Aviation Fuel Jet A-1 (all types)) / JP 8 / JP 5 / F35

Safety Data Sheet

EU SDS format according to COMMISSION REGULATION (EU) 2020/878
Release Date: 20/05/2025 Revision Date: 2025-05-15 Replaces version on: 03/04/2021 Version: 3.0

SECTION 1: Identification of the substance/mixture and the company/ undertaking

1.1. Product identifier

Product form	:	Substance (UVCB)
Trade name	:	Aviation Fuel Jet A-1 (all types)) / JP 8 / JP 5 / F35
Chemical name	:	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [a complex combination of hydrocarbons obtained from a petroleum feedstock by treating it with hydrogen to convert organic sulfur into hydrogen sulfide, which is then removed. It consists of hydrocarbons primarily in the carbon number range of C9 to C16 and has a boiling point range of approximately 150 °C to 290 °C (302 °F to 554 °F).]
EC Index No.	:	649-423-00-8
EC number	:	265-184-9
CAS Number	:	64742-81-0
REACH registration number	:	01-2119462828-25-0116
Product Type	:	Hydrocarbon blend
Formula	:	UVCB
Product group	:	Commercial Product

1.2. Relevant identified uses of the substance or mixture and discouraged uses

1.2.1. Relevant identified uses

Main Use Category	:	Industrial use,Professional use,Consumer use
Specification for professional/industrial use	:	Non-dispersive use Use in closed systems
Use of substance/mixture	:	Fuels Functional fluids Intermediates Detergent/washing agents and additives Binding and release agent
Function or use category	:	Fuels, Intermediates, Cleaning/Washing Agents and Additives, Binding and Release Agent

Title	Use Descriptors
Distribution of the substance (Ref. SE: 01a)	SU3, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1
Formulation and (re)packaging of substances and mixtures (Ref. SE: 02)	SU3, SU10, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, ERC2, ESVOC SPERC 2.2.v1
Use as fuel (Ref. SE: 12a)	SU3, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16, ERC7, ESVOC SPERC 7.12a.v1
Use as fuel (Ref. SE: 12b)	SU22, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16, ERC9a, ERC9b, ESVOC SPERC 9.12b.v1
Use as fuel (Ref. SE: 12c)	SU21, ERC9a, ERC9b, ESVOC SPERC 9.12c.v1

Full text of the descriptors of use : see section 16

1.2.2. Not recommended uses

Relevant uses are listed above. No other uses are recommended unless an assessment has been carried out, prior to the start of such use, demonstrating that the risks associated with such use are controlled.

1.3. Information on the safety data sheet provider

Producer
JEnergy S.p.A.Via Adolfo Ravà, 49IT 00142 Rome, Italy
T +39 06590101, F +39 065414923
reach@jenergyspa.it

1.4. Emergency telephone number

Emergency number : +39 06590101
Bambino Gesù Children's Hospital - Rome - +39 06 6859 3726 - 24h
"University of Foggia Hospital - Foggia - +39 800 18 3459 - 24h
"A. Cardarelli" Hospital - Naples - +39 081 5453 333 - 24h
Umberto I Polyclinic - Rome - +39 06 4997 8000 - 24hA. Gemelli Polyclinic - Rome - +39 06 3054 343 - 24h
"Careggi Hospital Department of Medical Toxicology - Florence - +39 055 7947 819 - 24h
National Center of Toxicological Information - Pavia - +39 0382 24444 - 24h
"Niguarda Ca' Granda Hospital - Milan - +39 02 6610 1029 - 24h
"Papa Giovanni XXIII Hospital - Bergamo - +39 800 88 3300 - 24h
Verona Integrated Hospital - Verona - +39 800 01 1858 - 24h

SECTION 2: Hazard Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS / CLP]

Flammable liquids, category 3	H226
Skin corrosion/irritation, category 2	H315
Carcinogenicity, category 1B	H350
Specific Target Organ Toxicity – Single Exposure, Category 3 – Narcosis	H336
Aspiration hazard, category 1	H304
Hazardous to the aquatic environment – Chronic hazard, category 2	H411

Full text of H and EUH phrases: see section 16

Adverse physicochemical effects on human health and the environment

Flammable liquid and vapors. Repeated and prolonged contact may cause skin redness, irritation and contact dermatitis due to degreasing effect. It may cause cancer.May cause drowsiness or dizziness. Aspiration into the lungs may cause chemical pneumonia. Toxic to aquatic organisms, may cause long-term negative effects for the aquatic environment. For specific information on toxicological properties and product classification, refer to section 11 and/or 12 of the safety data sheet.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS02 GHS07 GHS08 GHS09

Warning (CLP) : Danger

Hazard statements (CLP) : H226 - Flammable liquid and vapours.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H350 - May cause cancer.
H411 - Toxic to aquatic organisms with long-lasting effects.

Precautionary statements (CLP) : P102 - Keep out of reach of children.
P201 - Obtain specific instructions before use.
P210 - Keep away from heat sources, hot surfaces, sparks, open flames, or other sources of ignition. No smoking.
P273 - Do not disperse in the environment.
P280 - Wear protective gloves, Wear protective clothing. Protect your eyes, face.
P301+P310 - IF SWALLOWED: Contact a POISON CENTER/physician immediately.
P308+P313 - IF exposure or possible exposure occurs, seek medical attention.
P331 - DO NOT induce vomiting.
P501 - Dispose of the product and container in accordance with national regulations.

2.3. Other hazards (not relevant to classification)

Other hazards that do not appear in the classification : The product can be electrostatically charged: always use the ground connections when transferring it from one container to another. The vapors can form a flammable and explosive mixture with air. The vapours can extend a considerable distance at ground level before igniting and/or flashing back to the source of the vapour. Any substance, in the case of accidents with pressure pipes and the like, can be accidentally injected into the subcutaneous tissues, even without apparent external injuries. In this case, it is necessary to take the injured person to the hospital as soon as possible for treatment.

This substance/mixture does not meet the PBT criteria of the REACH Regulation, Annex XIII
This substance/mixture does not meet the vPvB criteria of the REACH Regulation, Annex XIII
Does not contain PBT and/or vPvB substances ≥ 0.1% evaluated in accordance with Annex XIII of REACH

The substance is not included in the list established in accordance with Article 59(1) of REACH for endocrine disrupting properties, or is not identified as having endocrine disrupting properties according to the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Type of substance : UVCB
Name : kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).]
CAS Number : 64742-81-0
EC number : 265-184-9
EC Index No. : 649-423-00-8

Name	Product identifier	%	Classification according to Regulation (EC) No 1272/2008 [EU-GHS / CLP]
kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).]	CAS Number: 64742-81-0 EC Number: 265-184-9 EC Index No.: 649-423-00-8 REACH No.: 01-2119462828-25-0116	100	See Section 2.1
Cumene (Constituent)	CAS Number: 98-82-8 EC Number: 202-704-5 EC Index No.: 601-024-00-X REACH No.: 01-2119473983-24	0,1 – 1	Flam. Liq. 3, H226Carc. 1B, H350 Asp. Tox. 1, H304STOT SE 3, H335Aquatic Chronic 2, H411
hydrogen sulfide (Contaminant)	CAS Number: 7783-06-4 EC Number: 231-977-3 EC Index No.: 016-001-00-4 REACH no.: N/A	< 0.1	Flam. Gas 1A, H220Press. GasAcute Tox. 2 (inhaled), H330 (ATE=100 ppmv/4h)Aquatic Acute 1, H400

Full text of H and EUH phrases: see section 16

SECTION 4: First Aid Measures

4.1. Description of first aid measures

General first aid measures	:	If spontaneous or incorrectly provoked vomiting occurs, urgently transport the person to a hospital to assess the risk of aspiration into the lungs.
First aid measures in case of inhalation	:	The risk of inhalation is unlikely due to the low vapour pressure at ambient temperature. Exposure to vapours can, however, occur when the substance is handled at high temperatures under poorly ventilated conditions. Move the person to a well-ventilated area, keep warm and rest. If the injured person is unconscious and not breathing: check for obstacles to breathing and practice artificial respiration by competent personnel. If necessary, perform external cardiac massage and consult a doctor. If the victim is breathing: Keep in a lateral safety position. Administer oxygen if necessary. If hydrogen sulfide (H2S) inhalation is suspected, rescuers should wear appropriate breathing equipment, safety harness, and lifelines, and adopt the appropriate rescue procedures. Immediately transfer the injured person to the hospital. Begin artificial respiration immediately if breathing has stopped. Administer oxygen if necessary. Seek medical attention immediately.
First aid measures in the event of skin contact	:	Remove contaminated footwear and clothing and dispose of them safely. Wash the skin with soap and water. Seek medical attention immediately in case irritation, swelling, or redness develops and persists. Do not apply ointments or anything else, unless medically ordered. For minor thermal burns, cool the affected area with plenty of cold water for at least five minutes, or until the pain disappears. Avoid general hypothermia. When using high-pressure equipment, product injection may occur. Immediately transfer the injured person to the hospital. Do not wait for symptoms to appear.
First aid measures in case of contact with eyes	:	Rinse thoroughly for at least 15 minutes. Keep the eyelids wide open. Remove contact lenses, if present, if the situation allows the operation to be carried out easily. Continue rinsing. If you experience irritation, blurred vision, or persistent swelling, consult a medical professional.
First aid measures in case of ingestion	:	Do not induce vomiting to avoid the risk of aspiration. Do not administer anything by mouth to a person who is unconscious. If swallowed, always assume that aspiration has taken place. Immediately transfer the injured person to the hospital. Do not wait for symptoms to appear. In case of spontaneous vomiting, keep the head down, to avoid the risk of aspiration into the lungs.

4.2. Main symptoms and effects, both acute and delayed

Symptoms/effects	:	Potential chronic health effects are to be considered.
Symptoms/effects in case of inhalation	:	Inhalation of the vapors can cause headaches, nausea, vomiting and an altered state of consciousness. It can cause drowsiness or dizziness.
Symptoms/effects in case of skin contact	:	Repeated and prolonged contact can cause skin redness, irritation and contact dermatitis due to degreasing effect.
Symptoms/effects in case of contact with eyes	:	Contact with the eyes may cause slight transient irritation.
Symptoms/effects in case of ingestion	:	Ingestion of the fluid can cause aspiration into the lungs with the risk of chemical pneumonia. It can be fatal if swallowed and penetrated into the respiratory tract.
Symptoms/effects after intravenous administration	:	No information available.
Chronic symptoms	:	It can cause cancer.

4.3. Indication of the need for immediate medical advice and special treatment

Seek medical attention if the victim is in an altered state of consciousness, or if symptoms do not disappear. If swallowed, always assume that aspiration has taken place. Immediately transfer the injured person to the hospital. If necessary, perform gastric lavage ONLY under qualified medical supervision.

SECTION 5: Firefighting Measures

5.1. Extinguishing means

Suitable extinguishing means	:	Small fires: carbon dioxide, dust, foam, sand or soil. Large fires: foam or water spray. These vehicles should only be used by suitably trained personnel. Other extinguishing gases (according to regulations).
Unsuitable extinguishing media	:	Do not use direct jets of water. These can cause splashing, and extend the fire. Avoid using foam and water on the same surface at the same time as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Flammable liquid and vapors.
Danger of explosion	:	The vapors can form an explosive mixture with air.
Hazardous combustion products in the event of fire	:	Incomplete combustion generates carbon monoxide, carbon dioxide and other toxic gases. Oxygenated compounds (aldehydes, etc.). Solid particulate matter. The products of combustion include sulphur oxides (SO2 and SO3) and hydrogen sulphide (H2S).

5.3. Recommendations for firefighters

Precautionary measures in the event of a fire	:	Cover any spills that have not caught fire with foam or soil.
Instructions for extinguishing	:	If possible, stop product leaks at the source. Remove containers from the fire zone if it can be done without personal hazard. Use water jets to cool surfaces and containers exposed to flame or heat. If the fire cannot be controlled, evacuate the area.
Protection during firefighting	:	Personal protective equipment for firefighters (see also section 8). In the event of a fire or in confined or poorly ventilated spaces, wear full flame retardant protective clothing and a self-contained respirator equipped with a full mask operating under positive pressure. EN 15090. EN 443. EN 469. EN 659.
Other information	:	In case of a fire, do not disperse wastewater, residual product and other contaminated materials, but collect separately and treat appropriately.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General measures	:	If safety conditions permit, stop or contain the leak at source. Eliminate all sources of ignition if safety conditions allow it (e.g.: electricity, sparks, fires, torches). Avoid direct contact with the released material. Stay upwind. Use only non-sparking tools. In the event of a large spill, warn the residents of areas downwind. If hazardous levels of hydrogen sulfide (H_2S) are suspected or confirmed in the spilled/released product, additional or specific actions may be necessary, such as restricted access, the use of specialized personal protective equipment (PPE), adoption of specific procedures, and dedicated personnel training.

6.1.1. For those who do not intervene directly

Means of protection	:	See section 8.
Emergency procedures	:	Remove uninvolved personnel from the spill area. Alert emergency teams. Except in the case of small payments, the feasibility of the interventions must always be evaluated and approved, if possible, by qualified and competent personnel responsible for managing the emergency.

6.1.2. For those who intervene directly

Means of protection	:	Minor spills: Normal anti-static workwear is generally appropriate. Major spills: Full chemical-resistant protective clothing made of antistatic material. Chemical-resistant work gloves, especially those offering protection against aromatic hydrocarbons. Gloves made of PVA (polyvinyl alcohol) are not water-resistant and are not suitable for emergency use. Antistatic, chemical-resistant and non-slip safety shoes or boots. Safety helmet. Protective goggles and/or face protection if splashing or eye contact is possible or foreseeable. Respiratory protection: A half-mask or full-face mask equipped with filter(s) for organic vapors (type A), or A+B filters where applicable for H_2S, or a self-contained breathing apparatus, depending on the extent of the spill and the anticipated level of exposure. If the situation cannot be fully assessed, or if there is a risk of oxygen deficiency, only use a self-contained breathing apparatus.
Emergency procedures	:	In the event of a large spill, alert residents in areas downwind. Notify the competent authorities in accordance with current regulations.

6.2. Environmental precautions

Do not allow the product to accumulate in confined spaces or below ground level. Do not allow the product to flow into sewers or waterways, or in any case to be dispersed into the environment. In the event of contamination of the environmental matrices (soil, subsoil, surface water and groundwater), remove the contaminated soil if possible and in any case treat the contaminated matrices in accordance with Legislative Decree 152/06 and subsequent amendments (and applicable local regulations). The site must be equipped with a plan for intervention in the event of spills, to ensure the existence of adequate safeguard measures to minimize the impact of sporadic releases.

6.3. Methods and materials for containment and remediation

Methods for containment	:	Absorb any spilled product with sand or soil. Large spills can be covered, with caution, with foam, if available, in order to prevent fire hazards. Inside buildings or confined spaces, ensure appropriate ventilation. Absorb spilled product with non-flammable materials. Collect the spilled product by suitable mechanical means. Transfer the product and other contaminated materials collected to appropriate tanks or containers for safe recycling or disposal. If it is necessary to store contaminated material for subsequent safe disposal, use only suitable containers (leak-proof, sealed, waterproof, earthed). If in water: In case of small spills in enclosed waters, contain the product using floating barriers or other devices. Collect the spilled product with specific floating absorbent materials. If possible, contain larger spills into the water by using floating barriers or other appropriate mechanical means. If this is not possible, check the spread level of the spilled product and collect the material using a skimmer or other mechanical means. Collect recovered product and other materials in appropriate tanks or containers, for safe recycling or disposal. Do not use solvents or dispersing agents, unless expressly indicated by an expert and, where required, authorized by the competent local authorities.
Other information	:	The recommended measures are based on the most likely spill scenarios for this product. Local conditions (wind, air temperature, direction and speed of waves and currents) can, however, significantly influence the choice of action to be taken. The concentration of H2S at the top of tanks or containers can reach dangerous values, particularly in the case of prolonged storage. This situation is particularly relevant for operations involving direct exposure to vapors inside tanks or other confined spaces. The pouring of a limited quantity of product, particularly in the open air where vapours disperse more quickly, is a dynamic situation that can presumably limit exposure to dangerous concentrations. Since H2S has a higher density than ambient air, a possible exception may be the accumulation of hazardous concentrations in specific places such as ditches, depressions or enclosed spaces. In all these circumstances, however, the assessment of the correct intervention to be adopted must be carried out on a case-by-case basis.

6.4. Reference to other sections

For more information, see section 8: "Exposure control-personal protection". For more information, see section 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Obtain specific instructions before use. Ensure that all provisions regarding handling and storage facilities for flammable products are properly complied with. Do not use electrical appliances (mobile phones, etc.) that are not approved for use, according to the risk characteristics of the area. Do not use compressed air when filling, draining, or handling. Keep away from heat sources/sparks/open flames/hot surfaces. Steam is heavier than air. Pay special attention to accumulation in wells and confined spaces. No smoking. Use and store only outside or in a well-ventilated place. During transfer and mixing operations, ensure proper grounding of equipment and avoid the accumulation of electrical charges. Ensure that the container, tanks and equipment for reception and transfer are grounded. Before accessing the storage tanks and starting any type of intervention in a confined space (e.g. tunnels), carry out adequate remediation, check the atmosphere and check the oxygen content, the degree of flammability, and the presence of sulfur compounds. Empty containers may contain combustible product residues. Do not puncture, cut, grind, weld, braze, burn, or incinerate unreclaimed empty containers or drums. The product can release hydrogen sulphide: carry out a specific assessment of the inhalation risks arising from the presence of hydrogen sulphide in tank spaces, confined spaces, product residues and surpluses, and in all unintentional release situations, to determine which are the best means of control according to local conditions.

Hygiene measures	:	Make sure that adequate housekeeping measures are taken. Use appropriate personal protective equipment if necessary. Keep away from food and drink. Do not breathe fumes/mists/vapors. Avoid contact with skin. Wash hands thoroughly after handling. Do not swallow. No smoking. Contaminated material must not accumulate in the workplace and should never be stored in pockets. Do not reuse clothing that is still contaminated. Prevent the risk of slipping. Keep work clothing separate from civilian clothing. Wash them separately. Wash hands and other areas of skin exposed to the substance with mild soap and water before eating, drinking, smoking and when leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	The electrical equipment and systems must have the appropriate safety features, depending on the specific risk characteristics of the area. Before accessing the storage tanks and starting any type of intervention in a confined space (e.g. tunnels), carry out adequate remediation, check the atmosphere and check the oxygen content and the degree of flammability.
Storage conditions	:	Store in a dry and well-ventilated place. Do not smoke. Store away from open flames, hot surfaces and sources of ignition. The vapours are heavier than air, and can propagate at ground level. Pay special attention to accumulation in wells and confined spaces.
Incompatible products	:	Store away from: strong oxidants.
Storage location	:	The structure of the storage area, the characteristics of the tanks, the equipment and the operating procedures must comply with the relevant legislation at European, national or local level. Storage facilities/areas must be equipped with appropriate systems to prevent soil and water contamination in the event of leaks or spills. The cleaning, inspection and maintenance of the internal structure of the storage tanks must be carried out by qualified and properly equipped personnel, as established by national, local, or company regulations. Before accessing the storage tanks and starting any type of intervention in a confined space (e.g. tunnels), carry out adequate remediation, check the atmosphere and check the oxygen content, the degree of flammability, and the presence of sulfur compounds.
Packaging and containers:	:	If the product is supplied in containers: Keep containers carefully closed and correctly labelled. Store only in the original container or in a container suitable for the type of product. Store away from the sun and other heat sources. Light hydrocarbon vapours may accumulate at the top of the containers. Open slowly to keep any pressure releases under control. Empty containers may contain flammable product residues. Do not weld, braze, drill, cut, or incinerate empty containers unless they have been properly cleaned/reclaimed.
Packaging Materials	:	For the production of containers or internal coatings, use approved material suitable for the use of the product. Use mild steel and stainless steel for containers and coatings. Some synthetic materials may not be suitable for containers or coatings based on the characteristics of the material and the intended uses. Check with the manufacturer for compatibility.

7.3. Special end-uses

See the list of identified uses and exposure scenarios in the annex to the safety data sheet.

SECTION 8: Exposure/Personal Protective Controls

8.1. Control parameters

8.1.1 National occupational and biological exposure limit values

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Belgium - Occupational exposure limit values	
OEL TWA	200 mg/m³ kerosene (petroleum)
Germany - Occupational exposure limit values (TRGS 900)	
AGW (OEL TWA)	350 mg/m³ kerosene (petroleum)
	50 ppm kerosene (petroleum)

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Ireland - Occupational exposure limit values	
OEL TWA	100 mg/m³ kerosene (petroleum)
Poland - Occupational exposure limit values	
NDS (OEL TWA)	100 mg/m³ kerosene (petroleum)
NDSCh (OEL STEL)	300 mg/m³ kerosene (petroleum)
Romania - Occupational exposure limit values	
OEL TWA	700 mg/m³
OEL STEL	1000 mg/m³
Spain - Occupational exposure limit values	
VLA-ED (OEL TWA)	200 mg/m³ kerosene (petroleum)
Switzerland - Occupational exposure limit values	
MAK (OEL TWA)	350 mg/m³ kerosene (petroleum)
	50 ppm kerosene (petroleum)
KZGW (OEL STEL)	700 mg/m³ kerosene (petroleum)
	100 ppm kerosene (petroleum)
USA - ACGIH - Occupational Exposure Limit Values	
ACGIH OEL TWA	100 mg/m³ kerosene (petroleum)

Cumene (98-82-8)	
EU - Indicative Occupational Exposure Limit Value (IOEL)	
IOEL TWA	100 mg/m³
	20 ppm
IOEL STEL	250 mg/m³
	50 ppm
France - Occupational exposure limit values	
VME (OEL TWA)	100 mg/m³
	20 ppm
VLE (OEL C/STEL)	250 mg/m³
	50 ppm
Germany - Occupational exposure limit values (TRGS 900)	
AGW (OEL TWA)	50 mg/m³
	10 ppm
AGW (OEL C)	200 mg/m³
AGW (OEL C) [ppm]	40 ppm
Italy - Occupational exposure limit values	
OEL TWA	100 mg/m³
	20 ppm

Cumene (98-82-8)	
OEL STEL	250 mg/m³
	50 ppm
Spain - Occupational exposure limit values	
VLA-ED (OEL TWA)	100 mg/m³
	20 ppm
VLA-EC (OEL STEL)	250 mg/m³
	50 ppm
United Kingdom - Occupational exposure limit values	
WEL TWA (OEL TWA)	125 mg/m³
	25 ppm
WEL STEL (OEL STEL)	375 mg/m³
	75 ppm

hydrogen sulfide (7783-06-4)	
EU - Indicative Occupational Exposure Limit Value (IOEL)	
Local name	Hydrogen sulphide
IOEL TWA	7 mg/m³
	5 ppm
IOEL STEL	14 mg/m³
	10 ppm
Regulatory reference	COMMISSION DIRECTIVE 2009/161/EU
Austria - Occupational exposure limit values	
MAK (OEL TWA)	7 mg/m³
	5 ppm
MAK (OEL STEL)	7 mg/m³
	5 ppm
Belgium - Occupational exposure limit values	
OEL TWA	2.3 mg/m³
	1.64 ppm
OEL STEL	5.61 mg/m³
	4 ppm
Denmark - Occupational exposure limit values	
OEL TWA	7 mg/m³
	5 ppm
OEL STEL	14 mg/m³
	10 ppm
Finland - Occupational exposure limit values	
HTP (OEL TWA)	7 mg/m³
	5 ppm
HTP (OEL STEL)	14 mg/m³

hydrogen sulfide (7783-06-4)	
	10 ppm
France - Occupational exposure limit values	
VME (OEL TWA)	7 mg/m³
	5 ppm
VLE (OEL C/STEL)	14 mg/m³
	10 ppm
Germany - Occupational exposure limit values (TRGS 900)	
AGW (OEL TWA)	7.1 mg/m³
	5 ppm
AGW (OEL C)	14,2 mg/m³
AGW (OEL C) [ppm]	10 ppm
Hungary - Occupational exposure limit values	
AK (OEL TWA)	7 mg/m³
CK (OEL STEL)	14 mg/m³
Ireland - Occupational exposure limit values	
OEL TWA	7 mg/m³
	5 ppm
OEL STEL	14 mg/m³
	10 ppm
Italy - Occupational exposure limit values	
Local name	Hydrogen sulfide
OEL TWA	7 mg/m³
	5 ppm
OEL STEL	14 mg/m³
	10 ppm
Regulatory reference	Annex XXXVIII of Legislative Decree No. 135 of 4 September 2024
Latvia - Occupational exposure limit values	
OEL TWA	7 mg/m³
	5 ppm
OEL STEL	14 mg/m³
	10 ppm
Netherlands - Occupational exposure limit values	
TGG-8u (OEL TWA)	2,3 mg/m³
	1,64 ppm
Poland - Occupational exposure limit values	
NDS (OEL TWA)	7 mg/m³
NDSCh (OEL STEL)	14 mg/m³
Romania - Occupational exposure limit values	
OEL TWA	7 mg/m³

hydrogen sulfide (7783-06-4)	
	5 ppm
OEL STEL	14 mg/m³
	10 ppm
Spain - Occupational exposure limit values	
VLA-ED (OEL TWA)	7 mg/m³
	5 ppm
VLA-EC (OEL STEL)	14 mg/m³
	10 ppm
Sweden - Occupational exposure limit values	
NGV (OEL TWA)	7 mg/m³
	5 ppm
KGV (OEL STEL)	14 mg/m³
	10 ppm
United Kingdom - Occupational exposure limit values	
WEL TWA (OEL TWA)	7 mg/m³
	5 ppm
WEL STEL (OEL STEL)	14 mg/m³
	10 ppm
Norway - Occupational exposure limit values	
Grenseverdi (OEL TWA)	7 mg/m³
	5 ppm
Korttidsverdi (OEL STEL)	14 mg/m³
	10 ppm
Switzerland - Occupational exposure limit values	
MAK (OEL TWA)	7.1 mg/m³
	5 ppm
KZGW (OEL STEL)	14,2 mg/m³
	10 ppm
USA - ACGIH - Occupational Exposure Limit Values	
ACGIH OEL TWA	1 ppm (ACGIH 2021)
ACGIH OEL STEL	5 ppm (ACGIH 2021)

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Monitoring procedures must be selected on the basis of indications established by the competent local authorities or national employment contracts. Refer to Legislative Decree 81/2008 and good industrial hygiene practices. UNI EN 482:2021: Exposure in the workplace - Procedures for determining the concentration of chemical agents - Basic performance requirements. UNI EN 689:2019: Exposure in the workplace - Measurement of exposure by inhalation to chemical agents - Strategy for verifying compliance with occupational exposure limit values.

8.1.3. Formation of Air Contaminants

Applicable OEL and BLV for air contaminants : May release : Hydrogen sulphide/rThis substance is a constituent of the product, and can be emitted as a pollutant.

8.1.4. DNEL and NECP

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	250 mg/m³ kerosene (petroleum)
Long-term - systemic effects, cutaneous	7,7 mg/kg body weight/day kerosene (petroleum)
Long-term - systemic effects, inhalation	50 mg/m³ kerosene (petroleum)
DNEL/DMEL (General Population)	
Long-term - systemic effects, oral	19 mg/kg body weight/day
Long-term - systemic effects, inhalation	10,66 mg/m³ kerosene (petroleum)
Long-term - systemic effects, cutaneous	1,64 mg/kg body weight/day kerosene (petroleum)
NECP (additional indications)	
Further information	Not applicable (UVCB)

Note : The derived no-effect level (DNEL) is a safe level of exposure derived from toxicological data in accordance with specific indications contained in the European REACH legislation. DNEL may differ from an occupational exposure limit value (OEL) for the same chemical. OELs may be recommended by an individual society, a state control body or an expert organisation such as the Scientific Committee on Occupational Exposure Limit Values (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered safe levels of exposure for a typical worker in a work environment for an 8-hour shift, with a 40-hour workweek, as either a time-weighted average concentration (TWA) or a short-term (15-minute) exposure limit (STEL). Although OELs are also considered to be health protection indicators, they are derived through a different process than REACH.

8.1.5. Control Band

Control band : No established

8.2. Exposure Controls

8.2.1. Appropriate Technical Controls

Appropriate Technical Controls:

Minimize exposure to mists/vapors/aerosols. Before accessing the storage tanks and starting any type of intervention in a confined space (e.g. tunnels), check the atmosphere and check the oxygen content, the presence of hydrogen sulfide (H2S) and SOx, and the degree of flammability.

8.2.2. Personal protective equipment

Personal protective equipment:

Protective visor. Gloves. Protective clothing. Safety glasses. Safety shoes.

Personal Protective Equipment symbol(s):

8.2.2.1. Eye and face protection

Eye Protection:

Wear safety goggles or face shield. ISO 16321-1

8.2.2.2. Skin protection

Skin and body protection:
Protective clothing (EN 14605 or EN 13034). EN ISO 20346. EN 1149-5. Contaminated clothing must be washed before reuse.

Hand protection:
If there is a possibility of contact with the skin, use hydrocarbon-resistant gloves, plush on the inside. Presumably suitable materials: nitrile (NBR) or PVC with a protection index of at least 5 (permeation time ≥240 min). The choice of glove material must take into account absorption over time, the rate of permeation and degradation. Use gloves in accordance with the conditions and limits set by the manufacturer. Replace gloves immediately if they show cuts, holes, or other signs of degradation. If necessary, refer to the UNI EN 374 standard. Personal hygiene is a fundamental element for effective hand care. Gloves should only be worn with clean hands. After using gloves, hands should be washed and dried perfectly.

Other skin protection
Protective clothing - choice of material:
Personnel must wear antistatic clothing made of natural fibers or synthetic fibers resistant to high temperature.

8.2.2.3. Respiratory protection

Respiratory protection:
Regardless of other possible actions (plant modifications, operating procedures and other means to reduce workers' exposure), the personal protective equipment that can be adopted as needed is indicated. In ventilated or outdoor environments: in the presence of mists and in case of handling of the product in the absence of suitable mist containment systems, use masks or half-masks with mist/aerosol filter (P). In case of significant presence of vapours (e.g. in case of high-temperature handling), use masks or half-masks with an organic vapour filter (A) and H2S (B), if applicable. (EN 136/140/145). Combined gas/dust respirator with filter type: EN 14387. In confined spaces (e.g. inside tanks): the adoption of respiratory protective devices (half masks, full-face masks, respiratory devices) must be evaluated according to the work activity, the duration and the foreseeable intensity of exposure. For the characteristics, refer to the Ministerial Decree 02/05/2001. If exposure levels cannot be determined or estimated with good certainty, or if oxygen deficiency may occur, use only a stand-alone respirator

8.2.2.4. Thermal hazards

Protection against thermal hazards:
None under normal use.

8.2.3. Environmental exposure controls

Environmental exposure controls:
Do not dispose of the product in the environment. Storage facilities/areas must be equipped with appropriate systems to prevent soil and water contamination in the event of leaks or spills. Prevent the release of undissolved substances into or recover from wastewater. Do not distribute the sludge generated by industrial water treatment on natural soils. Sludge generated by industrial water treatment must be incinerated, kept under containment or treated.
Limitation and control of consumer exposure:
No special protection is required if adequate ventilation is provided.

SECTION 9: Physical and Chemical Properties

9.1. Information on fundamental physical and chemical properties

Physical state	:	Liquid
Color	:	Characteristic.
Appearance	:	Clear liquid.
Odour	:	Similar to oil.
Olfactory threshold	:	Lack of data in the literature - Data not available
Melting Point	:	Not applicable
Freezing point	:	-49 – -20 °C
Boiling point	:	90 – 300 °C (EN ISO3405 and ASTM D-86)
Inflammability	:	Flammable liquid and vapors.
Explosive properties	:	None.
Oxidizing properties	:	None.
Lower explosive limit	:	1,16 vol %
Upper explosive limit	:	6 vol %
Flash point	:	> 23 – < 60 °C (EN ISO 2719, 13736, ASTM D 93-02a)
Auto-ignition temperature	:	220 – 250 °C (ASTM E659)
Decomposition Temperature	:	Lack of data in the literature - Data not available
ph	:	Lack of data in the literature - Data not available
Viscosity, kinematics	:	1 – 2,4 mm²/s (40 °C) (ISO 3104, ASTM D 445)
Dynamic viscosity	:	Lack of data in the literature - Data not available

Solubility	:	The product is not soluble in water. Water: Non-miscible and insoluble
Partition coefficient n-octanol/water (Log Kow)	:	Not applicable (UVCB)
N-octanol/water partition coefficient (Log Pow)	:	Not applicable (UVCB)
Vapour pressure	:	1 – 21 kPa (37.8 °C) (EN 13016-1)
Vapour pressure at 50°C	:	Lack of data in the literature - Data not available
Density	:	0,75 – 0,86 g/cm³ (15°C) (ASTM D-4052 and EN ISO 12185)
Relative Density	:	Lack of data in the literature - Data not available
Relative vapor density at 20°C	:	Lack of data in the literature - Data not available
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information on classes of physical hazards

No further information available

9.2.2. Other security features

Relative evaporation rate (butylacetate=1)	:	Lack of data in the literature - Data not available

SECTION 10: Stability and Responsiveness

10.1. Responsiveness

This substance does not present any additional reactivity hazards than those listed in the following subheadings.

10.2. Chemical Stability

Stable product in relation to its intrinsic characteristics.

10.3. Possibility of dangerous reactions

Dangerous reactions (under normal storage and handling conditions) are not to be expected. Contact with strong oxidants (such as peroxides and chromates) may cause a fire hazard. Sensitivity to heat, friction and shock cannot be assessed in advance.

10.4. Conditions to be avoided

Store away from open flames, hot surfaces and ignition sources. Avoid the accumulation of electrostatic charges. Do not smoke.

10.5. Incompatible Materials

Oxidizing agents.

10.6. Hazardous decomposition products

Under normal storage and use conditions, no hazardous decomposition products should be created. Thermal decomposition can produce: Toxic fumes. The product can release hydrogen sulphide: carry out a specific assessment of the inhalation risks arising from the presence of hydrogen sulphide in tank spaces, confined spaces, product residues and surpluses, and in all unintentional release situations, to determine which are the best means of control according to local conditions.

SECTION 11: Toxicological information

11.1. Information on hazard classes defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	:	Unclassified (Final data but not sufficient for classification)
Acute toxicity (cutaneous)	:	Unclassified (Final data but not sufficient for classification)
Acute toxicity (inhalation)	:	Not classified (Based on the available data, the classification criteria are not met)

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
DL50 oral rat	> 5000 mg/kg body weight (OECD 420; API, 1980; ARCO 1992)
DL50 Skin Rabbit	> 2000 mg/kg (OECD 402; ARCO, 1992)

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
CL50 Inhalation - Rat	> 5,28 mg/l/4h (OECD 403; ARCO 1991)
Acute Toxicity, Pharyngeal Probe, Acute, Oral, Rat, Male, Female, Systemic	> 5000 mg/kg ((EPA OTS 798.1175), (CAS 68333-23-3) (ARCO (Atlantic Richfield Company) 1992a))
Acute, Acute, Inhalation, Rat, Male, Female, Systemic Toxicity	> 5,28 mg/l (4 h, (OECD 403), (CAS 8008-20-6) (American Petroleum Institute (API) 1987a))
Acute Toxicity, Occlusive, Acute, Dermal, Rabbit, Systemic	> 2000 mg/kg ((OECD 402, EPA OTS 798.1100), (CAS 68333-23-3, ARCO (Atlantic Richfield Company) 1982g))

Cumene (98-82-8)	
DL50 oral rat	2260 – 2700 mg/kg
DL50 Skin Rabbit	> 3160 mg/kg body weight

hydrogen sulfide (7783-06-4)	
CL50 Inhalation - Rat [ppm]	> 350 ppm/4h
CL50 Inhalation - Rat (Dust/Mist)	621 mg/l/4h (Union Carbide, 1981) ECHA Website, 2015)

Skin corrosion/skin irritation : Causes skin irritation.
pH: Lack of data in the literature - Data not available

Further information : Based on experimental data: Rabbit, Skin irritation (OECD 404) (Shell, 1991a)
Causes skin irritation.
Repeated and prolonged contact can cause skin redness, irritation and contact dermatitis due to degreasing effect.

Severe eye damage/eye irritation : Unclassified (Final data but not sufficient for classification)
pH: Lack of data in the literature - Data not available

Further information : Based on experimental data: Rabbit, Non-irritating
Non-irritating to the eyes
(OECD 405) (ARCO, 1990)

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Eye irritation, on rabbit	(CAS 68333-23-3, EPA OTS 798.4500, ARCO 1992n)
Further information	Key study

Respiratory or skin sensitization : Unclassified (Final data but not sufficient for classification)

Further information : Based on test data not sensitizing.

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Skin sensitization, Guinea pig	(CAS 68333-23-3, EPA OTS 798.4100, OECD 406, ARCO 1992q)
Further information	Key study

Germ cell mutagenicity : Unclassified (Final data but not sufficient for classification)

Further information : Based on experimental data: Mutagenicity tests gave negative results.

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Germ cell mutagenicity, S. typhimurium TA98	50 µl/mL (CAS 64742-81-0, ASTM E1687mod, Mobil 1991)
Germ cell mutagenicity, S. typhimurium TA98	50 µL/mL (CAS 8008-20-6, ASTM E1687mod, Mobil 1991)
Germ cell mutagenicity, Hamster	0,007; 0,013; 0,025; 0,05 µl/ml (without metabolic activation) 0,05; 0,1; 0,2; 0,4 µl/ml (with metabolic activation (CAS 64742-81-0, OECD 479, API 1988a)
Chromosomal aberration test, rat, male, female, intraperitoneal	0; 0,3; 1,0; 3,0 g/kg (CAS 8008-20-6, OECD 475, API 1985c)
Chromosomal aberration test, rat, male, female, intraperitoneal	0,3; 1,0; 3,0 g/kg (CAS 64741-81-0, OECD 475, API 1984b)
Further information	In vitro. Key study In vivo. Key study

Carcinogenicity : It can cause cancer.

Further information : This product contains : cumene Concentration (%) >= 0.1% < 1%May cause cancer.
Based on experimental data: (OECD 451)
Carcinogenicity, Neoplastic effects, mouse, male: 50 µL (24 months, 2 times a week, (CAS 8008-20-6, API 1989a))

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Carcinogenicity, Neoplastic effects, mouse, male, female	50 ul (half lifespan, 2 times a week, (CAS 64742-81-0, OECD 451, API 1989b))

Reproductive toxicity : Unclassified (Final data but not sufficient for classification)

Further information : Based on experimental data: No teratogenic effect, (OECD 414)

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
NOAEL (Animal/Male, F0/P)	≥ 3000 mg/kg
NOAEL (animal/female, F0/P)	≥ 1500 mg/kg
NOAEL (Animal/Male, F1)	750 mg/kg
Reproductive toxicity, rat, male, Pharyngeal tube.	750; 1500; 3000 mg/kg/day (70-90 days, (JP-8 jet fuel, Mattie, D.R, Marit, G.B, Cooper, J.R, Sterner, T.R, Flemming, C.D.(2000)))
Reproductive toxicity, rat, female, Pharyngeal tube.	325; 750; 1500 mg/kg/day (21 weeks, (JP-8 jet fuel, Mattie, D.R, Marit, G.B, Cooper, J.R, Sterner, T.R, Flemming, C.D.(2000)))
Developmental toxicity/teratogenicity, rat, Pharyngeal tube.	500; 1000; 1500; 2000 mg/kg (10 days, (OECD 414) (Cooper, J.R,Mattie, D.R. (1996)))
Developmental toxicity/teratogenicity, Inhalation, rat	106; 364 ppm (6 h, Daily dose, (CAS 8008-20-6) (OECD 414) (API 1979b)) NOAEC ≥ 364 ppm
Further information	(NOAEL, embryotoxic) 1000 mg/kg/d. (LOAEL, embryotoxic) 1500 mg/kg/d. (NOAEL, General Maternal Toxicity) 500 mg/kg/d. (LOAEL, General Maternal Toxicity) 1000 mg/kg/d. Key study

Specific Target Organ Toxicity (STOT) — single exposure : It can cause drowsiness or dizziness.

Cumene (98-82-8)	
Specific Target Organ Toxicity (STOT) — single exposure	It can irritate the respiratory tract.

Specific Target Organ Toxicity (STOT) — repeated exposure : Unclassified (Final data but not sufficient for classification)

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
LOAEL (dermal, rat/rabbit, 90 days)	0.01 mg/kg bw/day (mL/kg; 21/28d; CAS 68333-23-3; ARCO 1992v)
LOAEC (inhalation, rat, vapour, 90 days)	500 mg/l (Mattie, D.R., Alden, C.L., Newell, T.K., Gaworski, C.L., Flemming, C.D. (1991) (OECD 413)
NOAEL (dermal,rat/rabbit,28 days)	≥ 0.5 mg/kg body weight/day (mL/Kg; 21/28d; CAS 68333-23-3) (ARCO 1992v)
NOAEC (inhalation,rat,vapor,28 days)	≥ 24 mg/l (CAS 64741-81-0) (API 1986) (OECD 412)
NOAEL (oral,rat,90 days)	750 mg/kg bw/day (Mattie, D.R., Marit, G.B., Cooper, J.R., Sterner, T.R., Flemming, C.D. (2000)
NOAEC (inhalation,rat,vapour,90 days)	≥ 1000 mg/l (Mattie, D.R., Alden, C.L., Newell, T.K., Gaworski, C.L., Flemming, C.D.(1991) (OECD 413)

hydrogen sulfide (7783-06-4)	
LOAEC (inhalation, rat, gas, 90 days)	30,5 – 80 ppmv/6h/day
NOAEC (inhalation, rat, gas, 90 days)	10,1 – 30,5 ppmv/6h/day

Danger in the event of suction : It can be fatal if swallowed and penetrated into the respiratory tract.

Further information : For all petroleum products with a viscosity of less than 20.5 mm2/s at 40 °C, a specific risk is related to the aspiration of the liquid into the lungs, which can occur directly following ingestion, or subsequently in the event of vomiting, spontaneous or provoked.
In this case, chemical pneumonia can occur, a condition that requires medical treatment and can be fatal.
Aspiration into the lungs can cause chemical pneumonia

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Viscosity, kinematics	1 – 2,4 mm²/s (40 °C) (ISO 3104, ASTM D 445)
Hydrocarbon	Yes

Cumene (98-82-8)	
Viscosity, kinematics	0,74 mm²/s

11.2. Information on other hazards

11.2.1. Endocrine Disrupting Properties

Adverse Health Effects Caused by Endocrine-Disrupting Properties : Nobody. The substance is not included in the list established in accordance with Article 59(1) of REACH for possession of endocrine disrupting properties, or is not identified as having endocrine disrupting properties according to the criteria established by Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

11.2.2. Other information

Possible harmful effects on humans and possible symptoms : It can cause cancer. Causes skin irritation. Repeated and prolonged contact may cause redness of the skin. irritation and contact dermatitis for degreasing effect. It can cause drowsiness or dizziness. Aspiration into the lungs can cause chemical pneumonia. It can be fatal if swallowed and penetrated into the respiratory tract. Avoid contact with eyes, skin and clothing.

Other information : None

SECTION 12: Ecological Information

12.1. Toxicity

Ecology - general : Toxic to aquatic organisms, it can cause long-term negative effects for the aquatic environment. Dispersion into the environment can lead to the contamination of environmental matrices (air, soil, subsoil, surface water and groundwater). Use according to good working practice, avoiding dispersing the product into the environment. Inform the authorities if the product is discharged into the sewer system or public waters.

Ecology - air : The product has a low vapor pressure. Exposure is only possible in special cases (use at high temperatures, or for operations that cause splashes or mists).

Ecology - water : Toxic to aquatic organisms.

Hazardous to the aquatic environment, short-term (acute) : Unclassified (Final data but not sufficient for classification)

Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic organisms with long-lasting effects.

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
CL50 - Fish [1]	2 – 5 mg/l LL50, 96 h (NOEL = 2 mg/l) (Oncorhynchus mykiss, OECD 203) (Shell 1994)
EC50 - Crustaceans [1]	1,4 mg/l EL50, 48 h (NOEL = 0.3 mg/l) (OECD 202) (CAS 64741-81-0) (Exxon 1995d)
EC50 - Crustaceans [2]	4,6 mg/l EL50, 24 h; (OECD 202) (CAS 64741-81-0) (Exxon 1995d)
CE50 72h - Algae [1]	1 – 3 mg/l (Pseudokirchnerella subcapitata) (CAS 64742-94-5) (OECD 201) (Shell 1994)
CE50 72h - Algae [2]	10 – 30 mg/l (Pseudokirchnerella subcapitata) (CAS 64742-81-0) (OECD 201) (Shell 1995)
CE50 96h - Algae [1]	1 – 3 mg/l (24-48h) (Pseudokirchnerella subcapitata) (CAS 64742-94-5) (OECD 201) (Shell 1994)
CE50 96h - Algae [2]	> 30 mg/l (24-48h) (Pseudokirchnerella subcapitata) (CAS 64742-81-0) (OECD 201) (Shell 1995)
LOEC (chronic)	0,48 mg/l (21d, CAS 64742-82-0) (OECD 211) (ExxonMobil 2010)
NOEC (acute)	= 1 mg/l NOEL, 72 h (Raphidocelis subcapitata, OECD 201) (Girling et Cann, 1996)
NOEC (chronic)	1,2 mg/l (21d, CAS 64742-82-0) (OECD 211) (ExxonMobil 2010)
NOEC chronic algae	1 – 10 mg/l (24-48h) (Pseudokirchnerella subcapitata) (Shell 1994-1995)

Cumene (98-82-8)	
CL50 - Fish [1]	4,7 mg/l (Cyprinodon variegatus)
CL50 - Fish [2]	4,8 mg/l (Oncorhynchus mykiss)
EC50 - Crustaceans [1]	2,14 mg/l (Daphnia magna)
CE50 72h - Algae [1]	2,01 mg/l (Desmodesmus subspicatus)
CE50 72h - Algae [2]	1,29 mg/l (Desmodesmus subspicatus)
NOEC (chronic)	0,35 mg/l (Daphnia magna; 21 d)
NOEC Chronic Fish	0,38 mg/l (28 d)

hydrogen sulfide (7783-06-4)	
CL50 - Fish [1]	0,019 – 0,037 mg/l (Lepomis macrochirus)
EC50 - Crustaceans [1]	0,12 mg/l (Küster E, Dorusch F and Altenburger R)

hydrogen sulfide (7783-06-4)	
ErC50 algae	1,87 mg/l (24h, Küster E, Dorusch F and Altenburger R)

12.2. Persistence and degradability

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Persistence and degradability	The main constituents of the product are to be considered "inherently" biodegradable, but not "readily" biodegradable: therefore they can be moderately persistent, particularly in anaerobic conditions.

Cumene (98-82-8)	
Persistence and degradability	Quickly degradable

hydrogen sulfide (7783-06-4)	
Persistence and degradability	Easily biodegradable.
Biodegradation	76 % (48h)

12.3. Bioaccumulation potential

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
N-octanol/water partition coefficient (Log Pow)	Not applicable (UVCB)
Partition coefficient n-octanol/water (Log Kow)	Not applicable (UVCB)
Bioaccumulation potential	The test methods for this endpoint are not applicable to UVCB substances.

hydrogen sulfide (7783-06-4)	
N-octanol/water partition coefficient (Log Pow)	0,45
Bioaccumulation potential	Unavailable.

12.4. Mobility in soil

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Ecology - soil	The test methods for this endpoint are not applicable to UVCB substances.

hydrogen sulfide (7783-06-4)	
Ecology - soil	Unavailable.

12.5. Results of the PBT and vPvB assessment

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)
This substance/mixture does not meet the PBT criteria of the REACH Regulation, Annex XIII
This substance/mixture does not meet the vPvB criteria of the REACH Regulation, Annex XIII

Component	
Substance(s) that does not meet the PBT criteria of the REACH Regulation, in accordance with Annex XIII	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0), hydrogen sulfide (7783-06-4)(1)
Substance(s) that does not meet the vPvB criteria of REACH, in accordance with Annex XIII	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0), hydrogen sulfide (7783-06-4)(1)

(1) Substance(s) in a concentration of less than 0,1% and indicated on a voluntary basis

12.6. Endocrine Disrupting Properties

Adverse effects on the environment caused by endocrine-disrupting properties : Endocrine-disrupting properties (Article 57(f), environment): None known. The substance is not included in the list established in accordance with Article 59(1) of REACH for possession of endocrine disrupting properties, or is not identified as having endocrine disrupting properties according to the criteria established by Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

Other adverse effects : Nobody.

kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] (64742-81-0)	
Other information	This product has no specific characteristics of inhibition of bacterial cultures. In any case, the water contaminated by the product must be treated in purification plants suitable for the purpose.

hydrogen sulfide (7783-06-4)	
Other information	This product has no specific characteristics of inhibition of bacterial cultures. In any case, the water contaminated by the product must be treated in purification plants suitable for the purpose.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Waste treatment methods : Do not dump the product, whether new or used, into sewers, tunnels or waterways. Collect and deliver to authorized collectors (Legislative Decree 152/2006 and related regulations).

Recommendations for disposal in sewers : Do not distribute the sludge generated by industrial water treatment on natural soils. Sludge generated by industrial water treatment must be incinerated, kept under containment or treated.

Advice for the disposal of the Product/Packaging : European Waste Catalogue (Decision 2001/118/EC) code(s): 13 07 03* ("other fuels (including mixtures)"). The EWC code indicated is only a general indication, based on the original composition of the product and its intended use. The user has the final responsibility to choose the most appropriate EWC code, based on the actual use of the product and any alterations or contamination.

Further information : Empty containers may contain combustible product residues. Do not puncture, cut, grind, weld, braze, burn, or incinerate unreclaimed empty containers or drums.

About Green Waste : The product as such does not contain halogenated compounds.

European List of Wastes (LoW, EC 2150/2002) : 13 07 03* - Other fuels (including mixtures)

SECTION 14: Transportation Information

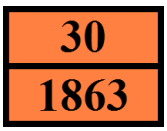
In accordance with: ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	DNA	RID
14.1. UN number or ID number				
A 1863	A 1863	A 1863	A 1863	A 1863
14.2. Official UN transport designation				
AVIATION TURBINE ENGINE FUEL	FUEL, AVIATION, TURBINE ENGINE	Fuel, aviation, turbine engine	FUEL FOR AIRCRAFT TURBINE ENGINES	AVIATION TURBINE ENGINE FUEL
Description of the transport document				
An 1863 AIRCRAFT TURBINE ENGINE FUEL, 3, III, (D/E), HAZARDOUS TO THE ENVIRONMENT	A 1863 FUEL, AVIATION, TURBINE ENGINE, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS	UN 1863 Fuel, aviation, turbine engine, 3, III, ENVIRONMENTALLY HAZARDOUS	An 1863 FUEL FOR AIRCRAFT TURBINE ENGINES, 3, III, HAZARDOUS TO THE ENVIRONMENT	An 1863 AIRCRAFT TURBINE ENGINE FUEL, 3, III, HAZARDOUS TO THE ENVIRONMENT
14.3. Transport hazard classes				
3	3	3	3	3
				
14.4. Packaging group				
III	III	III	III	III
14.5. Hazards to the environment				
Hazardous to the environment: Yes	Hazardous to the environment: Yes Marine pollutant: Yes EmS No. (Fire): F-E EmS No.: S-E	Hazardous to the environment: Yes	Hazardous to the environment: Yes	Hazardous to the environment: Yes
No further information available				

14.6. Special precautions for users

Ground transport

Transport Regulations (ADR) : Subject to the provisions
Classification Code (ADR) : F1
Special Provisions (ADR) : 664
Limited quantities (ADR) : 5L
Exempt quantities (ADR) : E1
Transport category (ADR) : 3
Hazard identification number (n°. Kemler) : 30
Orange panel :



Tunnel Restriction Code (ADR) : D/E
EAC Code : 3Y

Sea transport

Transport Regulations (IMDG) : Subject to the provisions
Special Provisions (IMDG) : 223
Limited quantities (IMDG) : 5 L
Exempt quantities (IMDG) : E1

IBC Packaging Instructions (IMDG)	:	IBC03
Stowage category (IMDG)	:	A
Properties and Observations (IMDG)	:	Immiscible with water.

Air transport

Transport Regulations (IATA)	:	Subject to the provisions
Exempt passenger and cargo aircraft quantities (IATA)	:	E1
Max. net quantities of limited passenger and cargo aircraft (IATA)	:	10L
Max. net quantities per passenger and cargo aircraft (IATA)	:	60L
Max. net cargo air quantity (IATA)	:	220L
Special Provisions (IATA)	:	A3
ERG Code (IATA)	:	3L

River transport

Transport Regulations (ADN)	:	Subject to the provisions
Classification Code (ADN)	:	F1
Limited quantities (ADN)	:	5 L
Exempt quantities (ADN)	:	E1
Required Equipment (ADN)	:	PP, EX, A
Ventilation (ADN)	:	VE01

Transport by rail

Transport Regulations (RID)	:	Subject to the provisions
Classification Code (RID)	:	F1
Limited quantities (RID)	:	5L
Exempt quantities (RID)	:	E1
Packing Instructions (RID)	:	P001, IBC03, LP01, R001
Provisions on common packaging (RID)	:	MP19
Instructions for transport in mobile tanks and bulk containers (RID)	:	T2
Special Provisions Mobile Tanks and Bulk Transport Containers (RID)	:	TP1
Tank codes for RID tanks (RID)	:	LGBF
Transport category (RID)	:	3
Special Transport Regulations - Parcels (RID)	:	W12
Express parcels (RID)	:	CE4
Hazard Identification Number (RID)	:	30

14.7. Bulk shipping in accordance with IMO acts

IBC Code : Not applicable (refer to Annex I to MARPOL).

SECTION 15: Regulatory Information

15.1. Laws and regulations on health, safety and the environment specific to the substance or mixture

15.1.1. EU Regulations

Additional Rules, Restrictions and Legal Requirements : Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (et sequens). 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens). Substances that deplete the ozone layer (1005/2009) - Annex I substances (ODP). POP (2019/1021) - Persistent organic pollutants. EU Regulation (649/2012) - Export and Import of Hazardous Chemicals (PIC). Commission Delegated Regulation (EU) 2017/2100. Commission Regulation (EU) 2018/605.

REACH Annex XVII (List of Restrictions)

List of EU restrictions (Annex XVII of REACH)		
Reference code	**Applicable on**	**Entity title or description**
3(a)	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] ; Cumene	Substances or mixtures that meet the criteria for one of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 Types A to F
3(b)	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] ; Cumene	Substances or mixtures that meet the criteria for one of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or development, 3.8 effects other than narcotic effects, 3.9 and 3.10

List of EU restrictions (Annex XVII of REACH)		
Reference code	**Applicable on**	**Entity title or description**
3(c)	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] ; Cumene	Substances or mixtures that meet the criteria for one of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
28.	Cumene	Substances classified as carcinogenic category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and listed in Appendix 1 or Appendix 2 respectively.
40.	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).]	Substances classified as Category 1 or 2 flammable gases, Category 1, 2 or 3 flammable liquids, Category 1 or 2 flammable solids, substances and mixtures that emit Category 1, 2 or 3 flammable gases when in contact with water, Category 1 pyrophoric liquids or Category 1 pyrophoric solids, even if they are not listed in Annex VI, Part 3 of Regulation (EC) No 1272/2008.

Annex XIV REACH (List of authorisations)

Not listed in Annex XIV of REACH (list of authorisations)

List of substances included in the "Candidate List" of the REACH Regulation (SVHC)

Does not contain any substances listed on the REACH Candidate List

PIC Regulation (Subject to Informed Consent)

Not included in the PIC list (EU Regulation 649/2012)

Regulation on POPs (Persistent Organic Pollutants)

Not on the POP list (EU Regulation 2019/1021)

Ozone Regulation (2024/590)

Not listed on the ozone depletion list (EU Regulation 2024/590)

Council Regulation (EC) on the control of dual-use items

Does not contain a substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Seveso Directive (disaster risk reduction)

Seveso Further information : Seveso Category: P5c

Explosives Precursors Regulation (2019/1148)

It does not contain any substances listed in the list of explosives precursors (Regulation EU 2019/1148 as regards the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Does not contain substances listed in the list of drug precursors (Regulation (EC) 273/2004 on the manufacture and placing on the market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National rules

Legislative Decree 81/2008, relating to the "Implementation of art. 1 of the law of 3 August 2007, on the protection of health and safety in the workplace."
Legislative Decree 105/2015 (adoption of Directive 2012/18/EC for the control of major-accident hazards related to certain dangerous substances).
Legislative Decree 152/06 : "Environmental regulations", and subsequent amendments and additionsD. Lgs 151/2001 (Consolidated Law on the protection and support of maternity and paternity)

France

Occupational diseases	
Code	Description
RG 36 BIS	Cancerous conditions caused by the following petroleum derivatives: poorly or unrefined mineral oils and regenerated mineral oils used in machining and metalworking operations, aromatic extracts, cracking residues, waste oils, and oils and soot produced by combustion
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated or cyclic aliphatic liquid hydrocarbons and mixtures thereof; halogenated liquid hydrocarbons; nitrate derivatives of aliphatic hydrocarbons; alcohols; glycols, glycols ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamide; acetonitrile and propionitrile; pyridine; dimethyl sulfone and dimethyl sulfoxide

Germany

Employment restrictions : Employment bans or restrictions for the protection of young people in the workplace in accordance with § 22 JArbSchG in the case of the formation of dangerous substances must be observed.
The prohibitions and restrictions in accordance with § 4 and §5 MuSchArbV must be observed.

National Laws and Recommendations : TRGS 400: Risk assessment for activities with hazardous substances.
TRGS 401: Risks arising from skin contact - identification, evaluation, measurements.
TRGS 402: Identification and Risk Assessment from Hazardous Substance Activities: Inhalation Exposure.
TRGS 500: Protective measures.
TRGS 510: Storage of hazardous substances in non-fixed tanks.
TRGS 555: Work instructions and information for workers.
TRGS 800: Fire protection measures.
TRGS 900: Occupational exposure limits.
TRGS 905: List of mutagenic, carcinogenic or teratogenic substances.
TRGS 910: Measures of the Related Risk Concept for Activities Involving Carcinogenic Hazardous Substances.

Water hazard class (WGK) (D) : WGK 1, which is slightly polluting to water (The classification is carried out on the basis of the Ordinance on Structures for the Handling of Substances Hazardous to Water (Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV)) of 18 April 2017 (BGBl 2017, Teil I, Nr. 22, Seite 905).; ID No. 9167).

WGK note : The classification is carried out on the basis of the Ordinance on Structures for the Handling of Substances Hazardous to Water (Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV)) of 18 April 2017 (BGBl 2017, Teil I, Nr. 22, Seite 905).

Storage class (LGK, TRGS 510) : LGK 3 - Flammable liquids.

Joint Storage Table	:	

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not allowed for	:	LGK 1, LGK 2A, LGK 4.1A, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1C, LGK 5.2, LGK 6.1B, LGK 6.2, LGK 7.
Joint storage with restrictions allowed for	:	LGK 5.1B, LGK 6.1D, LGK 11, LGK 10-13.
Joint storage allowed for	:	LGK 2B, LGK 3, LGK 6.1A, LGK 6.1C, LGK 8A, LGK 8B, LGK 10, LGK 12, LGK 13.
Chemical Ban Ordinance (ChemVerbotsV)	:	This product is subject to Annex 2 of ChemVerbotsV, entry 1. The following requirements must be observed: authorization requirement (according to § 6 paragraph 1 sentence 1), basic requirements for the execution of the delivery (according to § 8 paragraphs 1, 3 and 4), identification and documentation (according to § 9 paragraphs 1 to 3) and exclusion of the shipping route (according to § 10).
Ordinance on Dangerous Accidents (12. BImSchV)	:	It is not subject to the Ordinance on Dangerous Accidents (12. BImSchV)

Holland

ABM Category	:	Z(2) - biodegradable substances with properties hazardous to humans and the environment (carcinogenicity/mutagenicity/reprotoxicity/potential for bioaccumulation or toxicity)
SZW-lijst van kankerverwekkende stoffen	:	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] is listed
SZW-lijst van mutagene stoffen	:	kerosene (petroleum), hydrodesulphide; kerosene — unspecified; [A complex combination of hydrocarbons obtained from a stock of petroleum by treating it with hydrogen to transform organic sulfur into hydrogen sulfide which is eliminated. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C16 and boiling points in the range of approx. 150 °C to 290 °C. (302 °F to 554 °F).] is listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	:	The substance is not listed

Denmark

Fire risk class	:	Class III-1
Storage units	:	50 liter
Comments on classification	:	Flammable according to the Danish Ministry of Justice; For storage of flammable liquids follow emergency management guidelines
Danish National Regulations	:	Young people under 18 years of age are not allowed to use the product Pregnant/breastfeeding women working with the product should not be in direct contact with it The requirements of the Danish Occupational Safety Authority regarding work with carcinogens must be followed during use and disposal

Switzerland

Storage class (LK)	:	LK 3 - Flammable liquids
Chemicals Ordinance (ChemO, SR 813.11)	:	Group 1

15.2. Chemical Safety Assessment

A chemical safety assessment was carried out.

SECTION 16: Other Information

Indications of changes:

EU SDS format according to COMMISSION REGULATION (EU) 2020/878. All sections.

Abbreviations and acronyms:	
	N/A = not available
	N/A = not applicable
DNA	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IS	Estimation of acute toxicity
BCF	Bioconcentration factor
CAS Number	Chemical Abstract Service (CAS) Number
CLP	Regulation on classification, labelling and packaging; Regulation (EC) No 1272/2008
DMEL	Derived level with minimal effects
DNEL	Derived level with no effect
EC number	EC Number (European Community)
EC50	Effective concentration for 50% of the population tested (median effective concentration)
AND	Endocrine Disruptor
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
IOELV	Indicative Occupational Exposure Limit Value
LC50	Lethal concentration for 50% of the tested population (median lethal concentration)
LD50	Lethal dose resulting in the death of 50% of the tested population (median lethal dose)
LOAEC	Lowest concentration at which an adverse effect is observed
LOAEL	Lowest level at which an adverse effect is observed
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
N.A.S.	Not otherwise specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent, bioaccumulative and toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No 1907/2006
RID	Regulation on the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage Treatment Plant
TRGS	Technical Rules for Hazardous Substances
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative
WGK	Water Hazard Class

Data Sources	:	Chemical safety assessment. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (et sequens). 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens).
Training tips	:	Provide appropriate training to professional operators in the use of Personal Protective Equipment (PPE), based on the information contained in this Safety Data Sheet.
Other information	:	Do not use the product for purpose not specified by the manufacturer. If hydrogen sulfide (H2S) inhalation is suspected, rescuers must wear suitable respiratory equipmentharnesses, and safety ropes, and follow established emergency procedures. Transfer the injured person to a hospital immediately. Immediately begin artificial respiration if breathing has stopped. Administer oxygen if necessary. This warning is particularly relevant for operations involving direct exposure to vapors inside tanks or other confined spaces.

Full text of the H and EUH hazard statements:	
Acute Tox. 2 (by inhalation)	Acute toxicity (by inhalation), category 2
Aquatic Acute 1	Hazardous to the aquatic environment – Acute hazard, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic hazard, category 2
Asp. Tox. 1	Aspiration hazard, category 1
Carc. 1B	Carcinogenicity, category 1B
Flam. Gas 1A	Flammable gases, category 1A
Flam. Liq. 3	Flammable liquids, category 3
Press. Gas	Gas under pressure
Skin Irrit. 2	Skin corrosion/irritation, category 2
STOT SE 3	Specific Target Organ Toxicity – Single Exposure, Category 3 – Narcosis
H220	Highly flammable gas.
H226	Flammable liquid and vapors.
H304	It can be fatal if swallowed and penetrated into the respiratory tract.
H315	Causes skin irritation.
H330	Lethal if inhaled.
H335	It can irritate the respiratory tract.
H336	It can cause drowsiness or dizziness.
H350	It can cause cancer.
H400	Very toxic to aquatic organisms.
H411	Toxic to aquatic organisms with long-lasting effects.

Full text of the descriptors of use	
ERC1	Substance Manufacture
ERC2	Formulation of mixtures
ERC3	Solid matrix formulation
ERC4	Industrial use of non-reactive processing aids (without inclusion inside or on the surface of the article)
ERC5	Industrial use resulting in inclusion in or on the surface of an item
ERC6a	Use of intermediates

Full text of the descriptors of use	
ERC6b	Industrial use of reactive processing aids (without inclusion inside or on the surface of the article)
ERC6c	Industrial use of monomers in polymerization processes (with or without inclusion inside or on the surface of the article)
ERC6d	Industrial use of reaction process regulators in polymerization (with or without inclusion in or on the surface of an article)
ERC7	Industrial use of functional fluids
ERC9a	Generalized use of functional fluids (indoor use)
ERC9b	Generalized use of functional fluids (outdoors)
ESVOC SPERC 1.1b.v1	Distribution: Industrial (SU3)
ESVOC SPERC 2.2.v1	Formulation and packaging of preparations and mixtures: industrial (SU10)
ESVOC SPERC 7.12a.v1	Use as fuel: industrial (SU3)
ESVOC SPERC 9.12b.v1	Use as fuel: Professional (SU22)
ESVOC SPERC 9.12c.v1	Use as a fuel: Consumer (SU21)
PROC1	Production or refining of chemicals in closed processes, without the possibility of exposure, or in processes with equivalent containment conditions
PROC14	Padding, compression, extrusion, pelletizing, granulation
PROC15	Use as laboratory reagents
PROC16	Use of fuels
PROC2	Production or refining of chemicals in a closed, continuous process, with occasional controlled exposure or processes with equivalent containment conditions
PROC3	Manufacture or formulation of chemicals in closed batch processes, with occasional controlled exposure, or processes with equivalent containment conditions
PROC4	Production of chemicals with the possibility of exposure
PROC5	Mixing or blending in batch processes
PROC8a	Transfer of a substance or preparation (filling/emptying) to non-dedicated facilities
PROC8b	Transfer of a substance or mixture (filling/emptying) at dedicated facilities
PROC9	Transfer of a substance or preparation into small containers (dedicated filling line, including weighing)
SU10	Formulation [mixing] of preparations and/or repackaging (except alloys)
SU21	Consumer uses: households (= general population = consumers)
SU22	Professional uses: public sector (administration, education, entertainment, services, crafts)
SU3	Industrial uses: uses of substances on their own or in preparations at industrial sites

ANNEX

EXPOSURE SCENARIOS

Related to the Aviation Fuel JET-A1 component (all types)

Identified use name	Sector	Area of use SU	Process Categories PROC	Environmental Release Categories ERC	Specific environmental release categories SpERC
01a- Distribution of the substance (GEST1A_I)	Industrial (G26)	3	1, 2, 3, 4, 8a, 8b, 9, 15	1,2,3,4,5,6a,6b,6c,6d,7	ESVOC SpERC 1.1b.v1
02- Formulation and (re)packaging of substances and mixtures (GEST2_I)	Industrial (G26)	3,10	1, 2, 3, 4, 5, 8a, 8b, 9, 14 15	2	ESVOC SpERC 2.2.v1
12a-Use as Fuel (GEST12_I): Industrial (G26)	Industrial (G26)	3	1, 2, 3., 8a, 8b, 16	7	ESVOC SpERC 7.12a.v1
12b- Use as Fuel (GEST12_I): Professional (G27)	Professional (G27)	22	1, 2, 3, 8a, 8b, 16	9a,9b	ESVOC SpERC 9.12b.v1
12c- Use as Fuel (GEST12_I): Consumers (G28)	Consumers (G28)	21	n.a.	9a,9b	ESVOC SpERC 9.12.c.v1

Index

1. Kerosene Distribution (JET A-1) – Industrial

Section 1		
Title		
	Substance Distribution	
Use descriptor		
Sector of use	3	
Process Categories	1, 2, 3, 4, 8a, 8b, 9, 15	
Environmental Release Categories	1,2,3,4,5,6a,6b,6c,7	
Specific Environmental Release Categories	ESVOC SpERC 1.1b.v1	
Processes, tasks, activities covered		
	Bulk loading (including marine vessels/barges, railcars/road tankers, and IBCs) and packaging (including drums and small containers) of substance, including sampling, storage, unloading, maintenance, and associated worker activities.	
Valuation method		
	See section 3.	
Section 2 Operating conditions and measures for risk prevention		
Section 2.1 Control of workers' exposure		
	Product features	
	Physical state of the product	Liquid
	Vapor Pressure (kPa)	Liquid, vapor pressure 0.5-10 kPa under standard conditions (OC4)
	Concentration of the substance in the product	Covers a percentage of substance in the product up to 100% (unless otherwise stated) (G13)
	Frequency and duration of use/exposure	Covers a daily exposure of up to 8 hours (unless otherwise specified) (G2).
	Other operating conditions affecting exposure	Assumes that the product is used at a temperature not exceeding 20°C above ambient temperature, unless otherwise specified (G15) It presupposes the application of an appropriate basic standard for hygiene in the workplace (G1).
	Scenario characteristics	***Specific risk management measures and operating conditions***
	General Measures (Skin Irritants) – G19	Avoid direct contact of the product with the skin. Identify potential areas of indirect skin contact. Wear protective gloves (tested to EN374 standard) if there is a likelihood of the substance coming into contact with your hands. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination with the skin. Provide basic training to staff aimed at preventing/limiting exposures and notify the onset of any dermatological problems. (E3).
	General Exposures (Closed Systems) – CS15	No further specific measures have been identified (EI20)
	General Exposures (Open Systems) – CS16	No further specific measures have been identified (EI20)
	In-process sampling – CS2	No further specific measures have been identified (EI20)
	Laboratory activities – CS36	No further specific measures have been identified (EI20)
	Bulk Transfer – CS14	No further specific measures have been identified (EI20)
	Filling drums and small containers – CS6	No further specific measures have been identified (EI20)
	Equipment Cleaning & Maintenance – CS39	No further specific measures have been identified (EI20)
	Bulk product storage – CS85	No further specific measures have been identified (EI20)
Section 2.2 Environmental Exposure Control		
	Product features	
	The substance is a UVCB complex (PrC3). Predominantly hydrophobic (PrC4a)	
	Quantities used	
	Fraction of EU tonnage used locally: (A1)	0,1
	Regional tonnage (tonnes/year) (A2)	5,4e6
	Fraction of regional tonnage used locally (A3)	2,0e-3
	Annual tonnage of the site (tonnes/year) (A5)	1,1e4
	Maximum Daily Site Tonnage (kg/day) (A4)	3,6e4
	Frequency and duration of use	
	Continuous release (FD2)	
	Emissions Days (days/year) (FD4)	300
	Environmental factors not affected by risk management	
	Local freshwater dilution factor (EF1)	10
	Local marine water dilution factor (EF2)	100
	Other operating conditions affecting environmental exposure	
	Fraction released into the air from the process (initial release before application of risk management measures) (OOC4)	1,0e-3
	Fraction released into wastewater from the process (initial release before application of risk management measures) (OOC5)	1,0e-5
	Fraction released into soil from the process (initial release before the application of risk management measures) (OOC6)	0,00001

	Technical conditions and measures at process level (source) to prevent release	
	Procedures vary from site to site, so conservative process emission estimates (TCS1) are used.	
	Technical conditions on site and measures to reduce or limit discharges, air emissions and releases into the soil	
	Environmental risk is related to indirect exposure of humans via ingestion. (TCR1a) No waste water treatment required. (TCR6)	
	Treat emissions in such a way as to ensure a typical removal effectiveness of (%) (TCR17)	90
	Treat wastewater on-site (before starting the discharge operation) to ensure the required removal effectiveness ≥ (%) (TCR8)	0
	In case of discharge to an urban wastewater treatment plant, ensure the required on-site removal effectiveness ≥ (%) (TCR9)	0
	Organizational measures to prevent/limit release from the site (1286)	
	Do not distribute sludge generated by industrial water treatment on natural soil (OMS2) Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (OMS3)	
	Conditions and measures relating to the municipal wastewater treatment plant	
	Estimated removal of wastewater substance by means of an urban treatment plant (%) (STP3)	94,7
	Total effectiveness of wastewater removal, after the adoption of on-site and offsite (urban-type treatment plant) RMMs (%) (STP4)	94,7
	Maximum Permissible Site Tonnage (MSafe) based on Release After Total Wastewater Removal Treatment (kg/d) (STP6)	2.6e6
	Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000
	Conditions relating to the external treatment of waste for disposal (1272)	
	External waste treatment and disposal must comply with applicable local and/or national legislation. (ETW3)	
	Conditions and measures relating to external waste recovery	
	External waste collection and recycling must comply with applicable local and/or national legislation. (ERW1)	

Section 3 Exposure Estimation

Section 3.1 Health

For the purpose of assessing the level of exposure in the workplace, where not expressly indicated, the ECETOC TRA (G21) method was used

Section 3.2 Environment

The HBM (Hydrocarbon Block Method) method was used to calculate environmental exposure with the Petrorisk model (EE2)

Section 4 Guidance for verifying compliance with the exposure scenario

Section 4.1 Health

The available data on hazard characteristics do not allow for derivation of a DNEL for skin irritant effects. (G32)
Risk Management Measures are based on the qualitative characterization of risk. (G37)
The available data on hazard characteristics do not support the need to establish a DNEL for other health effects. (G36)
Users are advised to take into account national occupational exposure limits or other equivalent values. (G38)
Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level. (G23)

Section 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; therefore, a scaling operation may be required to define appropriate site-specific risk management measures (DSU1).
The required efficiency of wastewater removal can be achieved using onsite/offsite technologies, either individually or in combination (DSU2).
The required efficiency of air removal can be achieved by using onsite technologies, either individually or in combination (DSU3).
Further information on scaling activities and control technologies is provided by the SpERC (http://cefic.org/en/reach-for-industries-libraries.html) (DSU4) data sheets.

2.Formulation and (Re)packaging of Kerosene (JET A-1) – INDUSTRIAL

Section 1	
Title	
Formulation and (re)packaging of substances and mixtures	
Use descriptor	
Sector of use	3, 10
Process Categories	1, 2, 3, 4, 8a, 8b, 9, 14, 15
Environmental Release Categories	2
Specific Environmental Release Categories	ESVOC SpERC 2.2.v1
Processes, tasks, activities covered	
Formulation, packaging, and repackaging of the substance and its mixtures in batch or continuous operations, including storage, material transfer, mixing, tableting, compression, pelletizing, extrusion, large and small-scale packaging, sampling, maintenance, and associated laboratory activities. (GES2_I)	
Valuation method	
See section 3.	
Section 2 Operating conditions and measures for risk prevention	
Section 2.1 Control of workers' exposure	
Product features	
Physical state of the product	Liquid
Vapor Pressure (kPa)	Liquid, vapor pressure 0.5-10 kPa under standard conditions (OC4)
Concentration of the substance in the product	Covers a percentage of substance in the product up to 100% (unless otherwise stated) (G13)
Frequency and duration of use/exposure	Covers a daily exposure of up to 8 hours (unless otherwise specified) (G2).
Other operating conditions affecting exposure	Assumes that the product is used at a temperature not exceeding 20°C above ambient temperature, unless otherwise specified (G15) It presupposes the application of an appropriate basic standard for hygiene in the workplace (G1).
Scenario characteristics	***Specific risk management measures and operating conditions***
General Measures (Skin Irritants) – G19	Avoid direct contact of the product with the skin. Identify potential areas of indirect skin contact. Wear protective gloves (tested to EN374 standard) if there is a likelihood of the substance coming into contact with your hands. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination with the skin. Provide basic training to staff aimed at preventing/limiting exposures and notify the onset of any dermatological problems. (E3).
General Exposures (Closed Systems) – CS15	No further specific measures have been identified (EI20)
General Exposures (Open Systems) – CS16	No further specific measures have been identified (EI20)
In-process sampling – CS2	No further specific measures have been identified (EI20)
Laboratory activities – CS36	No further specific measures have been identified (EI20)
Bulk Transfer – CS14	No further specific measures have been identified (EI20)
Mixing Operations (Open Systems) - CS30	No further specific measures have been identified (EI20)
Manual - CS34 Transfer/Pour from Containers - CS22	No further specific measures have been identified (EI20)
Drum/batch transfers (CS8)	No further specific measures have been identified (EI20)
Production or preparation of articles by tableting, compression, extrusion or pelletizing (CS100)	No further specific measures have been identified (EI20)
Filling drums and small containers – CS6	No further specific measures have been identified (EI20)
Equipment Cleaning & Maintenance – CS39	No further specific measures have been identified (EI20)
Bulk product storage – CS85	No further specific measures have been identified (EI20)
Section 2.2 Environmental Exposure Control	
Product features	
The substance is a UVCB complex (PrC3). Predominantly hydrophobic (PrC4a)	
Quantities used	
Fraction of EU tonnage used locally: (A1)	0,1
Regional tonnage (tonnes/year) (A2)	5,2e6
Fraction of regional tonnage used locally (A3)	5,8e-3
Annual tonnage of the site (tonnes/year) (A5)	3,0e4
Maximum Daily Site Tonnage (kg/day) (A4)	1,0e5
Frequency and duration of use	
Continuous release (FD2)	
Emissions Days (days/year) (FD4)	300
Environmental factors not affected by risk management	

	Local freshwater dilution factor (EF1)	10
	Local marine water dilution factor (EF2)	100
	Other operating conditions affecting environmental exposure	
	Fraction released into the air from the process (after the application of typical risk management measures, in accordance with the requirements of the EU Solvent Emissions Directive): (OOC11)	1.0e-2
	Fraction released into wastewater from the process (initial release before application of risk management measures) (OOC5)	2.0e-4
	Fraction released into soil from the process (initial release before the application of risk management measures) (OOC6)	0,0001
	Technical conditions and measures at process level (source) to prevent release	
	Procedures vary from site to site, so conservative process emission estimates (TCS1) are used.	
	Technical conditions on site and measures to reduce or limit discharges, air emissions and releases into the soil	
	Environmental risk is induced by the freshwater sediment compartment. (TCR1b) Prevent the release of undissolved substances or recover them from wastewater. (TCR14) In the case of discharge to an urban wastewater treatment plant, no treatment is required. (TCR9)	
	Treat emissions in such a way as to ensure a typical removal effectiveness of (%) (TCR17)	0
	Treat wastewater on-site (before starting the discharge operation) to ensure the required removal effectiveness ≥ (%) (TCR8)	86,0
	In case of discharge to an urban wastewater treatment plant, ensure the required on-site removal effectiveness ≥ (%) (TCR9)	0
	Organizational measures to prevent/limit release from the site (1286)	
	Do not distribute sludge generated by industrial water treatment on natural soil (OMS2) Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (OMS3)	
	Conditions and measures relating to the municipal wastewater treatment plant	
	Estimated removal of wastewater substance by means of an urban treatment plant (%) (STP3)	94,7
	Total effectiveness of wastewater removal, after the adoption of on-site and offsite (urban-type treatment plant) RMMs (%) (STP4)	94,7
	Maximum Permissible Site Tonnage (MSafe) based on Release After Total Wastewater Removal Treatment (kg/d) (STP6)	2.6e5
	Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000
	Conditions relating to the external treatment of waste for disposal (1272)	
	External waste treatment and disposal must comply with applicable local and/or national legislation. (ETW3)	
	Conditions and measures relating to external waste recovery	
	External waste collection and recycling must comply with applicable local and/or national legislation. (ERW1)	

Section 3 Estimating Exposures

Section 3.1 Health

For the purpose of assessing the level of exposure in the workplace, where not expressly indicated, the ECETOC TRA (G21) method was used

Section 3.2 Environment

The HBM (Hydrocarbon Block Method) method was used to calculate environmental exposure with the Petrorisk model (EE2)

Section 4 Guidance for verifying compliance with the exposure scenario

Section 4.1 Health

The available data on hazard characteristics do not allow for derivation of a DNEL for skin irritant effects. (G32)
Risk Management Measures are based on the qualitative characterization of risk. (G37)
The available data on hazard characteristics do not support the need to establish a DNEL for other health effects. (G36)
Users are advised to take into account national occupational exposure limits or other equivalent values. (G38)
Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level. (G23)

3. Use of Kerosene (JET A-1) as a fuel – Industrial

Section 1		
Title		
Use as fuel		
Use descriptor		
Sector of use	3	
Process Categories	1, 2, 3, 8a, 8b, 16	
Environmental Release Categories	7	
Specific Environmental Release Categories	ESVOC SpERC 7.12b v1	
Processes, tasks, activities covered		
It covers use as a fuel (or fuel additive or additive components), including activities associated with the transfer, use, maintenance of equipment and waste disposal. (GES12-I).		
Valuation method		
See section 3.		
Section 2 Operating conditions and measures for risk prevention		
Section 2.1 Control of workers' exposure		
Product features		
Physical state of the product	Liquid	
Vapor Pressure (kPa)	Liquid, vapor pressure 0.5-10 kPa under standard conditions (OC4)	
Concentration of the substance in the product	Covers a percentage of substance in the product up to 100% (unless otherwise stated) (G13)	
Frequency and duration of use/exposure	Covers a daily exposure of up to 8 hours (unless otherwise specified) (G2).	
Other operating conditions affecting exposure	Assumes that the product is used at a temperature not exceeding 20°C above ambient temperature, unless otherwise specified (G15) It presupposes the application of an appropriate basic standard for hygiene in the workplace (G1).	
Scenario characteristics	***Specific risk management measures and operating conditions***	
General Measures (Skin Irritants) – G19	Avoid direct contact of the product with the skin. Identify potential areas of indirect skin contact. Wear protective gloves (tested to EN374 standard) if there is a likelihood of the substance coming into contact with your hands. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination with the skin. Provide basic training to staff aimed at preventing/limiting exposures and notify the onset of any dermatological problems. (E3).	
General Exposures (Closed Systems) – CS15	No further specific measures have been identified (EI20)	
Fuel Use (GEST_12I) (Closed Systems) – CS107	No further specific measures have been identified (EI20)	
Bulk Transfer – CS14	No further specific measures have been identified (EI20)	
Drum/batch transfer – CS8	No further specific measures have been identified (EI20)	
Equipment Cleaning & Maintenance – CS39	No further specific measures have been identified (EI20)	
Bulk product storage – CS85	No further specific measures have been identified (EI20)	
Section 2.2 Environmental Exposure Control		
Product features		
The substance is a UVCB complex (PrC3). Predominantly hydrophobic (PrC4a)		
Quantities used		
Fraction of EU tonnage used locally: (A1)		0,1
Regional tonnage (tonnes/year) (A2)		5.5e5
Fraction of regional tonnage used locally (A3)		1
Annual tonnage of the site (tonnes/year) (A5)		5.5e5
Maximum Daily Site Tonnage (kg/day) (A4)		1.8e6
Frequency and duration of use		
Continuous release (FD2)		
Emissions Days (days/year) (FD4)		300

	Environmental factors not affected by risk management	
	Local dilution factor in fresh water (EF1)	10
	Local dilution factor in seawater (EF2)	100
	Other operating conditions affecting environmental exposure	
	Fraction released into the air from the process (initial release before application of risk management measures) (OOC4)	5.0e-3
	Fraction released into wastewater from the process (initial release before application of risk management measures) (OOC5)	0,00001
	Fraction released into soil from the process (initial release before the application of risk management measures) (OOC6)	0
	Technical conditions and measures at process level (source) to prevent release	
	Procedures vary from site to site, so conservative process emission estimates (TCS1) are used.	
	Technical conditions on site and measures to reduce or limit discharges, air emissions and releases into the soil	
	Environmental risk is induced by the freshwater sediment compartment. (TCR1b) In the case of discharge to an urban wastewater treatment plant, no treatment is required. (TCR9)	
	Treat emissions in such a way as to ensure a typical removal effectiveness of (%) (TCR17)	95
	Treat wastewater on-site (before starting the discharge operation) to ensure the required removal effectiveness ≥ (%) (TCR8)	84,6
	In case of discharge to an urban wastewater treatment plant, ensure the required on-site removal effectiveness ≥ (%) (TCR9)	0
	Organizational measures to prevent/limit release from the site (1286)	
	Do not distribute sludge generated by industrial water treatment on natural soil (OMS2) Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (OMS3)	
	Conditions and measures relating to the municipal wastewater treatment plant	
	Estimated removal of wastewater substance by means of an urban treatment plant (%) (STP3)	94,7
	Total effectiveness of wastewater removal, after the adoption of on-site and offsite (urban-type treatment plant) RMMs (%) (STP4)	94,7
	Maximum Permissible Site Tonnage (MSafe) based on Release After Total Wastewater Removal Treatment (kg/d) (STP6)	5.3e6
	Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000
	Conditions relating to the external treatment of waste for disposal (1272)	
	Combustion emissions are regulated by the control measures in force. (ETW1) Combustion emissions are taken into account in the regional impact assessment. (ETW2)	
	Conditions and measures relating to external waste recovery	
	This substance is consumed during use and no waste is generated for the substance to be recovered (ERW3)	

Section 3 Estimating Exposures

Section 3.1 Health

For the purpose of assessing the level of exposure in the workplace, where not expressly indicated, the ECETOC TRA (G21) method was used

Section 3.2 Environment

The HBM (Hydrocarbon Block Method) method was used to calculate environmental exposure with the Petrorisk model (EE2)

Section 4 Guidance for verifying compliance with the exposure scenario

Section 4.1 Health

The available data on hazard characteristics do not allow for derivation of a DNEL for skin irritant effects. (G32)
Risk Management Measures are based on the qualitative characterization of risk. (G37)
The available data on hazard characteristics do not support the need to establish a DNEL for other health effects. (G36)
Users are advised to take into account national occupational exposure limits or other equivalent values. (G38)
Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level. (G23)

Section 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; therefore, a scaling operation may be required to define appropriate site-specific risk management measures (DSU1).
The required efficiency of wastewater removal can be achieved using onsite/offsite technologies, either individually or in combination (DSU2).
The required efficiency of air removal can be achieved by using onsite technologies, either individually or in combination (DSU3).
Further information on scaling activities and control technologies is provided by the SpERC (http://cefic.org/en/reach-for-industries-libraries.html) (DSU4) data sheets.

4. Use of Kerosene (JET-A1) as fuel – Professional

Section 1		
Title		
	Use as fuel	
Use descriptor		
Sector of use	22	
Process Categories	1, 2, 3, 8a, 8b, 16	
Environmental Release Categories	9a, 9b	
Specific Environmental Release Categories	ESVOC SpERC 9.12b.v1	
Processes, tasks, activities covered		
	It covers use as a fuel (or fuel additive or additive components), including activities associated with the transfer, use, maintenance of equipment and waste disposal. (GES12-I).	
Valuation method		
	See section 3.	
Section 2 Operating conditions and measures for risk prevention		
Section 2.1 Control of workers' exposure		
	Product features	
	Physical state of the product	Liquid
	Vapor Pressure (kPa)	Liquid, vapor pressure 0.5-10 kPa under standard conditions (OC4)
	Concentration of the substance in the product	Covers a percentage of substance in the product up to 100% (unless otherwise stated) (G13)
	Frequency and duration of use/exposure	Covers a daily exposure of up to 8 hours (unless otherwise specified) (G2).
	Other operating conditions affecting exposure	Assumes that the product is used at a temperature not exceeding 20°C above ambient temperature, unless otherwise specified (G15) It presupposes the application of an appropriate basic standard for hygiene in the workplace (G1).
	Scenario characteristics	***Specific risk management measures and operating conditions***
	General Measures (Skin Irritants) – G19	Avoid direct contact of the product with the skin. Identify potential areas of indirect skin contact. Wear protective gloves (tested to EN374 standard) if there is a likelihood of the substance coming into contact with your hands. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination with the skin. Provide basic training to staff aimed at preventing/limiting exposures and notify the onset of any dermatological problems. (E3).
	General Exposures (Closed Systems) – CS15	No further specific measures have been identified (EI20)
	Fuel Use (GEST_12I) (Closed Systems) – CS107	No further specific measures have been identified (EI20)
	Bulk Transfer – CS14	No further specific measures have been identified (EI20)
	Transfer/Pour from Containers – CS22	No further specific measures have been identified (EI20)
	Equipment Cleaning & Maintenance – CS39	No further specific measures have been identified (EI20)
	Bulk product storage – CS85	No further specific measures have been identified (EI20)
Section 2.2 Environmental Exposure Control		
	Product features	
	The substance is a UVCB complex (PrC3). Predominantly hydrophobic (PrC4a)	
	Quantities used	
	Fraction of EU tonnage used locally: (A1)	0,1
	Regional tonnage (tonnes/year) (A2)	4.4e6
	Fraction of regional tonnage used locally (A3)	5e-4
	Annual tonnage of the site (tonnes/year) (A5)	2.2e3
	Maximum Daily Site Tonnage (kg/day) (A4)	6.1e3
	Frequency and duration of use	
	Continuous release (FD2)	
	Emissions Days (days/year) (FD4)	365

	Environmental factors not affected by risk management	
	Local dilution factor in fresh water (EF1)	10
	Local dilution factor in seawater (EF2)	100
	Other operating conditions affecting environmental exposure	
	Fraction released into the air by highly dispersive use (regional only) (OOC7)	1.0e-3
	Fraction released into wastewater by highly dispersive use (OOC8)	0,00001
	Fraction released into the soil by highly dispersive use (regional only) (OOC9)	0,00001
	Technical conditions and measures at process level (source) to prevent release	
	Procedures vary from site to site, so conservative process emission estimates (TCS1) are used.	
	Technical conditions on site and measures to reduce or limit discharges, air emissions and releases into the soil	
	Environmental risk is related to indirect exposure of humans via ingestion. (TCR1a) No waste water treatment required. (TCR6)	
	Treat emissions in such a way as to ensure a typical removal effectiveness of (%) (TCR17)	N/A
	Treat wastewater on-site (before starting the discharge operation) to ensure the required removal effectiveness ≥ (%) (TCR8)	0
	In case of discharge to an urban wastewater treatment plant, ensure the required on-site removal effectiveness ≥ (%) (TCR9)	0
	Organizational measures to prevent/limit release from the site (1286)	
	Do not distribute sludge generated by industrial water treatment on natural soil (OMS2) Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (OMS3)	
	Conditions and measures relating to the municipal wastewater treatment plant	
	Estimated removal of wastewater substance by means of an urban treatment plant (%) (STP3)	94,7
	Total effectiveness of wastewater removal, after the adoption of on-site and offsite (urban-type treatment plant) RMMs (%) (STP4)	94,7
	Maximum Permissible Site Tonnage (MSafe) based on Release After Total Wastewater Removal Treatment (kg/d) (STP6)	6.9e5
	Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000
	Conditions relating to the external treatment of waste for disposal (1272)	
	Combustion emissions are regulated by the control measures in force. (ETW1) Combustion emissions are taken into account in the regional impact assessment. (ETW2)	
	Conditions and measures relating to external waste recovery	
	This substance is consumed during use and no waste is generated for the substance to be recovered (ERW3)	

Section 3 Estimating Exposures

Section 3.1 Health

For the purpose of assessing the level of exposure in the workplace, where not expressly indicated, the ECETOC TRA (G21) method was used

Section 3.2 Environment

The HBM (Hydrocarbon Block Method) method was used to calculate environmental exposure with the Petrorisk model (EE2)

Section 4 Guidance for verifying compliance with the exposure scenario

Section 4.1 Health

The available data on hazard characteristics do not allow for derivation of a DNEL for skin irritant effects. (G32)
Risk Management Measures are based on the qualitative characterization of risk. (G37)
The available data on hazard characteristics do not support the need to establish a DNEL for other health effects. (G36)
Users are advised to take into account national occupational exposure limits or other equivalent values. (G38)
Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level. (G23)

Section 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; therefore, a scaling operation may be required to define appropriate site-specific risk management measures (DSU1).
The required efficiency of wastewater removal can be achieved using onsite/offsite technologies, either individually or in combination (DSU2).
The required efficiency of air removal can be achieved by using onsite technologies, either individually or in combination (DSU3).
Further information on scaling activities and control technologies is provided by the SpERC (http://cefic.org/en/reach-for-industries-libraries.html) (DSU4) data sheets.

5. Use of Kerosene (JET A-1) as a fuel – Consumer

Section 1			
Title			
Use as fuel			
Use descriptor			
Sector of use	21		
Process Categories	13		
Environmental Release Categories	9a, 9b		
Specific Environmental Release Categories	ESVOC SpERC 9.12c.v1		
Processes, tasks, activities covered			
It covers consumer use as fuel. (GES12-C).			
Valuation method			
See section 3.			
Section 2 Operating conditions and measures for risk prevention			
Section 2.1 Control of workers' exposure			
Product features			
Physical state of the product	Liquid		
Vapor Pressure (kPa)	Liquid, vapor pressure 0.5-10 kPa under standard conditions (OC4)		
Concentration of the substance in the product	Unless otherwise specified, it covers concentrations up to 100% (ConsOC1)		
Quantity used	Unless otherwise specified, it covers the use of an amount up to 50000 (g) (ConsOC2). Covers a skin contact area of up to 420 cm2 (ConsOC5a)		
Frequency and duration of use/exposure	Unless otherwise specified, it covers usage up to 0.143 times/day (ConsOC4) Covers exposure up to 2 hours/event (ConsOC14).		
Other operating conditions affecting exposure	Unless otherwise specified, covers ambient temperature usage (COnsOC15) Covers use in a room size of 20 m3 (COnsOC11) Covers use in typical household ventilation conditions (COnsOC8)		
Product category		***Specific risk management measures and operating conditions***	
Liquid fuel: Automotive Refueling (PC13)	OC	Unless otherwise specified, it covers concentrations up to 100% (ConsOC1) It covers use up to 52 days per year (ConsOC3) It covers use up to once per day (ConsOC4) It covers a skin contact area up to 210,000 cm² (ConsOC5) For each occasion of use, it covers the use of an amount up to 50,000 g (ConsOC2) It covers outdoor use (ConsOC12) It covers use in a room of 100 m³ (ConsOC11) It covers exposure up to 0.05 hours per event (ConsOC14a)	
	RMM	No specific risk management (RMM) measures have been identified for the operating conditions (OCs) defined above	
Liquid fuel: Home heating (PC13)	OC	Unless otherwise specified, it covers concentrations up to 100% (ConsOC1) It covers use up to 365 days per year (ConsOC3) It covers use up to once per day (ConsOC4) It covers a skin contact area up to 210,000 cm² (ConsOC5) For each occasion of use, it covers the use of an amount up to 1500 g (ConsOC2) It covers use under typical domestic ventilation conditions (ConsOC8) It covers use in a room of 20 m³ (ConsOC11) For each occasion of use, it covers exposure up to 0.03 hours per event (ConsOC14)	
	RMM	No specific risk management (RMM) measures have been identified for the operating conditions (OCs) defined above	
Liquid fuel: Garden product Use (PC13)	OC	Unless otherwise specified, it covers concentrations up to 100% (ConsOC1) It covers use up to 26 days per year (ConsOC3) It covers use up to once per day (ConsOC4) For each occasion of use, it covers the use of an amount up to 1000 g (ConsOC2) It covers outdoor use (ConsOC12) It covers use in a room of 100 m³ (ConsOC11) For each occasion of use, it covers exposure up to 2 hours per event (ConsOC14)	
	RMM	No specific risk management (RMM) measures have been identified for the operating conditions (OCs) defined above	
Liquid fuel: Garden product Refueling (PC13)	OC	Unless otherwise specified, it covers concentrations up to 100% (ConsOC1) It covers use up to 26 days per year (ConsOC3) It covers use up to once per day (ConsOC4) It covers a skin contact area up to 420.00 cm² (ConsOC5) For each occasion of use, it covers the use of an amount up to 1000 g (ConsOC2)	

			It covers use in a single-car garage (34 m³) with typical ventilation (ConsOC10) It covers use in a room of 34 m³ (ConsOC11) For each occasion of use, it covers exposure up to 0.03 hours per event (ConsOC14)

Section 2.2 Environmental Exposure Control		
	Product features	
	The substance is a UVCB complex (PrC3). Predominantly hydrophobic (PrC4a)	
	Quantities used	
	Fraction of EU tonnage used locally: (A1)	0,1
	Regional tonnage (tonnes/year) (A2)	1.8e5
	Fraction of regional tonnage used locally (A3)	0,0005
	Annual tonnage of the site (tonnes/year) (A5)	89
	Maximum Daily Site Tonnage (kg/day) (A4)	245
	Frequency and duration of use	
	Continuous release (FD2)	
	Emissions Days (days/year) (FD4)	365
	Environmental factors not affected by risk management	
	Local dilution factor in fresh water (EF1)	10
	Local dilution factor in seawater (EF2)	100
	Other operating conditions affecting environmental exposure	
	Fraction released into the air by highly dispersive use (regional only) (OOC7)	1.0e-3
	Fraction released into wastewater by highly dispersive use (OOC8)	0,00001
	Fraction released into the soil by highly dispersive use (regional only) (OOC9)	0,00001
	Conditions and measures relating to the municipal waste water treatment plant	
	The risk related to environmental exposure is conditioned by the fresh water compartment. (STP7a)	
	Estimated removal of waste water by means of an urban treatment plant (%): (STP3)	94,7
	Maximum Permissible Site Tonnage (MSafe) based on Release After Total Wastewater Removal Treatment (kg/d) (STP6)	3.1e4
	Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000
	Conditions relating to the external treatment of waste for disposal (1272)	
	Do not distribute sludge generated by industrial water treatment on natural soil (OMS2) Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (OMS3)	
	Conditions and measures relating to external waste recovery	
	This substance is consumed during use and no waste is generated for the substance to be recovered (ERW3)	

Section 3 Estimating Exposures

Section 3.1 Health

The ECETOC TRA tool was used to assess the level of consumer exposure, consistent with the content of ECETOC Report No. 107 and Chapter R15 of the IR&CSA TGD. Where the agents determining exposure differ from these sources, these will be indicated. (G42)

Section 3.2 Environment

The HBM (Hydrocarbon Block Method) method was used to calculate environmental exposure with the Petrorisk model (EE2)

Section 4 Guidance for verifying compliance with the exposure scenario

Section 4.1 Health

Exposures are expected not to exceed the applicable consumer reference values when the operating conditions/risk management measures set out in Section 2 are in place. (G39)
Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level. (G23)

Section 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; therefore, a scaling operation may be required to define appropriate site-specific risk management measures (DSU1).
Further information on scaling activities and control technologies is provided by the SpERC (http://cefic.org/en/reach-for-industries-libraries.html) (DSU4) data sheets.