

# SAFETY DATA SHEET

Gasoline Blend Stocks



## Section 1. Identification

**Product name** : Gasoline Blend Stocks  
**Product code** : Not available.  
**Synonyms** : Alkylate, Cat Gas, Cat Gasoline, Cat Poly gasoline, CRU1 Reformate, CRU2 Reformate, Crude LSR Gasoline, Deiso bottoms - Alkylate, Deisohexanizer Bottoms, FCC Gasoline, FCCU Cat Gasoline, Heavy FCC Gasoline, Heavy Platformate, Heavy Straight Run (HSR), Isomate, Isostripper bottoms - Alkylate, Jet Base, Light Cat Naphtha (LCN), Light FCC Gasoline, Light Plat. (BZSU Splitter OH), Light Straight Run, Low Sulfur Cat Gas, LSR, Naphtha Splitter Bottoms, Penate gasoline, Platformate, Raffinate, Reformate, Reformate gasoline, Scanfinate, Scanfiner Rundown, Sweet Naphtha, Total Plat

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

**Product use** : Intermediate.  
**Area of application** : Industrial applications.

**Manufacturer** : HollyFrontier Refining & Marketing LLC  
2828 North Harwood  
Suite 1300  
Dallas, Texas 75201  
USA  
Customer Service: 1-214-954-6720

**e-mail address of person responsible for this SDS** : hfcsds@hollyfrontier.com  
**Emergency telephone number** : CHEMTREC® (800) 424-9300  
CCN 201319

## 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** : **H224** FLAMMABLE LIQUIDS - Category 1  
**H315** SKIN IRRITATION - Category 2  
**H340** GERM CELL MUTAGENICITY - Category 1  
**H350** CARCINOGENICITY - Category 1B  
**H361** TOXIC TO REPRODUCTION - Category 2  
**H336** SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
**H304** ASPIRATION HAZARD - Category 1

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** : H224 - Extremely flammable liquid and vapor.  
 H304 - May be fatal if swallowed and enters airways.  
 H315 - Causes skin irritation.  
 H336 - May cause drowsiness or dizziness.  
 H340 - May cause genetic defects.  
 H350 - May cause cancer.  
 H361 - Suspected of damaging fertility or the unborn child.

### Precautionary statements

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling.

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

**Storage** : 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. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	Other names	%	CAS number
Gasoline	-	0 - 80	86290-81-5
pentane	-	0 - 30	109-66-0
n-hexane	-	0 - 25	110-54-3
toluene	-	0 - 22	108-88-3
benzene	-	0 - 10	71-43-2
ethylbenzene	-	0 - 7	100-41-4
1,2,4-trimethylbenzene	-	0 - 5	95-63-6
naphthalene	-	0 - 1	91-20-3
hydrogen sulphide	-	<0.0001	7783-06-4

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 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. Get medical attention. Continue to rinse for at least 15 minutes.

- 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 15 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : 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. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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** : May cause mild 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** : pain or irritation; watering; redness
- Inhalation** : respiratory tract irritation; coughing; nausea or vomiting; headache; drowsiness/fatigue; dizziness/vertigo; unconsciousness
- Skin contact** : irritation; redness; dryness; cracking
- Ingestion** : nausea or vomiting

### 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. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents.
- Specific treatments** : No specific treatment.
- Protection of medical responders** : 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. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

**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.

**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. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.
- 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).

### 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. Absorb with an inert 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, waterways, 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 swallow. Avoid breathing vapor or mist. 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. High pressure skin injections are serious medical emergencies. Injury will not appear serious at first. Within a few hours, tissue will become swollen, discolored and extremely painful. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.
- 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. 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.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	<b>ACGIH TLV (United States, 3/2020).</b> TWA: 300 ppm 8 hours. TWA: 890 mg/m <sup>3</sup> 8 hours. STEL: 500 ppm 15 minutes. STEL: 1480 mg/m <sup>3</sup> 15 minutes.
pentane	<b>NIOSH REL (United States, 10/2016).</b> TWA: 120 ppm 10 hours. TWA: 350 mg/m <sup>3</sup> 10 hours. CEIL: 610 ppm 15 minutes. CEIL: 1800 mg/m <sup>3</sup> 15 minutes.
n-hexane	<b>ACGIH TLV (United States, 3/2020).</b> TWA: 1000 ppm 8 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 1000 ppm 8 hours. TWA: 2950 mg/m <sup>3</sup> 8 hours. <b>ACGIH TLV (United States, 3/2020). Absorbed through skin.</b> TWA: 50 ppm 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 50 ppm 10 hours. TWA: 180 mg/m <sup>3</sup> 10 hours.
toluene	<b>OSHA PEL (United States, 5/2018).</b> TWA: 500 ppm 8 hours. TWA: 1800 mg/m <sup>3</sup> 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>NIOSH REL (United States, 10/2016).</b> TWA: 100 ppm 10 hours.

benzene	<p>TWA: 375 mg/m<sup>3</sup> 10 hours.          STEL: 150 ppm 15 minutes.          STEL: 560 mg/m<sup>3</sup> 15 minutes.  <b>ACGIH TLV (United States, 3/2020).</b>          TWA: 20 ppm 8 hours.  <b>ACGIH TLV (United States, 3/2020). Absorbed through skin.</b>          TWA: 0.5 ppm 8 hours.          TWA: 1.6 mg/m<sup>3</sup> 8 hours.          STEL: 2.5 ppm 15 minutes.          STEL: 8 mg/m<sup>3</sup> 15 minutes.  <b>OSHA PEL Z2 (United States, 2/2013).</b>          TWA: 10 ppm 8 hours.          CEIL: 25 ppm          AMP: 50 ppm 10 minutes.  <b>NIOSH REL (United States, 10/2016).</b>          TWA: 0.1 ppm 10 hours.          STEL: 1 ppm 15 minutes.  <b>OSHA PEL (United States, 5/2018).</b>          TWA: 1 ppm 8 hours.          STEL: 5 ppm 15 minutes.</p>
ethylbenzene	<p><b>ACGIH TLV (United States, 3/2020).</b>          TWA: 20 ppm 8 hours.  <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.          STEL: 545 mg/m<sup>3</sup> 15 minutes.  <b>OSHA PEL (United States, 5/2018).</b>          TWA: 100 ppm 8 hours.          TWA: 435 mg/m<sup>3</sup> 8 hours.</p>
1,2,4-trimethylbenzene	<p><b>ACGIH TLV (United States, 3/2020).</b>          TWA: 25 ppm 8 hours.          TWA: 123 mg/m<sup>3</sup> 8 hours.  <b>NIOSH REL (United States, 10/2016).</b>          TWA: 25 ppm 10 hours.          TWA: 125 mg/m<sup>3</sup> 10 hours.</p>
naphthalene	<p><b>ACGIH TLV (United States, 3/2020). Absorbed through skin.</b>          TWA: 10 ppm 8 hours.          TWA: 52 mg/m<sup>3</sup> 8 hours.  <b>NIOSH REL (United States, 10/2016).</b>          TWA: 10 ppm 10 hours.          TWA: 50 mg/m<sup>3</sup> 10 hours.          STEL: 15 ppm 15 minutes.          STEL: 75 mg/m<sup>3</sup> 15 minutes.  <b>OSHA PEL (United States, 5/2018).</b>          TWA: 10 ppm 8 hours.          TWA: 50 mg/m<sup>3</sup> 8 hours.</p>
hydrogen sulphide	<p><b>ACGIH TLV (United States, 3/2020).</b>          TWA: 1 ppm 8 hours.          STEL: 5 ppm 15 minutes.  <b>OSHA PEL Z2 (United States, 2/2013).</b>          CEIL: 20 ppm          AMP: 50 ppm 10 minutes.  <b>NIOSH REL (United States, 10/2016).</b>          CEIL: 10 ppm 10 minutes.          CEIL: 15 mg/m<sup>3</sup> 10 minutes.</p>

### 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. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

### 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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

- Physical state** : Liquid.
- Color** : Clear. to Amber.
- Odor** : Gasoline
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : -77 to -33°C (-107 to -27°F)
- Boiling point, initial boiling point, and boiling range** : -5 to 47°C (23 to 116°F)
- Flash point** : <38°C (<100°F)
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapor pressure** : 8.3 to 128.2 kPa (62.053 to 961.82 mm Hg)
- Relative vapor density** : Not available.
- Relative density** : 0.66 to 0.87
- Density** : Not available.
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** :



Ingredient name	°C	°F	Method
n-hexane	225	437	

<b>Decomposition temperature</b>	: Not available.
<b>SADT</b>	: Not available.
<b>Viscosity</b>	: Kinematic (40°C (104°F)): 0.0016 to 0.012 cm <sup>2</sup> /s (0.16 to 1.2 cSt)
<b>Flow time (ISO 2431)</b>	: Not available.
<b>Particle characteristics</b>	
<b>Median particle size</b>	: Not applicable.
<b>Additional information</b>	
<b>Physical/chemical properties comments</b>	: No additional information.

## 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. Under normal conditions of storage and use, hazardous polymerization 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

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LC50 Inhalation Vapor	Rat	>5.2 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
pentane	LC50 Inhalation Vapor	Rat	364 g/m <sup>3</sup>	4 hours
	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
n-hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	169.2 mg/l	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
	LD50 Dermal	Rat	12000 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
benzene	LC50 Inhalation Vapor	Rat	13700 ppm	4 hours
	LD50 Oral	Rat	930 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	>3160 mg/kg	-
	LD50 Oral	Rat	3280 mg/kg	-
naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-



hydrogen sulphide	LD50 Oral LC50 Inhalation Gas.	Rat Rat	490 mg/kg 444 ppm	- 4 hours
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**Conclusion/Summary** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines).

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-hexane	Eyes - Mild irritant	Rabbit	-	10 mg	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
toluene	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	870 ug	-
benzene	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
ethylbenzene	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
naphthalene	Eyes - Moderate irritant	Rabbit	-	88 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
naphthalene	Skin - Mild irritant	Rat	-	8 hours 60 uL	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
naphthalene	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Severe irritant	Rabbit	-	500 mg	-
naphthalene	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 0.05 MI	-

#### Conclusion/Summary

**Skin** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Slight to moderate/severe irritating to skin.

**Eyes** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Non-irritating to the eyes.

#### Sensitization

Product/ingredient name	Route of exposure	Species	Result
Gasoline	skin	Guinea pig	Not sensitizing

#### Conclusion/Summary

**Skin** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Not sensitizing.

**Respiratory** : No data available.

#### Carcinogenicity

Product/ingredient name	OSHA	IARC	NTP
toluene	-	3	-
benzene	+	1	Known to be a human carcinogen.
ethylbenzene	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

#### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline Blend Stocks	Category 3	-	Narcotic effects
Gasoline	Category 3	-	Narcotic effects
pentane	Category 3	-	Narcotic effects
n-hexane	Category 3	-	Respiratory tract irritation
toluene	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation
benzene	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation
ethylbenzene	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation
1,2,4-trimethylbenzene	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation
naphthalene	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation
hydrogen sulphide	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation
	Category 3	-	Narcotic effects

**Specific target organ toxicity (repeated exposure)**

Name	Category	Route of exposure	Target organs
n-hexane	Category 2	inhalation	nervous system
toluene	Category 2	inhalation	nervous system
benzene	Category 1	-	blood system, bone marrow, immune system, kidneys, liver
ethylbenzene	Category 2	-	hearing organs
naphthalene	Category 2	-	blood system, eyes
hydrogen sulphide	Category 2	inhalation	lungs

**Aspiration hazard**

Name	Result
Gasoline Blend Stocks	ASPIRATION HAZARD - Category 1
Gasoline	ASPIRATION HAZARD - Category 1
pentane	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
benzene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
1,2,4-trimethylbenzene	ASPIRATION HAZARD - Category 1

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

**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**

**Conclusion/Summary** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Inhalation: No systemic toxicity. Dermal: No systemic toxicity.

**General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : May cause genetic defects.

**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**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Gasoline Blend Stocks	3285.8	67500	N/A	218.8	N/A
Gasoline	13600	N/A	N/A	N/A	N/A
pentane	2500	N/A	N/A	364	N/A
n-hexane	15840	N/A	48000	169.2	N/A
toluene	636	12000	N/A	49	N/A
benzene	930	N/A	N/A	N/A	N/A
ethylbenzene	3500	N/A	N/A	11	N/A
1,2,4-trimethylbenzene	3280	2500	N/A	18	N/A
naphthalene	490	N/A	N/A	N/A	N/A
hydrogen sulphide	N/A	N/A	444	N/A	N/A

## Section 12. Ecological information

**Toxicity**

Product/ingredient name	Result	Species	Exposure
Gasoline	Acute EC50 1 to 10 mg/l	Daphnia	48 hours
	Acute IC50 1 to 10 mg/l	Algae	96 hours
	Acute LC50 1 to 10 mg/l	Fish	96 hours
n-hexane	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
toluene	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
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
benzene	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute EC50 29000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 1600000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute EC50 9.23 mg/l Fresh water	Daphnia - Daphnia magna -	48 hours

ethylbenzene	Acute LC50 21 mg/l Marine water	Neonate	48 hours
	Acute LC50 5.28 ul/L Fresh water	Crustaceans - Artemia salina	96 hours
	Chronic EC10 >1360 mg/l Fresh water	Fish - Oncorhynchus gorboscha - Fry	96 hours
		Algae - Desmodesmus subspicatus	21 days
	Chronic NOEC 98 mg/l Fresh water	Daphnia - Daphnia magna	4 weeks
	Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	72 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
1,2,4-trimethylbenzene	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	48 hours
	Acute EC50 6.53 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 2.93 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	96 hours
naphthalene	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	48 hours
	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pecteniscus - Adult	96 hours
	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	48 hours
hydrogen sulphide	Acute EC50 1.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	96 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	3 weeks
	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	60 days
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	2 days
Acute EC50 62 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus	96 hours	
Acute LC50 2 µg/l Fresh water	Fish - Coregonus clupeaformis - Yolk-sac fry		

**Conclusion/Summary** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines).

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
pentane	OECD 301F Ready Biodegradability - Manometric	87 % - Readily - 28 days	-	-
benzene	Respirometry Test 301C Ready Biodegradability - Modified MITI	100 % - 14 days	-	-
ethylbenzene	Test (I) ISO	70 to 80 % - Readily - 28 days	-	Activated sludge

**Conclusion/Summary** : Based on CONCAWE assessment of low boiling point naphthas (Gasolines).

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Gasoline	-	-	Inherent
pentane	-	-	Readily
n-hexane	-	-	Readily
toluene	-	-	Readily
benzene	-	-	Readily
ethylbenzene	-	-	Readily
naphthalene	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Gasoline	2 to 7	10 to 2500	high
pentane	3.45	171	low
n-hexane	4	501.187	high
toluene	2.73	90	low
benzene	2.13	11	low
ethylbenzene	3.6	-	low
1,2,4-trimethylbenzene	3.63	243	low
naphthalene	3.4	36.5 to 168	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 with soil, waterways, drains and sewers.

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

Ingredient	CAS #	Status	Reference number
Toluene; Benzene, methyl-Benzene (I,T)	108-88-3 71-43-2	Listed Listed	U220 U019

**Section 14. Transport information**

	DOT Classification	IMDG	IATA
UN number	UN3295	UN3295	UN3295
UN proper shipping name	Hydrocarbons, liquid, n.o.s.	HYDROCARBONS, LIQUID, N. O.S.	Hydrocarbons, liquid, n.o.s.
Transport hazard class(es)	3 	3  	3 
Packing group	I	I	I
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.

**Additional information**

- DOT Classification** : **Reportable quantity** 200 lbs / 90.8 kg [31.355 gal / 118.69 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: 201. Bulk: 243.  
**Quantity limitation** Passenger aircraft/rail: 1 L. Cargo aircraft: 30 L.  
**Special provisions** 144, T11, TP1, TP8, TP28
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Emergency schedules** F-E, S-D
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.  
**Quantity limitation** Passenger and Cargo Aircraft: 1 L. Packaging instructions: 351. Cargo Aircraft Only: 30 L. Packaging instructions: 361. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.  
**Special provisions** A3, A324
- 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.

## Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 8(a) PAIR:** pentane; naphthalene  
**United States inventory (TSCA 8b):** Not determined.  
**Clean Water Act (CWA) 307:** toluene; benzene; ethylbenzene; naphthalene  
**Clean Water Act (CWA) 311:** toluene; benzene; ethylbenzene; naphthalene; hydrogen sulphide  
**Clean Air Act (CAA) 112 regulated flammable substances:** pentane

**RCRA (Resource Conservation and Recovery Act) Hazardous waste constituents appendix VIII to 40 CFR part 261**

Name	%	Status
toluene	0 - 22	Listed
benzene	0 - 10	Listed

**Department of homeland security (DHS), Chemical Facility Anti-terrorism Standards (6 CFR 27), Appendix A, Chemicals of Interest**

	Name	%	Status
<b>Release</b>	pentane	0 - 30	Listed
<b>Security</b>	pentane	0 - 30	Listed
	hydrogen sulphide	<0.0001	Listed

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed

**DEA List II Chemicals (Essential Chemicals)** : Listed

**SARA 302/304**

**Composition/information on ingredients**

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
hydrogen sulphide	<0.0001	Yes.	500	-	100	-

**SARA 304 RQ** : 111111111.1 lbs / 50444444.4 kg [17419624.1 gal / 65940450.3 L]

**SARA 311/312**

**Classification** : **F** LAMMABLE LIQUIDS - Category 1  
 SKIN IRRITATION - Category 2  
 GERM CELL MUTAGENICITY - Category 1  
 CARCINOGENICITY - Category 1B  
 TOXIC TO REPRODUCTION - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
 ASPIRATION HAZARD - Category 1  
 HNOC - Defatting irritant

**Composition/information on ingredients**

Name	%	Classification
Gasoline	0 - 80	FLAMMABLE LIQUIDS - Category 1 SKIN IRRITATION - Category 2 GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid HNOC - Defatting irritant
pentane	0 - 30	FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid HNOC - Defatting irritant
n-hexane	0 - 25	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B TOXIC TO REPRODUCTION - 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) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid
toluene	0 - 22	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - 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) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid
benzene	0 - 10	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)



ethylbenzene	0 - 7	(Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - 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) - Category 2 ASPIRATION HAZARD - Category 1
1,2,4-trimethylbenzene	0 - 5	HNOC - Static-accumulating flammable liquid HNOC - Defatting irritant FLAMMABLE LIQUIDS - Category 3 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 ASPIRATION HAZARD - Category 1
naphthalene	0 - 1	HNOC - Static-accumulating flammable liquid FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
hydrogen sulphide	<0.0001	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas ACUTE TOXICITY (inhalation) - 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 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

**SARA 313**

	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	<input checked="" type="checkbox"/> hexane	110-54-3	0 - 25
	toluene	108-88-3	0 - 22
	benzene	71-43-2	0 - 10
	ethylbenzene	100-41-4	0 - 7
	1,2,4-trimethylbenzene	95-63-6	0 - 5
	naphthalene	91-20-3	0 - 1


<b>Supplier notification</b>	<input checked="" type="checkbox"/> n-hexane	110-54-3	0 - 25
	toluene	108-88-3	0 - 22
	benzene	71-43-2	0 - 10
	ethylbenzene	100-41-4	0 - 7
	1,2,4-trimethylbenzene	95-63-6	0 - 5
	naphthalene	91-20-3	0 - 1

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: PENTANE; HEXANE; N-HEXANE; TOLUENE; TOLUOL; METHYLBENZENE; BENZENE; BENZOL DILUENT; ETHYL BENZENE; PSEUDOCUMENE
- New York** :  The following components are listed: Hexane; Toluene; Benzene; Ethylbenzene
- New Jersey** :  The following components are listed: PENTANE; n-HEXANE; HEXANE; TOLUENE; TOLUOL; BENZENE, METHYL-; PHENYL METHANE; METHYL BENZENE; BENZENE; ETHYL BENZENE; BENZENE, ETHYL-; PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; BENZENE, 1,2,4-TRIMETHYL-; NAPHTHALENE; TAR CAMPHOR; MOTH FLAKES
- Pennsylvania** :  The following components are listed: GASOLINE; PENTANE; HEXANE; BENZENE, METHYL-; BENZENE; BENZOL DILUENT; BENZENE, ETHYL-; PSEUDOCUMENE

### California Prop. 65

-  **WARNING:** This product can expose you to chemicals including 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 and Naphthalene, which are known to the State of California to cause cancer, and n-hexane and 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
<input checked="" type="checkbox"/> n-hexane	-	Yes.
Toluene	-	Yes.
Benzene	Yes.	Yes.
Ethylbenzene	Yes.	-
Naphthalene	Yes.	-

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
PAHs	POPs - Annex 3	Listed

### Inventory list

- Australia** :  All components are listed or exempted.
- Canada** :  All components are listed or exempted.
- China** :  Not determined.
- Europe** :  All components are listed or exempted.

<b>Japan</b>	: <b>Japan inventory (CSCL):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>Malaysia</b>	: Not determined
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Turkey</b>	: Not determined.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	3
Flammability	3
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

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



### Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 1	On basis of test data
SKIN IRRITATION - Category 2	Calculation method
GERM CELL MUTAGENICITY - Category 1	Calculation method
CARCINOGENICITY - Category 1B	Expert judgment
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Expert judgment
ASPIRATION HAZARD - Category 1	On basis of test data

**Date of issue/Date of revision** : 08/24/2021

**Date of previous issue** : 05/09/2018

**Version** : 4

**Key to abbreviations** :

- ATE = Acute Toxicity Estimate
- AMP = Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
- 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)
- N/A = Not available

UN = United Nations

✔ Indicates information that has changed from previously issued version.

**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named manufacturer, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.