



**Material Safety Data Sheet
GIANT KEROSENE**

**Rev: 01
Date: 01/07/2015**

1. Chemical and Company Identification

TRADE NAMES: GIANT KEROSENE
PRODUCT CODES: Not applicable
DESCRIPTION: Kerosene
SUPPLIER: Central Auto Parts and Equipment Limited
84 Armstrong Street, Palmerston North
New Zealand
EMERGENCY TEL: (64) 6-3535200
FAX NUMBER: (64) 6-3535201

2. Hazards Identification

GHS CLASSIFICATION

Health	Environmental	Physical
Aspiration Toxicity: Category 1 Skin Irritation: Category 2 Specific Target Organ Toxicity – single exposure (inhalation): Category 3 (Narcotic effects)	Acute Aquatic Toxicity: Category 2 Chronic Aquatic Toxicity: Category 2	Flammable Liquid: Category 3

GHS LABEL:



SIGNAL WORD: Danger

Hazard Statements

H226 Flammable liquid and vapour
H304 May be harmful if swallowed and enters airways
H315 Causes skin irritation

H336 May cause drowsiness or dizziness
H401 Toxic to aquatic life
H411 Toxic to aquatic life with long lasting effects

Prevention Precautionary Statements

P202 Do not handle until all safety precautions have been read and understood
P210 Keep away from heat/sparks/open flames/hot surfaces - No smoking
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response Precautionary Statements

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P331 - Do NOT induce vomiting.

Storage

No precautionary phrase

Disposal

P501 Dispose of content/containers according to the local/regional/national/international regulation.

Other hazards which do not result in classification

Hydrogen sulphide (H₂S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers. Slightly irritating to respiratory system. May ignite on surfaces at temperatures above auto-ignition temperature. Vapour in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature, where vapour concentrations are within the flammability range. This material is a static accumulator. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. This product is intended for use in closed systems only.

3. Compositions / Information on Ingredients

Chemical Identity	CAS #	Classification	Concentration %
Kerosine (Petroleum)	8008-20-6	Flam. Liq. 3; H226 Asp. Tox. 1; H304 Skin Irrt. 2; H315 Aquatic Acute 2; H401 Aquatic Chronic 2; H411 STOT RE3	<= 100

Further Information

Contains:

Chemical Name	Identification Number	Concentration %
Xylene, mixed isomers	1330-20-7, 215-535-7	>= 0 - <= 2
Ethylbenzene	100-41-4, 202-849-4	>= 0 - <= 2
Naphthalene	91-20-3, 202-049-5	>= 0 - <= 1
Cumene	98-82-8, 202-704-5	>= 0 - <= 1
Trimethylbenzene, all isomers	25551-13-7, 247-099-9	>= 0 - <= 1

4. First Aid Measures

General Advice

Vaporization of H₂S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from the victim to rescuer. Mechanical ventilation should be used to resuscitate if at all possible.

Eye Contact

Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist, transport to the nearest medical facility for additional treatment.

Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

Skin Contact

Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

Inhalation

Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

Ingestion

If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing. Give nothing by mouth.

Most important symptoms and effects, both acute and delayed

If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.

Protection of first-aiders

When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Notes to physician

Treat symptomatically.

Hydrogen sulphide (H₂S) - CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER: Oxygen therapy. Consult a Poison Control Center for guidance.

5. Fire Fighting Measures

Suitable Extinguishing Media

Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable Extinguishing Media

Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific Hazards Arising from the Chemical

Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and gases (smoke).

Oxides of sulphur.

Unidentified organic and inorganic compounds.

Carbon monoxide may be evolved if incomplete combustion occurs.

Will float and can be reignited on surface water.

Flammable vapours may be present even at temperatures below the flash point.

The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Specific extinguishing methods

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately.

Protection for Fire-fighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. Accidental Release Measures

Personal Precautions and Protective Equipment

Do not breathe fumes, vapour.

Do not operate electrical equipment.

Environmental Precautions

Prevent discharges into the environment (sewers, rivers, soils). Immediately notify the appropriate authorities in case of discharge.

Method for Cleaning Up & Containment

If possible, dam large quantities of liquid with sand or earth. Collect the product with suitable means. Place everything into a closed, labeled container compatible with the product. Flush with plenty of water. Prevent product from entering drains. Treat recovered material as described in the section "Disposal Considerations".

Emergency Procedures

Shut off leaks, if possible without personal risks. Remove all possible ignitions in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth or other appropriate barriers. Take precautionary measures against static

discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

7. Handling and Storage

General Precautions

Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Air-dry contaminated clothing in a well-ventilated area before laundering. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. Prevent spillages. Never siphon by mouth. For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier. Ensure that all local regulations regarding handling and storage facilities are followed. Maintenance and Fuelling Activities - Avoid inhalation of vapours and contact with skin.

Advice on Safe Handling

Ensure that all local regulations regarding handling and storage facilities are followed. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid inhaling vapour and/or mists. Avoid prolonged or repeated contact with skin. When using do not eat or drink. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Earth all equipment. Even with proper bonding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation.

Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. "Product Name" designates a trade-mark of Shell Brands International AG. Used under license.

The inherent toxic and olfactory (sense of smell) fatiguing properties of hydrogen sulphide require that air monitoring alarms be used if concentrations are expected to reach harmful levels such as in enclosed spaces, heated transport vessels and spill or leak situations. If the air concentration exceeds 10 ppm, the area should be evacuated unless respiratory protection is in use.

Avoidance of contact: Strong oxidising agents.

Product Transfer: Avoid splash filling Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Keep containers closed when not in use. Refer to guidance under Handling section.

Storage

Other Data

Drum and small container storage: Drums should be stacked to a maximum of 3 high. Use properly labeled and closable containers. Take suitable precautions when opening sealed containers, as pressure can build up during storage.

Tank storage: Tanks must be specifically designed for use with this product.

Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. The vapour is heavier than air. Beware of accumulation in pits and confined spaces. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.

Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging Material

Suitable material: For containers, or container linings use carbon steel and low alloy steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard.

For container linings the following may also be used: Unplasticized polyvinyl chloride (U-PVC), Fluoropolymers (PTFE), Polyvinylidene fluoride (PVDF), Polyetheretherketone (PEEK), Polyamide (PA-11). For seals and gaskets use: Fluoroelastomer (FKM), Viton A, and Viton B, Nitrile butadiene (NBR), Buna-N. For coating (paint) materials use: High build, amine adduct-cured epoxy.

Unsuitable material: For containers or container linings, examples of materials to avoid are: Polyethylene (PE, HDPE), Polypropylene (PP), Polymethyl methacrylate (PMMA), Acrylonitrile butadiene styrene (ABS). For seals and gaskets, examples of materials to avoid are: Natural rubber (NR), Ethylene Propylene (EPDM), Polychloroprene (CR) - Neoprene, Butyl (IIR), Chlorosulphonated polyethylene (CSM), e.g. Hypalon.

Container Advice

Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

Specific Use

Not applicable.

See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).

CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity).

8. Exposure Controls / Personal Protection

Components	CAS-No.	Value Type (Form of Exposure)	Control Parameters/ Permissible Concentrations	Basis
Xylene, mixed isomers	1330-20-7	PEL (long term)	100 ppm 434 mg/m ³	SG OEL
		PEL (short term)	150 ppm 651 mg/m ³	SG OEL
		TWA	100 ppm 435 mg/m ³	OSHA Z-1
Ethylbenzene	100-41-4	PEL (long term)	100 ppm 434 mg/m ³	SG OEL
		PEL (short term)	125 ppm 543 mg/m ³	SG OEL
		TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m ³	OSHA Z-1
Naphthalene	91-20-3	PEL (long term)	10 ppm 52 mg/m ³	SG OEL
		PEL (short term)	15 ppm 79 mg/m ³	SG OEL

		TWA	10 ppm 50 mg/m ³	OSHA Z-1
Cumene	98-82-8	TWA	10 ppm	ACGIH
		PEL (long term)	50 ppm 246 mg/m ³	SG OEL
		TWA	50 ppm 245 mg/m ³	OSHA Z-1
		TWA	50 ppm	ACGIH
Trimethylbenzene, all isomers	25551-13-7	PEL (long term)	25 ppm 123 mg/m ³	SG OEL
		TWA	25 ppm	ACGIH
Kerosine (petroleum)	8008-20-6	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	200 mg/m ³	ACGIH

Biological occupational exposure limits

Component	CAS-No.	Control Parameters	Biological Specimen	Sampling Time	Permissible Concentration	Basis
Xylene, mixed isomers	1330-20-7	Methylhippuric acid	Urine		1.5g/g creatine	SG BTLV

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Firewater monitors and deluge systems are recommended. Adequate explosion-proof ventilation to control airborne, concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended. Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Do not ingest. If swallowed then seek immediate medical assistance.

Personal Protective Equipment (PPE):

Eye Protection

If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Skin/Body Protection

Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.

Respiratory Protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand Protection Remarks

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. When prolonged or frequent repeated contact occurs. Nitrile rubber gloves. For incidental contact/splash protection Neoprene, PVC gloves may be suitable. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Thermal Hazards

NA

Environmental Exposure Controls

General Advice: Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6.

9. Physical and Chemical Properties

Appearance	: Liquid
Colour	: Undyed
Odour	: Not applicable
Odour Threshold	: Not determined
PH	: Not applicable
Melting Point/ Freezing Point (°C)	: Not determined
Initial boiling point and range (°C)	: 150°C - 290°C (Method unspecified)
Flash Point (°C)	: 23°C - 62°C (Method unspecified)
Evaporation Rate	: Not determined
Flammability (Solid, Gas)	: Not applicable

Vapour Pressure	: 1 – 3.7 kPa (38°C) (Method unspecified) : 1.6 – 7 kPa (50°C) (Method unspecified)
Upper/Lower Flammability (Explosive) Limits	: 6% / 1% (V)
Density	: 796 kg/m ³ (15°C) (Method unspecified)
Solubility in water	: Not determined
Partition coefficient (n-octanol/water)	: log Pow: 2 - 6
Auto-ignition Temperature (°C)	: > 220°C
Decomposition Temperature	: Not determined
Kinematic Viscosity (mm²/s)	: 1 – 2.5 (40°C) (Method unspecified)
Explosive Properties	: Classification Code: Not classified
Oxidizing Properties	: Not applicable
Conductivity	: Low conductivity < 100 pS/m. The conductivity of this material makes it a static accumulator. A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m. Whether a liquid is non-conductive or semi-conductive, the precautions are the same. A number of factors, eg. liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.

10. Stability and Reactivity

Reactivity/Incompatible Material

Oxidizes on contact with air/Strong oxidizing agents.

Chemical Stability

Stable at normal conditions of use and storage.

Possibility of Hazardous Reactions

No hazardous reaction is expected when handled and stored according to provisions.

Hazardous Decomposition Products

Hazardous decomposition products are not expected to form during normal storage.

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

Conditions to Avoid

Avoid heat, sparks, open flames and other ignition sources.

In certain circumstances product can ignite due to static electricity.

11. Toxicological Information

Basis for Assessment:

Information given is based on product data, a knowledge of the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure: Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute Toxicity (ATE):

Acute oral toxicity (LD50) Oral Rat: >5,000 mg/kg (Remarks: Low toxicity)

[Remarks: Aspiration into the lungs may cause chemical pneumonitis which can be fatal.]

Acute dermal toxicity (LD50) Rabbit: >2,000 mg/kg (Remarks: Low toxicity)

Acute inhalation toxicity (LC50) Rat: >5 mg/l, Exposure time: 4 hrs (Remarks: Low toxicity)

[Remarks: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.]

Acute toxicity (other routes of administration): Remarks: Inhalation of vapours or mists may cause irritation to the respiratory system.

Skin Corrosion/Irritation:

Remarks: Irritating to skin.

Serious Eye Damage/Eye Irritation:

Remarks: Expected to be slightly irritating

Remarks: Irritating to eyes. (Hydrogen Sulfide)

Respiratory or Skin Sensitisation:

Remarks: Not expected to be a sensitiser.

Germ Cell Mutagenicity:

Remarks: Not considered a mutagenic hazard.

Carcinogenicity:

Not carcinogenic under IARC

Remarks: Repeated skin contact has resulted in irritation and skin cancer in animals.

Carcinogenicity - Assessment: This product does not meet the criteria for classification in categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Xylene, mixed isomers	No carcinogenicity classification.
Ethylbenzene	No carcinogenicity classification.
Naphthalene	Carcinogenicity Category 2.
cumene	No carcinogenicity classification.
Trimethylbenzene, all isomers	No carcinogenicity classification.
Kerosine (petroleum)	No carcinogenicity classification

Material	Other Carcinogenicity Classification
Ethylbenzene	IARC: Group 2B: Possibly carcinogenic to humans
Naphthalene	IARC: Group 2B: Possibly carcinogenic to humans

Reproductive Toxicity:

Remarks: Not expected to impair fertility. Not expected to be a developmental toxicant.

Reproductive toxicity - Assessment: This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Remarks: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

STOT - repeated exposure

Remarks: Kidney: caused kidney effects in male rats which are not considered relevant to humans

Aspiration toxicity

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Further information

Remarks: H₂S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary oedema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1,000ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning. H₂S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H₂S will accumulate in the body tissue after repeated exposure.

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

12. Ecological Information

Basis for Assessment: Fuels are typically made from blending several refinery streams. Ecotoxicological studies have been carried out on a variety of hydrocarbon blends and streams but not those containing additives.

Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Ecotoxicity

Toxicity to Fish (acute toxicity): Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to Crustacean (acute toxicity): Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to Algae/Aquatic Plants (acute toxicity): Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to Fish (chronic toxicity): Remarks: NOEC/NOEL expected to be > 0.01 - <= 0.1 mg/l (based on modeled data)

Toxicity to crustacean (Chronic toxicity): Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l

Toxicity to microorganisms (Acute toxicity): Remarks: Practically non-toxic: LL/EL/IL50 > 100 mg/l

Persistence and Degradability

Biodegradability: Remarks: Major constituents are expected to be inherently biodegradable. The volatile constituents will oxidize rapidly by photochemical reactions in air.

Bioaccumulative Potential

Bioaccumulation : Remarks: Contains constituents with the potential to bioaccumulate.

Log Kow > = 4

Partition coefficient: n-octanol/water: log Pow: 2 – 6

Mobility in Soil

Remarks: Large volumes may penetrate soil and could contaminate groundwater. Evaporates within a day from water or soil surfaces. Contains volatile components. Floats on water.

Other Adverse Effects

Results of PBT and vPvB assessment: The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

Additional ecological information: Films formed on water may affect oxygen transfer and damage organisms.

13. Disposal Considerations

Disposal Methods

Waste from residues: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Contaminated Packaging

Send to drum recoverer or metal reclaimer. Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard if heated above the flash point. Do not puncture, cut or weld uncleaned drums. Do not pollute the soil, water or environment with the waste container. Comply with any local recovery or waste disposal regulations.

Local Legislation Remarks

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. Transport Information

Land (ADR)

UN Number : 1223
UN Class : 3
Labels : 3
Packing Group : III
Proper Shipping Name : Kerosene
Hazard ID Number : 30
Environmentally Hazardous : Yes

Sea (IMDG)

UN Number : UN 1223
UN Class : 3
Labels : 3
Packing Group : III
Proper Shipping Name : Kerosene
Marine Pollutant : Yes

IATA-DGR

UN/ID No. : UN 1223
UN Class : 3
Labels : 3

Packing Group : III
Proper Shipping Name : Kerosene

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special Precautions

Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information: MARPOL Annex 1 rules apply for bulk shipments by sea.

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture Local Regulations

Workplace Safety and Health Act & Workplace Safety and Health (General Provision) Regulations	This product is subject to the SDS, Labelling, PEL and other requirements in the Act/Regulations.
Fire Safety Act and Fire Safety (Petroleum & Flammable Materials) Regulations	This product is subject to the requirements in the Act/ Regulations.
Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations	This product is subject to the requirements of this regulation.
Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	This product is subject to the requirements in the Act/Regulations.

16. Other Information

Full text of H-Statements

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute Acute aquatic toxicity
Aquatic Chronic Chronic aquatic toxicity
Asp. Tox. Aspiration hazard
Flam. Liq. Flammable liquids
Skin Irrit. Skin irritation
STOT RE Specific target organ toxicity - repeated exposure

Abbreviations and Acronyms: The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

Further information

Other information: This product is intended for use in closed systems only.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.