# SAFETY DATA SHEET
# KEROSENE (petroleum)

*According to COMMISSION REGULATION (EU) 2020/878 and UK REACH*

**Issued: 24/03/2026**
**Ref: WFS/ Watson Fuels/ Kerosene (petroleum) 03**
**Version: 03**

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 PRODUCT IDENTIFIER

| | |
|---|---|
| **Product name** | Kerosene (petroleum) |
| **Other names** | Kerosine (petroleum); straight run kerosine. |

### 1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

| | |
|---|---|
| **Relevant identified uses** | Fuel for use in domestic and commercial heating. |
| **Uses advised against** | This product is not to be used as a solvent or cleaning agent, for lighting or brightening fires, or as a skin cleanser.<br>Not to be used as a fuel for automotive vehicles.<br>Not to be used to prevent waxing in diesel fuel. |

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

| | |
|---|---|
| Manufacturer/Supplier | Watson fuels |
| Address | Callow Park, Callow Hill<br>Brinkworth<br>Chippenham<br>Wiltshire<br>SN15 5FD<br>United Kingdom |
| Telephone number | +44 1666 510 345 |
| E-mail address of competent person responsible for the SDS | hse@watsonfuels.co.uk |

### 1.4 EMERGENCY TELEPHONE NUMBER

**+44 (0) 333 333 9957 (24/7, English)**

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification according to Regulation (EC) No 1272/2008 (CLP) and GB CLP

Flam. Liq. 3 - H226

Asp. Tox. 1 - H304

Skin Irrit. 2 - H315

STOT SE 3 - H336

Aquatic Chronic 2 - H411

### 2.2 LABEL ELEMENTS

Labelling according to Regulation (EC) No 1272/2008 [CLP] and GB CLP

**Hazard pictograms**

**Signal word** Danger

**Hazard 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
H411 - Toxic to aquatic life with long lasting effects

**Precautionary statements**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof equipment.
P242 - Use only non-sparking tools.
P243 - Take action to prevent static discharges.
P261 - Avoid breathing fume and vapours.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P370 + P378 - In case of fire: Use foam, water spray, dry chemical, carbon dioxide or other inert gases (as permitted by regulations) to extinguish.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331 - Do NOT induce vomiting.
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P403 + P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents and container in accordance with Hazardous Waste (England and Wales) Regulations 2005 and EU Waste Framework Directive 2008/98/EC.

**Supplemental information on the label**
**Supplementary Hazard Information (EU)** No supplementary hazard information
**Hazardous components which must be on the label** Not applicable.

### 2.3 OTHER HAZARDS

The product does not meet the PBT or vPvB classification criteria of Annex XIII of the REACH Regulation.

Flammable liquid that is able to become statically charged, can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid, and vapour may cause flash fire or explosion. Spillages make surfaces slippery.

May ignite on surfaces at temperatures above auto- ignition temperature.

Vapours are heavier than air and can accumulate in confined spaces.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 SUBSTANCES

| Chemical name | % w/w | CAS number/ EC number/ Index number | REACH registration number | Classification according to Regulation (EC) No 1272/2008 [CLP] | Additional information* |
|---|---|---|---|---|---|
| Kerosine (petroleum) | 100 | 8008-20-6/ 232-366-4/ 649-404-00-4 | 01-2119485517-27-xxxx | Flam. Liq. 3; H226<br>Asp. Tox. 1; H304<br>Skin Irrit. 2; H315<br>STOT SE 3; H336<br>Aquatic Chronic 2; H411 | WEL |

For full text of H-statements, see SECTION 16.

* Includes information relating to specific concentration limits, M-factors, ATEs, particle characteristics, supplementary hazard information, and indicates workplace exposure limits (WEL) shown in Section 8.

## SECTION 4: FIRST AID MEASURES

### 4.1 DESCRIPTION OF FIRST AID MEASURES

General notes — No action shall be taken involving any personal risk or where suitable training has not been provided. Show this safety data sheet to the doctor in attendance.

Following inhalation — May cause drowsiness or dizziness. Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.

Following skin (or hair) contact — Causes skin irritation. Take off contaminated clothing and wash it before reuse. Rinse skin with water [or shower]. If skin irritation occurs: Get medical advice/attention. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing.

Following eye contact — In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. If symptoms occur, get medical attention.

Following ingestion — May be fatal if swallowed and enters airways. Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. If vomiting occurs naturally, the patient should lean forward to reduce the risk of aspiration.

| | |
|---|---|
| Self-protection of the first aider | 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. Wash contaminated clothing thoroughly with water before removing it or wear gloves. |

### 4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

**Inhalation:** May cause drowsiness or dizziness. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in drowsiness, dizziness, light headedness, headache, disorientation, fatigue, nausea and loss of coordination. The onset of respiratory symptoms may be delayed for several hours after exposure.

**Ingestion:** May be fatal if swallowed and enters airways. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.

**Skin contact:** Causes skin irritation. Prolonged or repeated contact can defeat the skin and lead to irritation and/or dermatitis.

**Eye contact:** Vapour, mist or fume may cause eye irritation. Eye contact may cause redness and transient pain.

### 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

In case of accident or if you feel unwell, seek medical advice immediately. If swallowed, patient should be monitored for signs of breathing difficulty as effects of aspiration may be delayed for up to 48 hours. If breathing is laboured, oxygen should be administered by qualified personnel.

High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 EXTINGUISHING MEDIA

**Suitable extinguishing media**

Small fires: Earth or sand, carbon dioxide, foam, and dry chemical powder.

Large fires: Foam, water spray, dry chemical, carbon dioxide or other inert gases (as permitted by regulations). Note: the use of water spray is restricted to specially trained personnel.

**Unsuitable extinguishing media**

Do not use direct water jets on the burning product, they can cause splashes and spread the fire. Avoid the simultaneous use of foam and water on the same surface as water destroys foam.

### 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Liquid will float and may reignite on surface of water.

**Hazardous combustion products**

May include a complex mixture of airborne solid and liquid particulates. Also produce gases such as smoke, carbon monoxide and unidentified organic and inorganic compound. If sulphur compounds are present in appreciable amounts, combustion products may include also $H_2S$ and SOx (sulfur oxides) or sulfuric acid.

### 5.3 ADVICE FOR FIREFIGHTERS

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Firefighting measures**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Additional advice**
Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If the fire cannot be extinguished, the only course of action is to evacuate immediately.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

**For non-emergency personnel**
Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Take precautionary measures against static discharge. Use only non-sparkling tools. Use explosion-proof electrical, ventilating and lighting equipment. Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training.

Evacuate surrounding areas. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. Avoid breathing fume and vapours. Provide adequate ventilation. Keep upwind. Avoid contact with skin and eyes. Wear personal protective equipment, including safety glasses with side shields or goggles, neoprene, nitrile or rubber protective gloves and flame-retardant anti-static coverall. In confined spaces use an approved air-supplied respirator, or self-contained breathing apparatus. See section 8 for more information.

**For emergency responders**
If safety conditions permit, stop, or contain the leak at the source. Remain upwind. In case of large spills, warn residents of areas downwind. Remove uninvolved personnel from the spill area.

Notify emergency teams. Except in the case of small spills, the feasibility of intervention should always be assessed and approved, if possible, by qualified and competent emergency management personnel.

Eliminate all sources of ignition if safety conditions permit (e.g., electricity, sparks, fires, torches). If required, report the event to the appropriate authorities in accordance with applicable legislation. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work.

Small spillages: normal antistatic working clothes are usually adequate.

Large spillages: full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Note: gloves made of PVA are not water-resistant and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots, goggles and/or face shield should be worn if splashes or contact with eyes is possible or anticipated.

In confined spaces, use an approved air-supplied respirator. A half or full-face respirator with filter(s) for organic vapours or, preferably, a Self-Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA should be used.

### 6.2 ENVIRONMENTAL PRECAUTIONS

This product is toxic to aquatic life with long lasting effects. Avoid dispersal of spilt 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).

In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means.

The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

### 6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

**Small Spill:** Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

**Large Spill:** Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. 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. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Waste containers used should be plastic-lined sealable drums. Containers should be sealed before being disposed of via an authorised waste disposal contractor.

### 6.4 REFERENCE TO OTHER SECTIONS

For personal protective equipment, see Section 8. For disposal, see Section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 PRECAUTIONS FOR SAFE HANDLING

Avoid breathing fume or vapours. Use only outdoors or in a well-ventilated area. Open container slowly.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof equipment. Take action to prevent static discharges.

Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Keep in the original container or an approved alternative made from a compatible material.

Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Ensure that adequate housekeeping measures are taken. Contaminated material must not accumulate in the workplace and must never be stored in pockets. Keep away from food and drink. Do not eat, drink, or smoke when using the product. Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse.

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep away from heat and direct sunlight. Eliminate all ignition sources.

Separate from oxidising materials. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Drums and small containers should be stored in well-ventilated areas, flameproof cabinets or stores. Keep in a bunded area with a sealed floor to provide containment against spillage. Seek specialist advice for the design, construction and operation of bulk storage facilities.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work.

When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks).

### 7.3 SPECIFIC END USE(S)

Used as fuel. This product is not to be used as a solvent or cleaning agent, for lighting or brightening fires, or as a skin cleanser.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS

**Workplace Exposure Limits**

| Substance | Source | Limit value - 8 hours | | Limit value - short term* | | Comments |
|---|---|---|---|---|---|---|
| | | ppm | mg/m³ | ppm | mg/m³ | |
| Kerosine (petroleum) | GESTIS ILV | - | 100 | - | - | Ireland |
| | Suppliers' recommendation | 28 | 200 | - | - | - |

Comments

* Short term is 15 minutes unless otherwise specified.

**Derived No-Effect Level (DNELs) Workers**

| Substance | Route | Acute/short-term exposure | | Long-term exposure | |
|---|---|---|---|---|---|
| | | Systemic effects | Local effects | Systemic effects | Local effects |
| Kerosine (petroleum) | Inhalation | No hazard identified | 250 mg/m³ | 50 mg/m³ | No hazard identified |
| | Dermal | No hazard identified | Low hazard (no threshold derived) | 7.7 mg/kg bw/day | Low hazard (no threshold derived) |
| | Eyes | - | No hazard identified | - | No hazard identified |

**Derived No-Effect Level (DNELs) General population**

| Substance | Route | Acute/short-term exposure | | Long-term exposure | |
|---|---|---|---|---|---|
| | | Systemic effects | Local effects | Systemic effects | Local effects |
| Kerosine (petroleum) | Inhalation | No hazard identified | Low hazard (no threshold derived) | 10.66 mg/m³ | No hazard identified |
| | Dermal | No hazard identified | Low hazard (no threshold derived) | 1.64 mg/kg bw/day | Low hazard (no threshold derived) |
| | Oral | No hazard identified | - | 5 mg/kg bw/day | - |
| | Eye | - | No hazard identified | - | No hazard identified |

**Predicted No Effect Concentration PNEC(S)**

| Environmental protection target | Kerosine (petroleum) |
|---|---|
| **Freshwater** | No data available: testing technically not feasible |
| **Intermittent releases (freshwater)** | - |
| **Marine water** | No data available: testing technically not feasible |
| **Intermittent release (marine water)** | - |
| **Sewage treatment plant (STP)** | No data available: testing technically not feasible |
| **Sediment (freshwater)** | No data available: testing technically not feasible |
| **Sediment (marine water)** | No data available: testing technically not feasible |
| **Air** | No hazard identified |
| **Soil** | No data available: testing technically not feasible |
| **Predators – secondary poisoning** | No potential to cause toxic effects if accumulated (in higher organisms) via the food chain |

### 8.2 EXPOSURE CONTROLS

**Appropriate engineering controls**

Minimise exposure to mists/vapours/aerosols. Before entering storage, tanks and starting any work in a confined space, check the atmosphere and verify oxygen content and flammability.
Eye wash and quick-drench shower facilities should be available in the work area.
It is recommended to consider routes of exposure and potential of the chemical to cause harm when performing a workplace COSHH assessment.

**Individual protection measures, such as personal protective equipment**

| | | |
|---|---|---|
| Eye/face protection |  | In the absence of containment systems and if there is a risk of eye/face contact, wear head and face protection (visor and/or goggles (EN 16321)). |
| Skin protection<br>Hand protection |  | Use gloves with high hydrocarbon-resistant cuffs, fleece-lined, thermally insulated if necessary. PVC (polyvinyl chloride) gloves with a chemical protection rating of at least 5 (permeation time > 240 minutes) can be used for short periods. Neoprene or natural rubber (latex) do not have adequate resistance characteristics.<br>Use gloves in compliance with the conditions and limits set by the manufacturer. If necessary, refer to standard UNI EN 374. |
| Other skin protection | | When handling the product, use work clothes with long sleeves. If necessary, refer to EN 465-466-467. In the event of clothing contamination, replace and clean them immediately. |
| Respiratory protection |  | Use only outdoors or in a well-ventilated area. Where airborne levels below the exposure limits cannot be maintained, wear an air-purifying respirator (EN 140) with a Type A/P2 filter or better suitable for organic gases and vapours with a boiling point above 65°C. (EN 14387). |
| Thermal hazards | | For operations which result in elevating the temperature of the product to or above its melting point, use protective clothing and gloves to prevent skin contact. |

**Environmental exposure control**

This substance is toxic to aquatic life with long lasting effects. Do not release into the environment. Storage facilities must be equipped with appropriate systems to prevent soil and water contamination in the event of leaks or spills. Inform environmental manager of all incidents involving this product. 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 Occupational Exposure Limit and adequacy of exposure controls. For some substances, biological monitoring may also be appropriate. Information on suitable methods is available on request.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| (a) Physical state | Liquid |
| (b) Colour | Light yellow |
| (c) Odour | Hydrocarbon |
| Odour threshold | No data available |
| (d) Melting point/freezing point | No data available |

| | |
|---|---|
| (e) Boiling point or initial boiling point and boiling range | 90 – 320 °C at 101,325 Pa |
| (f) Flammability | Flammable liquid and vapour |
| (g) Lower and upper explosion limit | Lower explosion limit: 0.5 %<br>Upper explosion limit: 6 % |
| (h) Flash point | > 38°C (open cup) |
| (i) Auto-ignition temperature | 220 – 250 °C at 101,325 Pa (for kerosines) |
| (j) Decomposition temperature | Not available |
| (k) pH | Not applicable. Based on solubility in water (immiscible in water). |
| (l) Kinematic viscosity | 2.8 – 4.3 cSt at -20°C<br>1 – 2.4 cSt at 40°C |
| (m) Solubility | Immiscible in water.<br>Miscible in aromatic solvents. |
| (n) Partition coefficient n-octanol/water (log value) | Log Pow: 1.99 – 18.02 |
| (o) Vapour pressure | <1 – 3.7 kPa at 37.8 °C (CONCAWE 2010a) |
| (p) Density and/or relative density | 0.77 – 0.85 g/cm$^3$ at 15°C (water=1) (CONCAWE, 2010a) |
| (q) Relative vapour density | > 1 (air = 1) |
| (r) Particle characteristics | Not applicable |
| (s) Evaporation rate | Not available |
| (t) Explosive Properties | Not explosive. Vapour may form explosive mixture in air. |
| (u) Oxidising Properties | Not oxidizing |

### 9.2 OTHER INFORMATION

| | |
|---|---|
| Pour point | < -49 °C (CONCAWE 1994). |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 REACTIVITY
Stable under normal conditions. Reacts with oxidising agents.

### 10.2 CHEMICAL STABILITY
Stable under normal use conditions.

### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS
No hazardous reactions expected during normal use.

### 10.4 CONDITIONS TO AVOID
Keep away from oxidising agents. Keep away from heat/sparks/open flames/hot surfaces. Do not smoke. Avoid electrostatic charge formation. Prevent accumulation of vapours.

### 10.5 INCOMPATIBLE MATERIALS
Oxidizing agents e.g. chlorates and ammonium nitrate which can be used in agriculture. Strong reducing agents.

### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS
Combustion or thermal decomposition may liberate toxic fumes including carbon monoxide, carbon dioxide, various hydrocarbons, sulphur oxides and nitrogen oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON HAZARD CLASSES AS DEFINED IN REGULATION (EC) NO 1272/2008

| | | |
|---|---|---|
| **a)** | **Acute toxicity** | |
| | **Acute toxicity - oral** | Not classified. Based on the available data, the classification criteria are not met.<br>$LD_{50}$ > 5000 mg/kg, rats, |
| | **Acute toxicity - dermal** | Not classified. Based on the available data, the classification criteria are not met.<br>$LD_{50}$ >2000 mg/kg, rabbit. |
| | **Acute toxicity - inhalation** | Acute toxicity, category 4. Harmful if inhaled.<br>$LC_{50}$ > 5.2 mg/L, 4 h, rats. |
| **b)** | **Skin corrosion/irritation** | Skin corrosion/irritation, category 2. Causes skin irritation. |
| **c)** | **Serious eye damage/irritation** | Not classified. Based on the available data, the classification criteria are not met. |
| **d)** | **Respiratory or skin sensitisation** | |
| | **Respiratory sensitisation** | Not classified. Based on the available data, the classification criteria are not met. |
| | **Skin sensitisation** | Not classified. Based on the available data, the classification criteria are not met. |
| **e)** | **Germ cell mutagenicity** | Not classified. Based on the available data, the classification criteria are not met. |
| **f)** | **Carcinogenicity** | Not classified. Based on the available data, the classification criteria are not met. |
| **g)** | **Reproductive toxicity** | Not classified. Based on the available data, the classification criteria are not met. |
| **h)** | **STOT single exposure** | Specific target organ toxicity — repeated exposure, category 3. May cause drowsiness or dizziness. |
| **i)** | **STOT repeated exposure** | Not classified. Based on the available data, the classification criteria are not met. |
| **j)** | **Aspiration hazard** | Aspiration hazard, category 1. May be fatal if swallowed and enters airways. |

**Information on likely routes of exposure**

| | |
|---|---|
| Inhalation | May cause drowsiness or dizziness. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in drowsiness, dizziness, light headedness, headache, disorientation, fatigue, nausea and loss of coordination. The onset of respiratory symptoms may be delayed for several hours after exposure. |
| Ingestion | May be fatal if swallowed and enters airways. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. |
| Eye contact | Vapour, mist or fume may cause eye irritation. Eye contact may cause redness and transient pain. |
| Skin contact | Causes skin irritation. Prolonged or repeated contact can defeat the skin and lead to irritation and/or dermatitis. |

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

Skin contact causes irritation, redness and pain. Repeated exposure may cause skin dryness or cracking. Eye contact may cause slight irritation, watering, redness and pain. Inhalation of vapours may cause drowsiness or dizziness. Ingestion may cause irritation of the mouth and digestive tract. If swallowed, aspiration into lungs may result in chemical pneumonia.

### 11.2 INFORMATION ON OTHER HAZARDS

**Endocrine-disrupting properties**

This mixture does not contain substances that cause endocrine disruption for human health.

**Other information**

High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 TOXICITY

Hazardous to the aquatic environment – Aquatic Chronic, category 2. Toxic to aquatic life with long lasting effects.

| | |
|---|---|
| Kerosene (petroleum) | $LL_{50}$/96h (Oncorhynchus mykiss): 2 – 100 mg/L |
| | NOEL (Oncorhynchus mykiss): 0.098 mg/L |
| | $EL_{50}$/48h (Daphnia magna): 1.9 – 89 mg/L |
| | NOEL/21 d (Daphnia magna): 0.48 mg/L |
| | $EL_{50}$/72h (Selenastrum capricornutum): 3.7 mg/L |
| | NOEL (Selenastrum capricornutum): 10 mg/L |

### 12.2 PERSISTENCE AND DEGRADABILITY

Kerosine is readily biodegrade in 28 days but not within the 10-day window. Therefore, it is not readily biodegradable, but as they can be degraded by micro-organisms, they are regarded as being inherently biodegradable (CONCAWE, 2001).

### 12.3 BIOACCUMULATIVE POTENTIAL

Substance is a hydrocarbon UVCB, so tests are not usually appropriate. In practice, metabolic processes may reduce bioconcentration.

### 12.4 MOBILITY IN SOIL

Spillages may penetrate the soil causing ground water contamination. Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day. If it enters soil, it will adsorb to soil particles and will not be mobile.
Koc uptake: standard tests for this endpoint are not applicable to UVCB substances.

### 12.5 RESULTS OF PBT AND vPvB ASSESSMENT

The product does not contain substances assessed to be PBT or vPvB.

### 12.6 ENDOCRINE DISRUPTING PROPERTIES

The mixture has no endocrine-disrupting effects.

### 12.7 OTHER ADVERSE EFFECTS

Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 WASTE TREATMENT METHODS

**Waste treatment methods**

Do not discharge onto the ground or into sewers, drains or watercourses. For the disposal of waste from the product, including empty containers that have not been reclaimed.

**Product disposal**

13 07 01* fuel oil and diesel. The code given is only a general indication, based on the original composition of the product and its intended uses. It is the responsibility of the waste producer to choose the most appropriate code based on the actual use of the product, possible alterations, and contamination.

**Packaging disposal**
Waste packaging should be recycled wherever possible. Send to drum recycler or metal reclaimer. Care should be taken when handling emptied containers that have not been cleaned out. 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. Incineration or landfill should only be considered when recycling is not feasible.

**Local legislation**
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 Hazardous Waste (England and Wales) Regulations 2005 and EU Waste Framework Directive 2008/98/EC.

## SECTION 14: TRANSPORT INFORMATION

ADR, RID, ADN, IMDG Code, IATA

### 14.1 UN NUMBER OR ID NUMBER
UN 1223

### 14.2 UN PROPER SHIPPING NAME
KEROSENE

### 14.3 TRANSPORT HAZARD CLASS(ES)
Class 3

### 14.4 PACKING GROUP
III

### 14.5 ENVIRONMENTAL HAZARDS
| | |
|---|---|
| ADR/IATA/RID/ADN | YES |
| IMDG | Marine Pollutant |

### 14.6 SPECIAL PRECAUTIONS FOR THE USER
Transport, including loading and unloading, must be carried out by personnel who have received the necessary training in the relevant modal regulations concerning the transport of dangerous goods.

During loading and unloading, apply the personal protective measures prescribed in section 8.2.2 of this sheet. Avoid direct skin contact with the product. Identify potential areas of indirect skin contact. Wear protective gloves (tested according to EN374) if the substance is likely to meet hands. Remove contamination/spillages as soon as they occur. Remove any skin contamination immediately. Provide basic training to personnel aimed at preventing/limiting exposure (E3).

Tunnel Restriction Code (ADR): D/E
Transport category: 3
Shipboard emergency measures (IMDG): EmS F-E S-E
Hazard identification number: 3
Emergency Action Code: 3Y

### 14.7 MARITIME TRANSPORT IN BULK ACCORDING TO IMO INSTRUMENTS
If intend to be transported in bulk, follow (IMO) regulations and SOLAS Chapters VI and VII, Annex II or Annex V, Marpol 73/78 and the IBC Code where applicable.

## SECTION 15: REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

**UK Regulations**

This product has been classified according to Regulation (EC) No 1272/2008 (CLP) amended by GB CLP (UK SI 2019/720 as amended).

This SDS has been prepared in accordance with REACH Regulation (EC) No 1907/2006, amended by UK REACH (UK SI 2019/758 as amended).

Health and Safety at Work Act

The Control of Major Accident Hazards (COMAH) Regulations.

The Control of Substances Hazardous to Health (COSHH) Regulations

Hazardous Waste (England and Wales) Regulations 2005

UK Waste (Circular Economy) (Amendment) Regulations 2020

The Waste (England and Wales) Regulations 2011

**EU Regulations**

The product is classified in accordance with EC Regulation 1272/2008 (CLP).

This SDS has been prepared in accordance with REACH Regulation (EC) No 1907/2006 as amended by Commission Regulation EU 2020/878.

Waste Framework Directive 2008/98/EC.

Chemical Agents Directive (CAD) Council Directive 98/24/EC as amended.

Directive 98/70/EC.

**Authorisations and/or restrictions on use**

Substance not listed.

Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants
Substance not listed.

Regulation (EC) N° 2037/2000 on substances that deplete the ozone layer
Substance not listed.

Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals
Substance not listed.

Regulation (EU) N° 528/2012 Biocidal Products Regulation
Substance not listed.

### 15.2 CHEMICAL SAFETY ASSESSMENT

A chemical safety assessment has been carried out for this substance.

## SECTION 16: OTHER INFORMATION

**I) INDICATION OF CHANGES**

SDS Reference: Kerosene (petroleum) 03

Version number: 3

Revision date: 24/03/2026. Update of all sections of the SDS to comply with COMMISSION REGULATION (EU) 2020/878.

**II) ABBREVIATIONS AND ACRONYMS**

| | |
|---|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute Toxicity Estimate |
| bw | Body weight |
| CAS number | Chemical Abstracts Service Number |
| CLP | Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures |
| COSHH | Control of Substances Hazardous to Health |
| EC number | European Inventory of Existing Commercial Chemical Substances or European List of Notified Chemical Substances number |
| $EL_{50}$ | Effective Loading 50% |
| GESTIS ILV | International Limit Values for chemical agents |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| $LC_{50}$ | Lethal concentration 50% |
| $LD_{50}$ | Lethal dose 50% |
| $LL_{50}$ | Lethal Loading 50% |
| NOEL | No observed effect level |
| PBT | Persistent, bioaccumulative and toxic |
| REACH | Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SCL | Specific Concentration Limit |
| STOT | Specific target organ toxicity |
| vPvB | very persistent and very bioaccumulative |

**III) KEY LITERATURE REFERENCES AND SOURCES FOR DATA**

Supplier's safety data sheet
Regulation (EC) No. 1272/2008
Regulation (EC) No. 1907/2006
Mandatory Classification and Labelling List (GB MCL List)
ECHA REACH dossiers
HSE EH40/2005 4th Edition, 2020
GESTIS ILV (https://limitvalue.ifa.dguv.de/)
Concawe Report 01/97 – Petroleum Products – First Aid Emergency and Medical Advice.
Concawe Report 00/56 – Revised Preparations – Summary Data and Rationale.
CENELEC CLC/TR 50404 Electrostatics – Code of Practice for the Avoidance of Hazards Due to Static Electricity.
Dangerous Goods Regulations – ADR/RID, ADN/ADNR, IMDG, IATA.
European Model Code of Safe Practice in the Storage and Handling of Petroleum Products, Associated Octel Company.
UK – Leaded Gasoline Tank Cleaning and Disposal of Sludge (Booklet OIP/5 (5/99)).
Endocrine Disruptor Lists (https://edlists.org/)
Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants.
Regulation (EC) N° 2037/2000 on substances that deplete the ozone layer.
Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals.
Regulation (EU) N° 528/2012 Biocidal Products Regulation

**IV) CLASSIFICATION AND PROCEDURE USED TO DERIVE THE CLASSIFICATION FOR MIXTURES ACCORDING TO REGULATION (EC) 1272/2008 [CLP]**

Not applicable for substances.

**V) RELEVANT H-STATEMENTS (NUMBER AND FULL TEXT)**

| | |
|---|---|
| Flam. Liq. 3; H226 | Flammable liquid, category 3. Flammable liquid and vapour. |
| Asp. Tox. 1; H304 | Aspiration hazard, category 1. May be fatal if swallowed and enters airways. |
| Skin Irrit. 2; H315 | Skin corrosion/irritation, category 2. Causes skin irritation. |
| STOT SE 3; H336 | Specific target organ toxicity — single exposure, category 3. May cause drowsiness or dizziness. |
| Aquatic Chronic 2; H411 | Hazardous to the aquatic environment – Aquatic Chronic, category 2. Toxic to aquatic life with long lasting effects. |

**VI) SDS DISTRIBUTION AND TRAINING**

This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters. Workers should be trained to handle this substance safely.

**VII) FURTHER INFORMATION**

Users are advised to refer to relevant legislation, approved codes of practice and guidance available from the Health & Safety Executive (website: http://www.hse.gov.uk) and to the IP Codes of Practice available from the Energy Institute (website: http://www.energyinst.org.uk).

End of safety data sheet

**DISCLAIMER**

The above information is based on our current knowledge of the product. The purpose of this data sheet is to describe the product in terms of its safety and environmental requirements. It is the user's responsibility to satisfy themselves as to the application of this information and/or recommendations for their own use. This safety data sheet contains important information to ensure the safe storage, handling and use of this product, it does not however constitute an assessment of workplace risks. The advice given in this safety data sheet reflects the current knowledge of the hazards and risks associated with the handling of the product. If the product is mixed with other materials the users shall take these into account in identifying any additional hazards and risks might arise.

## EXPOSURE SCENARIOS

## ES 1 DISTRIBUTION OF SUBSTANCE – INDUSTRIAL

### SECTION 1 EXPOSURE SCENARIO

Kerosenes

**Title**

Distribution of substance

**Use Descriptor**

| | |
|---|---|
| Sector(s) of Use | 3 |
| Process Category(ies) | 1, 2, 3, 4, 8a, 8b, 9, 15 |
| Environmental Release Category(ies) | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7 |
| Specific Environmental Release Category | ESVOC SpERC 1.1b.v1 |

**Processes, tasks, activities covered**

Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities

### SECTION 2 OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES

#### 2.1 Control of worker exposure

**Product Characteristics**

| | |
|---|---|
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently). |
| Frequency and duration of use | Covers daily exposures up to 8 hours (unless stated differently) |
| Other operational conditions affecting exposure | Assumes use at not more than 20°C above ambient temperatures, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. |
| Contributing Scenarios / Product Category | Specific Risk Management Measures & Operating Conditions |
| General measures (skin irritants) | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. |
| General exposures (closed systems) | No other specific measures identified. |
| General exposures (open systems) | No other specific measures identified. |
| Process sampling | No other specific measures identified. |
| Laboratory activities | No other specific measures identified. |
| Bulk transfers | No other specific measures identified. |
| Drum and small package filling | No other specific measures identified. |
| Equipment cleaning and maintenance | No other specific measures identified. |
| Bulk product storage | No other specific measures identified. |

Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect does not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.

#### 2.2 Control of environmental exposure

**Product Characteristics**

Substance is complex UVCB. Predominantly hydrophobic.

**Amounts used**

| | |
|---|---|
| Fraction of EU tonnage used in region | 0.1 |
| Regional use tonnage (tonnes/year) | 5.4e6 |
| Fraction of regional tonnage used locally | 2.0e-3 |

**Frequency and duration of use**

| | |
|---|---|
| Continuous release. | |
| Emission days (days/year) | 300 |

**Environmental factors not influenced by risk management**

| | |
|---|---|
| Local freshwater dilution factor | 10 |
| Local marine water dilution factor | 100 |

**Other given operational conditions affecting environmental exposure**

| | |
|---|---|
| Release fraction to air from process (initial release prior to RMM) | 1.0e-3 |
| Release fraction to wastewater from process (initial release prior to RMM) | 1.0e-5 |
| Release fraction to soil from process (initial release prior to RMM) | 0.00001 |

**Technical conditions and measures at process level (source) to prevent release**

Common practices vary across sites thus conservative process release estimates used.

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater. No wastewater treatment required.

| | |
|---|---|
| Treat air emission to provide a typical removal efficiency of (%): | 90 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): | 0 |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): | 0 |

**Organisation measures to prevent/limit release from site**

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

| | |
|---|---|
| Estimated substance removal from wastewater via domestic sewage treatment (%): | 94.7 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): | 94.7 |
| Maximum allowable site tonnage (Msafe) based on release following total Wastewater treatment removal (kg/d): | 2.6e6 |
| Assumed domestic sewage treatment plant flow ($m^3$/d): | 2000 |

**Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**

During manufacturing no waste of the substance is generated.

## SECTION 3 EXPOSURE ESTIMATION

### 3.1 Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### 3.2 Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

## SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

### 4.1 Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

## ES 2 FORMULATION & (RE)PACKING OF SUBSTANCE – INDUSTRIAL

## SECTION 1 EXPOSURE SCENARIO

Kerosenes

**Title**

Formulation & (re)packing of substances and mixtures

**Use Descriptor**

| | |
|---|---|
| Sector(s) of Use | 3, 10 |
| Process Category(ies) | 1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15 |
| Environmental Release Category(ies) | 2 |
| Specific Environmental Release Category | ESVOC SpERC 2.2v1 |

**Processes, tasks, activities covered**

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletization, extrusion, large- and small-scale packing, sampling, maintenance and associated laboratory activities.

## SECTION 2 OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES

### 2.1 Control of worker exposure

**Product Characteristics**

| | |
|---|---|
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently). |
| Frequency and duration of use | Covers daily exposures up to 8 hours (unless stated differently) |
| Other operational conditions affecting exposure | Assumes use at not more than 20°C above ambient temperatures, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. |
| Contributing Scenarios / Product Category | Specific Risk Management Measures & Operating Conditions |
| General measures (skin irritants) | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. |
| General exposures (closed systems) | No other specific measures identified. |
| General exposures (open systems) | No other specific measures identified. |
| Process sampling | No other specific measures identified. |
| Laboratory activities | No other specific measures identified. |
| Bulk transfers | No other specific measures identified. |
| Mixing operations (open systems) | No other specific measures identified. |
| Manual Transfer from/pouring from containers | No other specific measures identified. |
| Drum/batch transfers | No other specific measures identified. |
| Production or preparation of articles by Tabletting, compression, extrusion or pelletisation | No other specific measures identified |
| Equipment cleaning and maintenance | No other specific measures identified. |
| Bulk product storage | No other specific measures identified. |

Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect does not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.

### 2.2 Control of environmental exposure

**Product Characteristics**

Substance is complex UVCB. Predominantly hydrophobic.

**Amounts used**

| | |
|---|---|
| Fraction of EU tonnage used in region | 0.1 |
| Regional use tonnage (tonnes/year) | 5.2e6 |
| Fraction of regional tonnage used locally | 5.8e-3 |

**Frequency and duration of use**

Continuous release.

| | |
|---|---|
| Emission days (days/year) | 300 |

**Environmental factors not influenced by risk management**

| | |
|---|---|
| Local freshwater dilution factor | 10 |
| Local marine water dilution factor | 100 |

**Other given operational conditions affecting environmental exposure**

| | |
|---|---|
| Release fraction to air from process (initial release prior to RMM) | 1.0e-2 |
| Release fraction to wastewater from process (initial release prior to RMM) | 2.0e-4 |
| Release fraction to soil from process (initial release prior to RMM) | 0.0001 |

**Technical conditions and measures at process level (source) to prevent release**

Common practices vary across sites thus conservative process release estimates used.

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

| | |
|---|---|
| Treat air emission to provide a typical removal efficiency of (%): | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): | 86.0 |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): | 0 |

**Organisation measures to prevent/limit release from site**

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

| | |
|---|---|
| Estimated substance removal from wastewater via domestic sewage treatment (%): | 94.7 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): | 94.7 |
| Maximum allowable site tonnage (Msafe) based on release following total Wastewater treatment removal (kg/d): | 2.6e5 |
| Assumed domestic sewage treatment plant flow ($m^3$/d): | 2000 |

**Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations.

## SECTION 3 EXPOSURE ESTIMATION

### 3.1 Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### 3.2 Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

## SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

### 4.1 Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

**ES 3 USE OF SUBSTANCE AS A FUEL - INDUSTRIAL**

## SECTION 1 EXPOSURE SCENARIO

Kerosenes

**Title**

Use as a fuel

**Use Descriptor**

| | |
|---|---|
| Sector(s) of Use | 3 |
| Process Category(ies) | 1, 2, 3, 8a, 8b, 16 |
| Environmental Release Category(ies) | 7 |
| Specific Environmental Release Category | ESVOC SpERC 7.12a.v1 |

**Processes, tasks, activities covered**

Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste

## SECTION 2 OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES

### 2.1 Control of worker exposure

**Product Characteristics**

| | |
|---|---|
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently). |
| Frequency and duration of use | Covers daily exposures up to 8 hours (unless stated differently) |
| Other operational conditions affecting exposure | Assumes use at not more than 20°C above ambient temperatures, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. |
| Contributing Scenarios / Product Category | Specific Risk Management Measures & Operating Conditions |
| General measures (skin irritants) | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. |
| General exposures (closed systems) | No other specific measures identified. |
| Use as a fuel (closed systems) | No other specific measures identified. |
| Bulk transfers | No other specific measures identified. |
| Drum/batch transfers | No other specific measures identified. |
| Equipment cleaning and maintenance | No other specific measures identified. |
| Bulk product storage | No other specific measures identified. |

Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect does not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.

### 2.2 Control of environmental exposure

**Product Characteristics**

Substance is complex UVCB. Predominantly hydrophobic.

**Amounts used**

| | |
|---|---|
| Fraction of EU tonnage used in region | 0.1 |
| Regional use tonnage (tonnes/year) | 5.5e5 |
| Fraction of regional tonnage used locally | 1 |

**Frequency and duration of use**

| | |
|---|---|
| Continuous release. | |
| Emission days (days/year) | 300 |

**Environmental factors not influenced by risk management**

| | |
|---|---|
| Local freshwater dilution factor | 10 |

| | |
|---|---|
| Local marine water dilution factor | 100 |

**Other given operational conditions affecting environmental exposure**

| | |
|---|---|
| Release fraction to air from process (initial release prior to RMM) | 5.0e-3 |
| Release fraction to wastewater from process (initial release prior to RMM) | 0.00001 |
| Release fraction to soil from process (initial release prior to RMM) | 0 |

**Technical conditions and measures at process level (source) to prevent release**

Common practices vary across sites thus conservative process release estimates used.

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater sediment. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

| | |
|---|---|
| Treat air emission to provide a typical removal efficiency of (%): | 95 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): | 84.6 |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): | 0 |

**Organisation measures to prevent/limit release from site**

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

| | |
|---|---|
| Estimated substance removal from wastewater via domestic sewage treatment (%): | 94.7 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): | 94.7 |
| Maximum allowable site tonnage (Msafe) based on release following total Wastewater treatment removal (kg/d): | 5.3e6 |
| Assumed domestic sewage treatment plant flow ($m^3$/d): | 2000 |

**Conditions and measures related to external treatment of waste for disposal**

Combustion emissions limited by required exhaust emission controls.
Combustion emissions considered in regional exposure assessment.

**Conditions and measures related to external recovery of waste**

This substance is consumed during use and no waste of the substance is generated.

## SECTION 3 EXPOSURE ESTIMATION

### 3.1 Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### 3.2 Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

## SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

### 4.1 Health

Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

## ES 4 USE OF SUBSTANCE AS A FUEL - PROFESSIONAL

## SECTION 1 EXPOSURE SCENARIO

Kerosenes

**Title**

Use as a fuel

**Use Descriptor**

| | |
|---|---|
| Sector(s) of Use | 22 |
| Process Category(ies) | 1, 2, 3, 8a, 8b, 16 |
| Environmental Release Category(ies) | 9a, 9b |
| Specific Environmental Release Category | ESVOC SpERC 9.12b.v1 |

**Processes, tasks, activities covered**

Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste

**SECTION 2 OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

**2.1 Control of worker exposure**

**Product Characteristics**

| | |
|---|---|
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently). |
| Frequency and duration of use | Covers daily exposures up to 8 hours (unless stated differently) |
| Other operational conditions affecting exposure | Assumes use at not more than 20°C above ambient temperatures, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. |
| Contributing Scenarios / Product Category | Specific Risk Management Measures & Operating Conditions |
| General measures (skin irritants) | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. |
| General exposures (closed systems) | No other specific measures identified. |
| Use as a fuel (closed systems) | No other specific measures identified. |
| Bulk transfers | No other specific measures identified. |
| Transfer from/pouring from containers | No other specific measures identified. |
| Equipment cleaning and maintenance | No other specific measures identified. |
| Bulk product storage | No other specific measures identified. |

Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect does not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.

**2.2 Control of environmental exposure**

**Product Characteristics**

Substance is complex UVCB. Predominantly hydrophobic.

**Amounts used**

| | |
|---|---|
| Fraction of EU tonnage used in region | 0.1 |
| Regional use tonnage (tonnes/year) | 4.4e6 |
| Fraction of regional tonnage used locally | 5.4e-4 |

**Frequency and duration of use**

| | |
|---|---|
| Continuous release. | |
| Emission days (days/year) | 365 |

**Environmental factors not influenced by risk management**

| | |
|---|---|
| Local freshwater dilution factor | 10 |
| Local marine water dilution factor | 100 |

**Other given operational conditions affecting environmental exposure**

| | |
|---|---|
| Release fraction to air from process (initial release prior to RMM) | 1.0e-3 |
| Release fraction to wastewater from process (initial release prior to RMM) | 0.00001 |
| Release fraction to soil from process (initial release prior to RMM) | 0.00001 |

**Technical conditions and measures at process level (source) to prevent release**

Common practices vary across sites thus conservative process release estimates used.

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater. No wastewater treatment required.

| | |
|---|---|
| Treat air emission to provide a typical removal efficiency of (%): | N/A |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): | 0 |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): | 0 |

**Organisation measures to prevent/limit release from site**

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

| | |
|---|---|
| Estimated substance removal from wastewater via domestic sewage treatment (%): | 94.7 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): | 94.7 |
| Maximum allowable site tonnage (Msafe) based on release following total Wastewater treatment removal (kg/d): | 6.9e5 |
| Assumed domestic sewage treatment plant flow ($m^3$/d): | 2000 |

**Conditions and measures related to external treatment of waste for disposal**

Combustion emissions limited by required exhaust emission controls.
Combustion emissions considered in regional exposure assessment.

**Conditions and measures related to external recovery of waste**

This substance is consumed during use and no waste of the substance is generated.

**SECTION 3 EXPOSURE ESTIMATION**

**3.1 Health**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

**3.2 Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

**SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**

**4.1 Health**

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**4.2 Environment**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

**ES 5 USE OF SUBSTANCE AS A FUEL - CONSUMER**

**SECTION 1 EXPOSURE SCENARIO**

Kerosenes

**Title**

Use as a fuel

**Use Descriptor**

Sector(s) of Use 21

| | |
|---|---|
| Process Category(ies) | 13 |
| Environmental Release Category(ies) | 9a, 9b |
| Specific Environmental Release Category | ESVOC SpERC 9.12c.v1 |

**Processes, tasks, activities covered**

Covers consumer uses in liquid fuels.

**SECTION 2 OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

**2.1 Control of consumer exposure**

**Product Characteristics**

| | |
|---|---|
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently). |
| Amounts used | For each use event, covers use amounts up to (g): 50000. Covers skin contact area up to ($cm^2$): 420. |
| Frequency and duration of use | Covers use up to (times/day of use): 0.143. Covers exposure up to (hours/event): 2. |
| Other operational conditions affecting exposure | Covers use at ambient temperatures. Covers use in room size of ($m^3$): 20. Covers use under typical household ventilation. |
| Contributing Scenarios / Product Category | Specific Risk Management Measures & Operating Conditions |
| Liquid: Automotive Refuelling | Covers concentrations up to (%): 100%. Covers use up to (days/year): 52. Covers use up to (times/day of use): 1. Covers skin contact area up to (cm2): 210.00. For each use event, covers use amounts up to (g): 50000. Covers outdoor use. Covers use in room size of ($m^3$): 100. Covers exposure up to (hours/event): 0.05. No specific risk management measure identified beyond those operational conditions stated. |
| Liquid: Home space heater fuel | Covers concentrations up to (%): 100%. Covers use up to (days/year): 365. Covers use up to (times/day of use): 1. Covers skin contact area up to (cm2): 210.00. For each use event, covers use amounts up to (g): 1500. Covers use under typical household ventilation. Covers use in room size of ($m^3$): 20. Covers exposure up to (hours/event): 0.03. No specific risk management measure identified beyond those operational conditions stated. |
| Liquid Garden Equipment – Use | Covers concentrations up to (%): 100%. Covers use up to (days/year): 26. Covers use up to (times/day of use): 1. For each use event, covers use amounts up to (g): 1000. Covers outdoor use. Covers use in room size of ($m^3$): 100. Covers exposure up to (hours/event): 2.00. No specific risk management measure identified beyond those operational conditions stated. |
| Liquid: Garden Equipment – Refuelling | Covers concentrations up to (%): 100%. Covers use up to (days/year): 26. Covers use up to (times/day of use): 1. Covers skin contact area up to (cm2): 420.00. For each use event, covers use amounts up to (g): 1000. Covers use in a one car garage (34 $m^3$) under typical ventilation. Covers use in room size of ($m^3$): 34. Covers exposure up to (hours/event): 0.03. No specific risk management measure identified beyond those operational conditions stated. |

Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect does not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.

**2.2 Control of environmental exposure**

**Product Characteristics**

Substance is complex UVCB. Predominantly hydrophobic.

**Amounts used**

| | |
|---|---|
| Fraction of EU tonnage used in region | 0.1 |
| Regional use tonnage (tonnes/year) | 1.8e5 |

| | |
|---|---|
| Fraction of regional tonnage used locally | 0.0005 |

**Frequency and duration of use**

| | |
|---|---|
| Continuous release. | |
| Emission days (days/year) | 365 |

**Environmental factors not influenced by risk management**

| | |
|---|---|
| Local freshwater dilution factor | 10 |
| Local marine water dilution factor | 100 |

**Other given operational conditions affecting environmental exposure**

| | |
|---|---|
| Release fraction to air from process (initial release prior to RMM) | 1.0e-3 |
| Release fraction to wastewater from process (initial release prior to RMM) | 0.00001 |
| Release fraction to soil from process (initial release prior to RMM) | 0.00001 |

**Conditions and measures related to municipal sewage treatment plant**

| | |
|---|---|
| Risk from environmental exposure is driven by freshwater. | |
| Estimated substance removal from wastewater via domestic sewage treatment (%): | 94.7 |
| Maximum allowable site tonnage (Msafe) based on release following total | 3.1e4 |
| Wastewater treatment removal (kg/d): | |
| Assumed domestic sewage treatment plant flow ($m^3$/d): | 2000 |

**Conditions and measures related to external treatment of waste for disposal**

Combustion emissions limited by required exhaust emission controls.
Combustion emissions considered in regional exposure assessment.

**Conditions and measures related to external recovery of waste**

This substance is consumed during use and no waste of the substance is generated.

## SECTION 3 EXPOSURE ESTIMATION

### 3.1 Health

The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC report #107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated.

### 3.2 Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

## SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

### 4.1 Health

Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).