, 4/2014).**

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.

## Section 8. Exposure controls/personal protection

### OSHA PEL (United States, 2/2013).

TWA: 100 ppm 8 hours.

TWA: 435 mg/m<sup>3</sup> 8 hours.

### ACGIH TLV (United States, 4/2014).

TWA: 50 ppm 8 hours.

### OSHA PEL (United States, 2/2013).

#### Absorbed through skin.

TWA: 50 ppm 8 hours.

TWA: 245 mg/m<sup>3</sup> 8 hours.

Cumene

### 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, vapor controls, 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 glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. 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 inhalation hazards exist, a full-face respirator may be required instead.

### Skin protection

#### Hand protection

: Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Heavy duty, industrial grade chemically resistant gloves constructed of nitrile, neoprene, polyethylene, fluoroelastomer rubber or polyvinyl chloride as approved by glove manufacturer. 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. Leather gloves are not protective for liquid contact.

#### Body protection

: Avoid skin contact with liquid. 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.

#### Other skin protection

: Avoid skin contact with liquid. 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. Leather boots are not protective for liquid contact.

### Respiratory protection

: Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If an air purifying respirator is appropriate, use one equipped with cartridges rated for organic vapors.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Clear to light amber.
<b>Odor</b>	: Characteristic hydrocarbon odor.
<b>pH</b>	: Not available.
<b>Boiling point</b>	: 150 to 400°C (302 to 752°F)
<b>Flash point</b>	: Closed cup: 38°C (100.4°F) [Pensky-Martens. (minimum)]
<b>Evaporation rate</b>	: <0.1 (butyl acetate = 1)
<b>Lower and upper explosive (flammable) limits</b>	: Lower: 0.7% Upper: 5%
<b>Vapor pressure</b>	: <0.27 kPa (<2 mm Hg) [room temperature]
<b>Vapor density</b>	: 4 [Air = 1]
<b>Relative density</b>	: 0.82
<b>Density lbs/gal</b>	: Estimated 6.84 lbs/gal
<b>Density gm/cm<sup>3</sup></b>	: Not available.
<b>Gravity, °API</b>	: Estimated 41 @ 60 F
<b>Solubility</b>	: Very slightly soluble in the following materials: cold water.
<b>Flow time (ISO 2431)</b>	: Not available.
<b>Conductivity</b>	: <50 picosiemens/meter (unadditized)

## Section 10. Stability and reactivity

<b>Reactivity</b>	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
<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. Do not allow vapor to accumulate in low or confined areas. Do not store with strong oxidizing agents.
<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

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), hydrodesulfurized middle	LC50 Inhalation Dusts and mists	Rat	4600 mg/m <sup>3</sup>	4 hours
Kerosine petroleum	LD50 Oral	Rat	15 g/kg	-
Naphthalene	LD50 Oral	Rat	490 mg/kg	-
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-



## Section 11. Toxicological information

Xylene	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6700 ppm	4 hours
Cumene	LD50 Oral	Mouse	2119 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Vapor	Mouse	10 g/m <sup>3</sup>	7 hours
	LD50 Dermal	Rabbit	12300 uL/kg	-
	LD50 Oral	Rat	2.9 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-

**Conclusion/Summary** : No additional information.

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Kerosine (petroleum), hydrodesulfurized	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Distillates (petroleum), hydrodesulfurized middle	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Kerosine petroleum	Skin - Moderate irritant	Rabbit	-	0.5 Milliliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 Percent	-
Naphthalene	Skin - Mild irritant	Rabbit	-	495 milligrams	-
Ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
Xylene	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Cumene	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Mild irritant	Rabbit	-	86 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-

**Skin** : No additional information.

**Eyes** : No additional information.

**Respiratory** : No additional information.

### Sensitization

Not available.

**Skin** : No additional information.

**Respiratory** : No additional information.

### Mutagenicity

Not available.

**Conclusion/Summary** : **naphthalene**: Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) *in vitro*.

### Carcinogenicity

Not available.

**Conclusion/Summary** : **naphthalene**: Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract.  
**Diesel exhaust particulate**: Lung tumor and lymphomas were identified in rats and mice exposed to unfiltered diesel fuel exhaust in chronic inhalation studies. Further, epidemiological studies have identified increase incidences of lung cancer in US railroad workers and bladder cancer in bus and truck drivers possibly associated with exposure to diesel engine exhaust. NTP has determined that exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen. In addition, NIOSH has identified complete diesel exhaust as a potential carcinogen.

## Section 11. Toxicological information

### Classification

Product/ingredient name	OSHA	IARC	NTP
Kerosine petroleum	-	3	-
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
Ethylbenzene	-	2B	-
Xylene	-	3	-
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.

### Reproductive toxicity

Not available.

**Conclusion/Summary** : No additional information.

### Teratogenicity

Not available.

**Conclusion/Summary** : No additional information.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Distillates (petroleum), hydrodesulfurized middle	Category 3	Not applicable.	Narcotic effects
Kerosine (petroleum), hydrodesulfurized	Category 3	Not applicable.	Narcotic effects
Distillates (petroleum), hydrodesulfurized light catalytic cracked	Category 3	Not applicable.	Narcotic effects
Kerosine petroleum	Category 3	Not applicable.	Narcotic effects
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Xylene	Category 2	Not determined	hearing organs

### Aspiration hazard

Name	Result
Distillates (petroleum), hydrodesulfurized middle	ASPIRATION HAZARD - Category 1
Kerosine (petroleum), hydrodesulfurized	ASPIRATION HAZARD - Category 1
Distillates (petroleum), hydrodesulfurized light catalytic cracked	ASPIRATION HAZARD - Category 1
Kerosine petroleum	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

**Skin contact** : 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

## Section 11. Toxicological information

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination.  
Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

### 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** : 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** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Kerosine petroleum Naphthalene	Acute EC50 1.4 mg/l	Daphnia	48 hours
	Acute EC50 1.6 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	60 days

## Section 12. Ecological information

Ethylbenzene	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
	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Xylene	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Cumene	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

**Conclusion/Summary** : Not available.

### Persistence and degradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Naphthalene	3.4	36.5 to 168	low
Ethylbenzene	3.6	-	low
Xylene	3.12	8.1 to 25.9	low
Cumene	3.55	35.48	low

### Mobility in soil

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

**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

## Section 13. Disposal considerations




with soil, waterways, drains and sewers.

**RCRA classification** : D001, D018

[United States - RCRA Toxic hazardous waste "U" List](#)

Ingredient	CAS #	Status	Reference number
Naphthalene	91-20-3	Listed	U165

## Section 14. Transport information

	DOT Classification	IMDG	IATA
<b>UN number</b>	UN 1863	UN 1863	UN 1863
<b>UN proper shipping name</b>	UN 1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III	UN 1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III	UN 1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III
<b>Transport hazard class(es)</b>	3 	3 	3 
<b>Packing group</b>	III	III	III
<b>Environmental hazards</b>	No.	No.	No.

### Additional information

**DOT Classification** : **Packaging instruction**  
**Passenger aircraft**  
Quantity limitation: 60 L

**Cargo aircraft**  
Quantity limitation: 220 L

**TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).

**ADR/RID** : **Tunnel code** (D/E)

**IATA** : **Quantity limitation** Cargo Aircraft Only: 220 L. Limited Quantities - Passenger Aircraft: 60 L.

**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** : **United States inventory (TSCA 8b):** All components are listed or exempted.  
**Clean Water Act (CWA) 307:** naphthalene; ethylbenzene; toluene; benzene  
**Clean Water Act (CWA) 311:** naphthalene; ethylbenzene; xylene; toluene; benzene

## Section 15. Regulatory information

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

### SARA 302/304

#### Composition/information on ingredients

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : FLAMMABLE LIQUIDS - Category 3  
 SKIN IRRITATION - Category 2  
 EYE IRRITATION - Category 2A  
 CARCINOGENICITY - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
 ASPIRATION HAZARD - Category 1  
 HNOC - Static-accumulating flammable liquid  
 HNOC - Defatting irritant

#### Composition/information on ingredients

Name	%	Classification
CITGO Turbine Fuel, Jet JP-8	>99	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid HNOC - Defatting irritant
Kerosine (petroleum), hydrodesulfurized	30 - 60	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
Distillates (petroleum), hydrodesulfurized middle	30 - 60	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY (dermal) - Category 2 CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
Distillates (petroleum), hydrodesulfurized light catalytic cracked	30 - 60	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 CARCINOGENICITY (dermal) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
Kerosine petroleum	30 - 60	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
Naphthalene	1 - 5	FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4

## Section 15. Regulatory information

Ethylbenzene	0.5 - 1.5	CARCINOGENICITY - Category 2 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Xylene	0.5 - 1.5	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2
Cumene	0.5 - 1.5	FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1

### SARA 313

	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	naphthalene	91-20-3	<4
	ethylbenzene	100-41-4	<2
<b>Supplier notification</b>	naphthalene	91-20-3	<4
	ethylbenzene	100-41-4	<2

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: KEROSENE; NAPHTHALENE
- New York** : The following components are listed: Naphthalene; Ethylbenzene; Cumene; Benzene, 1-methylethyl-
- New Jersey** : The following components are listed: KEROSENE; FUEL OIL #1; NAPHTHALENE; MOTH FLAKES; ethylbenzene; cumene
- Pennsylvania** : The following components are listed: KEROSENE (PETROLEUM); NAPHTHALENE; ethylbenzene; cumene

### California Prop. 65 Clear and Reasonable Warnings (2018)

**⚠ 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 Unleaded gasoline, Naphthalene, Ethylbenzene, Cumene, Diesel exhaust particulate, which are known to the State of California to cause cancer, and Toluene, which is 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	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Kerosine (petroleum)	<60	Yes.	No.	-	-
naphthalene	<4	Yes.	No.	Yes.	-
ethylbenzene	<2	Yes.	No.	Yes.	-
cumene	<2	Yes.	No.	-	-
toluene	<0.1	No.	Yes.	-	Yes.
benzene	<0.1	Yes.	Yes.	Yes.	Yes.
Diesel exhaust particulate	<2	Yes.	No.	-	-

### International regulations

## Section 15. Regulatory information

**WHMIS (Canada)** : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).  
 Class D-2A: Material causing other toxic effects (Very toxic).  
 Class D-2B: Material causing other toxic effects (Toxic).

### Inventory list

**United States** : All components are listed or exempted.  
**Australia** : Not determined.  
**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** : Not determined.  
**Taiwan** : Not determined.  
**Thailand** : Not determined.  
**Turkey** : Not determined.  
**Viet Nam** : Not determined.

## Section 16. Other information

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	Expert judgment
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
CARCINOGENICITY - Category 2	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
ASPIRATION HAZARD - Category 1	Expert judgment
AQUATIC HAZARD (ACUTE) - Category 2	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

### History

**Date of printing** : 3/20/2018  
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**Date of previous issue** : No previous validation



## Section 16. Other information

**Version** : 1

**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

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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