

SAFETY DATA SHEET

Aviation Fuel Jet A-1



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

1.1 Product identifier

Product name : Aviation Fuel Jet A-1
Viscosity or Type : Aviation Fuel Jet F35
Index number : 649-423-00-8
EC number : 265-184-9
REACH Registration number

Registration number	Legal entity
01-2119462828-25-0008	KPISCO
01-2119462828-25-0002	KPISCO
01-2119462828-25	-

CAS number : 64742-81-0

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

Material uses : Aviation turbine fuel

Identified uses
<input checked="" type="checkbox"/> Manufacture of substance <input type="checkbox"/> Formulation and (re)packing of substances and mixtures <input type="checkbox"/> Use in fuel - Industrial <input type="checkbox"/> Use in fuel - Professional

Uses advised against	Reason
<input checked="" type="checkbox"/> Use in explosives - Professional <input type="checkbox"/> Use in road and construction products - Professional <input type="checkbox"/> Use in agrochemicals - Consumer <input type="checkbox"/> Use in binder and release agents - Professional <input type="checkbox"/> Use in cleaning agents - Consumer <input type="checkbox"/> Use in coatings - Consumer <input type="checkbox"/> Use in coatings - Professional <input type="checkbox"/> Use in lubricants - Consumer (High environmental release) <input type="checkbox"/> Use in lubricants - Consumer (Low environmental release) <input type="checkbox"/> Use in lubricants - Professional (High environmental release) <input type="checkbox"/> Use in lubricants - Professional (Low environmental release) <input type="checkbox"/> Use in metal working fluids/rolling oils - Professional	- - - - - - - - - - -

1.3 Details of the supplier of the safety data sheet

Supplier : Kuwait Petroleum Aviation France SAS
3 Rue du Colonel Moll
F-75017 Paris, France
Tel. +44(0)1483737156

e-mail address of person responsible for this SDS : SDSinfo@Q8.com, communication preferably in English only.

PCN Information contact : PCNinfo@Q8.com, communication preferably in English only.

1.4 Emergency telephone number

France : +33 1 72 11 00 03
Europe : +44 (0) 1235 239 670
Global (English only) : +44 (0) 1865 407 333



Aviation Fuel Jet A-1

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

National advisory body/Poison Center

France : Poison Control Centre (ORFILA) : +33 (0)1 45 42 59 59

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : UVCB

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

FLAMMABLE LIQUIDS	Category 3	H226
SKIN CORROSION/IRRITATION	Category 2	H315
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects)	Category 3	H336
ASPIRATION HAZARD	Category 1	H304
AQUATIC HAZARD (LONG-TERM)	Category 2	H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity : None.

Ingredients of unknown ecotoxicity : None.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

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

Precautionary statements

General : P102 - Keep out of reach of children.

Prevention : P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response : P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or physician.
P331 - Do NOT induce vomiting.

Storage : P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : Kerosine (petroleum), hydrodesulfurized

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Aviation Fuel Jet A-1

SECTION 2: Hazards identification

Detergents - Regulation (EC) No 648/2004 : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII :

	PBT	P	B	T	vPvB	vP	vB
	<input checked="" type="checkbox"/> No	N/A	N/A	No	N/A	N/A	N/A

Other hazards which do not result in classification : Hazardous concentrations of hydrogen sulphide (H₂S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas.

SECTION 3: Composition/information on ingredients

3.1 Substances : UVCB

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
<input checked="" type="checkbox"/> Kerosine (petroleum), hydrodesulfurized	REACH #: 01-2119462828-25 EC: 265-184-9 CAS: 64742-81-0 Index: 649-423-00-8	100	Flam. Liq. 3, H226 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	-	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

Constituent

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If exposure to hydrogen sulphide is suspected or cannot be excluded, obtain medical attention IMMEDIATELY. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

SECTION 4: First aid measures

- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

SECTION 5: Firefighting measures

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
Hydrogen sulphide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Hazardous concentrations of hydrogen sulphide (H₂S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Provide adequate ventilation. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Named substances

Name	Notification and MAPP threshold	Safety report threshold
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2500 tonne	25000 tonne

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.


PNECs

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Product may release hydrogen sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water and unintentional releases should be made to help determine controls appropriate to local circumstances.

Individual protection measures

Hygiene measures :  Do not ingest. If swallowed then seek immediate medical assistance. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Wear suitable gloves tested to EN374. Recommended: < 1 hour (breakthrough time): nitrile rubber 0.17 mm.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

SECTION 8: Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Boiling point > 65 °C: A1; Boiling point < 65 °C: AX1; Hot material: A1P2.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Appearance** : Clear.
- Color** : Colorless.
- Odor** : Characteristic.
- Odor threshold** : Not applicable.
- Melting point/freezing point** : -45°C (<-49°F) [ASTM D 97]
- Initial boiling point and boiling range** : 160°C (>320°F) [ASTM D 86]
- Flammability** : Not applicable.
- Lower and upper explosion limit** : Lower: 0.7%
Upper: 5%
- Flash point** : closed cup: >38°C (>100.4°F) [ISO 2719]
- Auto-ignition temperature** : 220°C (>428°F) [ASTM E 659]
- Decomposition temperature** : >220°C
- pH** : Not applicable.
- Viscosity** : Dynamic (room temperature): Not applicable.
Kinematic (40°C (104°F)): 1 to 2.5 mm²/s (1 to 2.5 cSt) [ASTM D 445]
- Solubility(ies)** :

Media	Result
<input checked="" type="checkbox"/> cold water	Not soluble
<input checked="" type="checkbox"/> hot water	Not soluble

Partition coefficient: n-octanol/ water : 3 to 6

- Vapor pressure** : 0.5 kPa (<3.76 mm Hg)
- Density** : 0.75 to 0.86 g/cm³ [15°C (59°F)] [ISO 3675]
- Vapor density** : Not available.
- Explosive properties** : Not applicable.
- Oxidizing properties** : Not applicable.
- Particle characteristics**
- Median particle size** : Not applicable.

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- 10.5 Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- 10.6 Hazardous decomposition products** : Decomposition products may include the following materials: sulfur oxides
Hydrogen sulphide

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Kerosine (petroleum), hydrodesulfurized	Eyes - Edema of the conjunctivae	Rabbit	0	72 hours	-
	Skin - Edema	Rabbit	0	4 hours	7 days
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary

Skin : Non-irritant to skin.

Eyes : Non-irritating to the eyes.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Kerosine (petroleum), hydrodesulfurized	skin	Guinea pig	Not sensitizing

Conclusion/Summary

Skin : Not sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Kerosine (petroleum), hydrodesulfurized	-	Experiment: In vitro Subject: Bacteria	Negative
	-	Experiment: In vivo Subject: Mammalian-Animal	Negative

Conclusion/Summary : Not available.

Aviation Fuel Jet A-1

SECTION 11: Toxicological information

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	Negative - Dermal - TC	Mouse - Male, Female	-	102 weeks; 3 days per week

Conclusion/Summary : Not available.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	Negative	-	Negative	Rat - Male, Female	Dermal: 494 mg/kg	14 days; 7 days per week

Conclusion/Summary : Not available.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	Negative - Oral	Rat	1000 mg/kg	10 days; 7 days per week

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Kerosine (petroleum), hydrodesulfurized	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
Kerosine (petroleum), hydrodesulfurized	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

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

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

SECTION 11: Toxicological information

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	Sub-acute NOAEL Dermal	Rat - Male, Female	≥0.5 mg/kg	28 days; 5 days per week
	Sub-chronic NOAEL Oral	Rat - Female	750 mg/kg	21 weeks; 7 days per week
	Sub-acute NOAEL Inhalation Vapor	Rat - Male, Female	≥24 mg/m ³	28 days; 5 days per week

- Conclusion/Summary** : Not available.
- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Kerosine (petroleum), hydrodesulfurized	Acute EC50 1 to 3 mg/l Fresh water	Algae	72 hours
	Acute EC50 1.4 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 2 to 5 mg/l Fresh water	Fish	96 hours

- Conclusion/Summary** : Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Kerosine (petroleum), hydrodesulfurized	301F Ready Biodegradability - Manometric Respirometry Test	58.6 % - Inherent - 28 days	-	-

Aviation Fuel Jet A-1

SECTION 12: Ecological information

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
☑ Kerosine (petroleum), hydrodesulfurized	-	-	Inherent

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
☑ Kerosine (petroleum), hydrodesulfurized	3 to 6	-	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
☑ Kerosine (petroleum), hydrodesulfurized	No	N/A	N/A	No	N/A	N/A	N/A

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
13 07 01*	fuel oil and diesel

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 13: Disposal considerations

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1863	UN1863	UN1863	UN1863
14.2 UN proper shipping name	FUEL, AVIATION, TURBINE ENGINE	FUEL, AVIATION, TURBINE ENGINE	FUEL, AVIATION, TURBINE ENGINE	Fuel, aviation, turbine engine
14.3 Transport hazard class(es)	3 	3 	3 	3
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

ADR/RID

The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Hazard identification number 30

Limited quantity 5 L

Special provisions 664

Tunnel code (D/E)

ADN

The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IMDG

The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Emergency schedules F-E, S-E

Special provisions 223

IATA

The environmentally hazardous substance mark may appear if required by other transportation regulations.

Quantity limitation Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344.

Special provisions A3

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments

Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Named substances

Name

Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

National regulations

France

Social Security Code, Articles L 461-1 to L 461-7 : Kerosine (petroleum), hydrodesulfurized RG 84

Reinforced medical surveillance : Decree n ° 2012-135 of January 30, 2012 relating to the organization of occupational medicine: not applicable

Germany

Hazard class for water (WGK) : 1

Switzerland

VOC content : VOC (w/w): 100%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

SECTION 15: Regulatory information

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	:	This material is listed or exempted.
Canada	:	This material is listed or exempted.
China	:	This material is listed or exempted.
Eurasian Economic Union	:	Russian Federation inventory : This material is listed or exempted.
Japan	:	Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : Not determined.
New Zealand	:	This material is listed or exempted.
Philippines	:	This material is listed or exempted.
Republic of Korea	:	This material is listed or exempted.
Taiwan	:	This material is listed or exempted.
Thailand	:	This material is listed or exempted.
Turkey	:	This material is listed or exempted.
United States of America	:	This material is active or exempted.
Viet Nam	:	This material is listed or exempted.

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

📌 Indicates information that has changed from previously issued version.

Abbreviations and acronyms	:	ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ASTM = American Society for Testing and Materials ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS = Chemical Abstracts Service CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DIN = German Institute for Standardization DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EC = European Commission EC50 = Half maximal effective concentration EN = European Standard (Norm) EUH statement = CLP-specific Hazard statement GHS - Globally Harmonized System of Classification and Labeling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IC50 = Half maximal inhibitory concentration IMDG = International Maritime Dangerous Goods
-----------------------------------	---	--

SECTION 16: Other information

IMO = International Maritime Organisation
 ISO = International Organization for Standardization
 LC50 = Median lethal concentration
 LD50 = Median lethal dose
 LOAEL / LOAEC = Lowest Observed Adverse Effect Level / Concentration
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 N/A = Not available
 NOAEL / NOAEC = No Observed Adverse Effect Level / Concentration
 NOEL / NOEC = No Observed Effect Level / Concentration
 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 [Regulation (EC) No. 1907/2006]
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
 SDS = Safety Data Sheet
 SVHC = Substances of Very High Concern
 STEL = Short Term Exposure Limit
 TLV = Threshold Limit Value
 TWA = Time Weighted Average
 UFI = Unique Formula Identifier
 UN = United Nations
 VOC = Volatile Organic Compound
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	On basis of test data On basis of test data Expert judgment On basis of test data On basis of test data

Full text of abbreviated H statements

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

Full text of classifications [CLP/GHS]

Aquatic Chronic 2	AQUATIC HAZARD (LONG-TERM) - Category 2
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

Training advice : Ensure operatives are trained to minimise exposures.
Date of printing : 22-03-2023
Date of issue/ Date of revision : 21-03-2023
Date of previous issue : 02-11-2020
Version : 1.06
Prepared by : Kuwait Petroleum Research & Technology B.V., The Netherlands
Notice to reader

Aviation Fuel Jet A-1

SECTION 16: Other information

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Product name : Aviation Fuel Jet A-1

Section 1 - Title

Short title of the exposure scenario : Use of Kerosine as a Fuel - Industrial
List of use descriptors : **Identified use name:** Use in fuel - Industrial
Process Category: PROC02, PROC08a, PROC08b, PROC16, PROC01, PROC28
Substance supplied to that use in form of: As such
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC07, ESVOC SPERC 7.12a.v1
Article category related to subsequent service life: Not applicable.

Processes and activities covered by the exposure scenario : Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Additional information : See section 3.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:

Product characteristics : Substance is complex UVCB.. Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region: 0.1
Regional use tonnage (tonnes/year): 3.3E+05
Fraction of regional tonnage used locally: 5.0E-04
Annual site tonnage (tonnes/year): 1.6E+02
Maximum daily site tonnage (kg/day): 8.1E+03

Frequency and duration of use : Continuous release
Emission days (days per year): 20

Environment factors not influenced by risk management : Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM): 5.0E-03
Release fraction to wastewater from process (initial release prior to RMM): 1.0E-05
Release fraction to soil from process (initial release prior to RMM): 0

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%): 95
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%): 0.0
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of >= (%): 0.0

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to sewage treatment plant	: Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via municipal sewage treatment (%): 95.0 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 95.0 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): $5.0E+05$ Assumed municipal sewage treatment plant flow: (m^3/d): $2.0E+03$
Conditions and measures related to external treatment of waste for disposal	: Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 2:

General measures (skin irritants): Ensure that direct skin contact is avoided. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability): For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General measures applicable to all activities: Covers indoor and outdoor use. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

Physical state : Liquid

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other conditions affecting workers exposure : Store substance within a closed system.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation**Section 3 - Exposure estimation and reference to its source**

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2:

Exposure assessment (human): : Not available.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).
Maximum Risk Characterization Ratios for air emissions (RCR_{air}): 2.0E-04
Maximum Risk Characterization Ratios for waste water emissions (RCR_{water}): 1.6E-02

Health

: Risk management measures are based on qualitative risk characterisation.
Available hazard data do not enable the derivation of a DNEL for aspiration effects.
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
 Product name : Aviation Fuel Jet A-1

Section 1 - Title

Short title of the exposure scenario : Formulation & (Re)packing of Kerosine - Industrial

List of use descriptors : **Identified use name:** Formulation and (re)packing of substances and mixtures
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC14, PROC15, PROC05, PROC28
Substance supplied to that use in form of: As such
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02, ESVOC SPERC 2.2.v1
Article category related to subsequent service life: Not applicable.

Processes and activities covered by the exposure scenario	: Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.
Additional information	: See section 3.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:	
Product characteristics	: Substance is complex UVCB.. Predominantly hydrophobic
Amounts used	: Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.8E+06 Fraction of regional tonnage used locally: 2.0E-03 Annual site tonnage (tonnes/year): 3.7E+03 Maximum daily site tonnage (kg/day): 1.2E+04
Frequency and duration of use	: Continuous release Emission days (days per year): 300
Environment factors not influenced by risk management	: Local freshwater dilution factor10 Local marine water dilution factor100
Other conditions affecting environmental exposure	: Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 1.0E-02 Release fraction to wastewater from process (initial release prior to RMM): 2.0E-04 Release fraction to soil from process (initial release prior to RMM): 0.0001
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%): 0.0E+00 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%): 79.3 If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of >= (%): 0.0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant	: Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via municipal sewage treatment (%): 95.0 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 95.0 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): 5.1E+04 Assumed municipal sewage treatment plant flow: (m ³ /d): 2.0E+03
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 2:

General measures (skin irritants): Ensure that direct skin contact is avoided. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability): For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General measures applicable to all activities: Covers indoor and outdoor use. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

Physical state : Liquid

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other conditions affecting workers exposure : Store substance within a closed system.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2:

Exposure assessment (human): : Not available.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).
Maximum Risk Characterization Ratios for air emissions (RCR_{air}): 9.6E-04
Maximum Risk Characterization Ratios for waste water emissions (RCR_{water}): 2.4E-01

Health

: Risk management measures are based on qualitative risk characterisation.
Available hazard data do not enable the derivation of a DNEL for aspiration effects.
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Product name : Aviation Fuel Jet A-1

Section 1 - Title

Short title of the exposure scenario : Manufacture of Kerosine - Industrial

List of use descriptors : **Identified use name:** Manufacture of substance
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15, PROC09, PROC28
Substance supplied to that use in form of: As such
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01, ESVOC SPERC 1.1.v1
Article category related to subsequent service life: Not applicable.

Processes and activities covered by the exposure scenario	: Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.
Additional information	: See section 3.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:	
Product characteristics	: Substance is complex UVCB.. Predominantly hydrophobic
Amounts used	: Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.9E+06 Fraction of regional tonnage used locally: 9.5E-01 Annual site tonnage (tonnes/year): 1.8E+06 Maximum daily site tonnage (kg/day): 6.0E+06
Frequency and duration of use	: Continuous release Emission days (days per year): 300
Environment factors not influenced by risk management	: Local freshwater dilution factor10 Local marine water dilution factor100
Other conditions affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 1.0E-02 Release fraction to wastewater from process (initial release prior to RMM): 7.5E-06 Release fraction to soil from process (initial release prior to RMM): 0.0001
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%): 90 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of>= (%): 94.3 If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of>= (%): 0.0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant	: Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via municipal sewage treatment (%): 95.0 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 95.0 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): $6.7E+06$ Assumed municipal sewage treatment plant flow: (m^3/d): $1.0E+04$
Conditions and measures related to external treatment of waste for disposal	: During manufacturing, no waste of the substance is generated.
Conditions and measures related to external recovery of waste	: During manufacturing, no waste of the substance is generated.

Contributing scenario controlling worker exposure for 2:

General measures (skin irritants): Ensure that direct skin contact is avoided. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability): For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General measures applicable to all activities: Covers indoor and outdoor use. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

Physical state : Liquid

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other conditions affecting workers exposure : Store substance within a closed system.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2:

Exposure assessment (human): : Not available.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).
Maximum Risk Characterization Ratios for air emissions (RCR_{air}): 4.6E-02
Maximum Risk Characterization Ratios for waste water emissions (RCR_{water}): 8.9E-01

Health

: Risk management measures are based on qualitative risk characterisation.
Available hazard data do not enable the derivation of a DNEL for aspiration effects.
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : UVCB
Product name : Aviation Fuel Jet A-1

Section 1 - Title

Short title of the exposure scenario : Use of Kerosine as a Fuel - Professional
List of use descriptors : **Identified use name:** Use in fuel - Professional
Process Category: PROC02, PROC08a, PROC08b, PROC16, PROC01, PROC28
Substance supplied to that use in form of: As such
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b, ESVOC SPERC 9.12b.v1
Article category related to subsequent service life: Not applicable.

Processes and activities covered by the exposure scenario : Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Additional information : See section 3.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:

Product characteristics : Substance is complex UVCB.. Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region: 0.1
Regional use tonnage (tonnes/year): 1.4E+06
Fraction of regional tonnage used locally: 2.0E-03
Annual site tonnage (tonnes/year): 2.9E+03
Maximum daily site tonnage (kg/day): 7.9E+03

Frequency and duration of use : Continuous release
Emission days (days per year): 365

Environment factors not influenced by risk management : Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only): 5.0E-03
Release fraction to wastewater from wide dispersive use: 1.0E-06
Release fraction to soil from wide dispersive use (regional only): 0.00025

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%): N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%): 0.0
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of >= (%): 0.0

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to sewage treatment plant	: Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via municipal sewage treatment (%): 95.0 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 95.0 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): $7.7E+05$ Assumed municipal sewage treatment plant flow: (m^3/d): $2.0E+03$
Conditions and measures related to external treatment of waste for disposal	: Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 2:

General measures (skin irritants): Ensure that direct skin contact is avoided. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability): For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General measures applicable to all activities: Covers indoor and outdoor use. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

Physical state : Liquid

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other conditions affecting workers exposure : Store substance within a closed system.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation**Section 3 - Exposure estimation and reference to its source**

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2:

Exposure assessment (human): : Not available.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).
Maximum Risk Characterization Ratios for air emissions (RCR_{air}): 7.2E-04
Maximum Risk Characterization Ratios for waste water emissions (RCR_{water}): 1.0E-02

Health

: Risk management measures are based on qualitative risk characterisation.
Available hazard data do not enable the derivation of a DNEL for aspiration effects.
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.