| **SAFETY DATA SHEET**<br>According to REACH Regulation (EC) No 1907/2006 | **SDS N°004**<br>(Available on www.rofafrance.com) |
|---|---|
| **JET FUEL (JET A-1)**<br>**Certified Reference Materials (CRM)** | SDS Revision : 10 – Revision date : 08/10/2024<br>*Replace version dated : 24/02/2023* |

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**1.1. Product identifier** : Product name JET A-1/ Other name F35 / Mixture
**1.2. Relevant identified uses of the substance or mixture :** Laboratory use / Restricted to professional users
**and uses advised against :** None known
**1.3. Details of the supplier of the safety data sheet :**

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25160 Oye-Et-Pallet - France
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Email : contact@rofafrance.com

**1.4. Emergency telephone number**

ORFILA / Tel : 01.45.42.59.59
Carechem 24 International.
For English speaking countries +44(0)1235239670
Europe (in local languages) +33149000049
Africa and Middle East +44(0)1235239671
China 861051003039

## 2. HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture.** REGULATION (EC) No 1272/2008
*For the full text of the H-Statements mentioned in this Section, see Section*

Classification: Flammable liquids - Category 3 // Aspiration toxicity - Category 1 // Skin corrosion/irritation - Category 2 // Specific target organ systemic toxicity (single exposure) - Category 3 // Chronic aquatic toxicity - Category 2 //
*For the full text of the R-phrases mentioned in this Section, see Section 16.*

**2.2 Label elements:** Labelled according to: REGULATION (EC) No 1272/2008 EC-No 289-220-8

**Signal Word**
DANGER

SGH02 SGH08 SGH09 SGH07

| Hazard Statements | Precautionary statements |
|---|---|
| H226 - Flammable liquid and vapor<br>H304 - May be fatal if swallowed and enters airways<br>H315 - Causes skin irritation<br>H336 - May cause drowsiness or dizziness<br>H411 - Toxic to aquatic life with long lasting effects | P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.<br>P262 – Do not get in eyes, on skin, or on clothing<br>P264 - Wash hands and exposed skin thoroughly after handling<br>P280 - Wear eye protection/protective gloves<br>P301+P330 - IF SWALLOWED: rinse mouth.<br>P331 - Do NOT induce vomiting<br>P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.<br>P273 - Avoid release to the environment<br>P314+P331 – Get medical advice/attention if you feel unwell / Do NOT induce vomiting<br>P403+P235 – Store in a well-ventilated place. Keep cool<br>P501 - Dispose of contents/container in accordance with local regulation |

**2.3 Other hazards :** This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB. This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances** : Not applicable. This product is a mixture.
**3.2 Mixtures** :
Chemical nature: Kerosene (petroleum), hydro desulfurized. A complex combination of hydrocarbons obtained from a petroleum stock by treating with hydrogen to convert organic sulphur to hydrogen sulphide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range C9-C16 and boiling in the range of approximately 150-290°C

**Hazardous components**

| Chemicals Name | EC-N° | Reach Registration Number | CAS-N° | Weight % | GHS Classification |
|---|---|---|---|---|---|
| Kerosene (petroleum hydrodesulfurised) | 265-184-9 | 01-2119462828-25 | 64742-81-0 | < 100 | Flam. Liq. 3 (H226)<br>Asp. Tox. 1 (H304)<br>Skin Irrit. 2 (H315)<br>STOT SE 3 (H336)<br>Aquatic Chronic 2 (H411) |
| Kerosene (petroleum sweetened) | 294-799-5 | 01-2119502385-46 | 91770-15-9 | < 100 | Flam. Liq. 3 (H226)<br>Asp. Tox. 1 (H304)<br>Skin Irrit. 2 (H315)<br>STOT SE 3 (H336)<br>Aquatic Chronic 2 (H411) |
| Kerosene (petroleum) | 232-366-4 | 01-2119485517-27 | 8008-20-6 | < 100 | Flam. Liq. 3 (H226)<br>Asp. Tox. 1 (H304)<br>Skin Irrit. 2 (H315)<br>STOT SE 3 (H336)<br>Aquatic Chronic 2 (H411)) |

## 4. FIRST AID MEASURES

**4.1 Description of first aid measures**
4.1.1 General advice : In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.
4.1.2 Inhalation: This risk exists only if the product is sprayed or heated to a high temperature. Transport the person out of the contaminated zone, keep warm and allow to rest. If there is any suspicion of inhalation of H2S (hydrogen sulphide) rescuers must wear breathing apparatus. Obtain medical advice for further treatment.
4.1.3 Irritation of the respiratory system; narcosis.
4.1.4 Ingestion: Consult a doctor. Give nothing to drink. Do not induce vomiting to avoid the risk of aspiration into the respiratory tract. Allow the person to rest. Nausea, vomiting, abdominal pains. Take victim immediately to hospital.
4.1.5 Skin contact: Immediately remove all soiled or stained clothing. Wash immediately and abundantly with soap and water.
4.1.6 Skin: Irritation.
4.1.7 Eye contact: Wash immediately in copious amounts of water, keeping eyelids apart for at least 15 minutes and consult a specialist. Burning feeling and temporary redness.
4.1.8 Aspiration: If the product is believed to have entered the lungs (in case of vomiting, for example), take the person to hospital for immediate care.
**4.2 Most important symptoms and effects, both acute and delayed**
Eye contact: May cause slight irritation.
Skin contact: May cause skin irritation and/or dermatitis.
Inhalation: Inhalation of vapours can cause headache, nausea, vomiting and an altered state of consciousness. May cause irritation of respiration.
Ingestion: Ingestion may cause gastrointestinal, nausea, vomiting and diarrhoea. May cause central nervous system depression. If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey for 48 hours).
**4.3 Indication of immediate medical attention and special treatment needed**, if necessary
Note to doctors: Treat symptomatically. Bring this safety data sheet or the label from this product.


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## 5. FIRE FIGHTING MEASURES

**5.1 Extinguishing media**: suitable: Foam, CO2, powder, possibly water spray (preferably water containing a wetting agent).
*- not recommended:* Solid water streams are prohibited as they could help to spread the flames. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Specific fire-fighting methods: Cool down tanks and surfaces exposed to the fire by abundant spraying with water. Isolate the source of the combustible product; allow burning out under supervision or use appropriate fire extinguishers, as applicable.
**5.2 Specific hazards**: Incomplete combustion and thermolysis produce gases of varying toxicity such as CO, CO2, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled. Special care must be taken to avoid the risk of explosion. When the temperature is close to the flash point, the vapour pressure is so high that it may create an explosive atmosphere above the stored product.
**5.3 Protective measures for fire-fighters**: In case of a large or confined or poorly ventilated spaces wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Cool down any tanks and surfaces exposed to fire by spraying abundantly with water. Don't allow run-off from fire fighting to enter drains and water courses. If there is any suspicion of inhalation of H2S (hydrogen sulphide) rescuers must wear breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** No flames, no sparks, eliminate all source of ignition, don't smoke, use specific care to avoid static electrical charges, prevent any contact with hot surfaces.
For non-emergency personnel: do not attempt to act without suitable protective equipment, gloves, safety glasses. Avoid with skin and eyes.
For emergency responders: do not attempt to act without suitable protective equipment, breathing apparatus. Evacuate personnel.
**6.2 Environmental precautions:** prevent entry to sewers and public waters. Notify authorities if liquid enters servers or public waters.
**6.3 Methods and material for containment and cleaning up** : If spilled may cause the floor to be slippery. Sweep up or vacuum up the product. Dispose of contaminated material at an authorised site. Notify authorities if product enters sewers or public waters.
**6.4 Reference to other sections** : See section 13 "Disposal considerations" on handling of waste. See section 8 "Exposure controls/personal protection" for protective measures.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling :**
Advice on safe handling : Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
**7.2 Conditions for storage including any incompatibilities:**
Storage conditions : Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.
Storage class : Storage class (TRGS 510): 3: Flammable liquids
**7.3 Specific end use(s)**
This product should only be used for applications quoted in section 1.2.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**
DNELs WORKER / Derived No Effect Level

| Chemical name | Short term systemic effects | Short term local effects | Long-term systemic effects |
|---|---|---|---|
| Kerosene (petroleum hydrodesulfurised) 64742-81-0 | 3400 mg/m3 / 20 min (inhalation) | No hazard identified | 28 mg/kg/24h (oral) |
| Kerosene (petroleum sweetened) 91770-15-9 | 2800 mg/m3 / 20 min (inhalation) | No hazard identified | 28 mg/kg/24h (oral) |
| Kerosene (petroleum) 8008-20-6 | 1700 mg/m3 / 20 min (inhalation) | No hazard identified | 28 mg/kg/24h (oral) |


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PNECs / Predicted No Effect Concentration

| Chemical name | Short term systemic effects | Short term local effects | Long-term systemic effects |
|---|---|---|---|
| Kerosene (petroleum hydrodesulfurised) 64742-81-0 | 2400 mg/m3 / 20 min (inhalation) | No hazard identified | 19 mg/kg/24h (oral) |
| Kerosene (petroleum sweetened) 91770-15-9 | 1900 mg/m3 / 20 min (inhalation) | No hazard identified | 19 mg/kg/24h (oral) |
| Kerosene (petroleum) 8008-20-6 | 1500 mg/m3 / 20 min (inhalation) | No hazard identified | 19 mg/kg/24h (oral) |

**8.2 Technical measures:** Use this product in a well-ventilated atmosphere with explosion-proof equipment. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.
8.2.1 Occupational exposure limit: Protection against undesirable exposure of people and of the environment must be ensured by maintaining a strict control over the substance utilizing technical means and procedural and control technologies that reduce emissions and subsequent exposure with the objective to prevent release of the vapors into free space, penetration of the substance in water environments and soil and possible exposure of people. Areas where the substance is handled or stored must be furnished with impermeable floors and catchment basins for accidental leaks of the substance. Overall and local ventilation and effective exhaust are a must.
8.2.2 Engineering Exposure controls: Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits. When working in confined spaces ensure that there is a supply of air suitable for breathing and wear the recommended equipment. Don't enter tanks until available oxygen has been checked.
8.2.3 Respiratory protection: In case of risk of exposure exceeding the mean exposure value, an appropriate breathing apparatus must be worn by each individual.
8.2.4 Hand protection: Hydrocarbon-proof gloves for aromatic hydrocarbons. In case of splashes or limited contact: Recommended material: Nitrile > 0,3 mm / > 60 minutes (EN 374-3). - In case of prolonged or repeated contact: Recommended materials: Fluoro polymer and PVA > 480 minutes (EN 374-3), all layer thickness; Nitrile 0,5 mm / > 480 minutes (EN 374-3). For more precise details about the choice of the appropriated glove, please contact the manufacturers of protective gloves.

Eye protection / Skin and body protection / Respiratory protection

8.2.5 Hygienic work practices: Avoid contact with the skin. If the product comes into contact with the skin, wash the affected area immediately and copiously with soap and water. In case of contact with eyes, wash immediately in copious amounts of water while keeping eyelids spread apart for at least 15 minutes and consult a specialist.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**
a: Appearance: Liquid at 20°C
b: Colour: Colourless to light yellow.
c: Odour: Characteristic
d: Density/specific gravity: 770 - 850 kg/m3 at temperature 15 °C
e: Flash point: > 38 ° C (NF M 07-019)
f: Temperature auto-ignition: > 230 ° C (ASTM E 659)
g: Comments on auto-ignition temperature: This temperature may be significantly lower under particular conditions (slow oxidation on finely divided materials).
h: Comments on explosivity: Lower explosion limit 0.7% volume in air, Upper explosion limit 5.0% volume in air
i: Temperatures at phase change: Distillation range: ~160-300 ° C
j: Congealing temperature: < -46 ° C (ASTM D 2386)
k: Vapour density: > 1 (air=1)
l: Vapour pressure: < 8 hPa at Temperature 20°C
m: Solubility: - in water, practically immiscible Insoluble / in organic solvents, Soluble in many common solvents.
n: Viscosity: ~ 8,5 mm2/s at temperature -20°C
**9.2 Other information**
No data available

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** Flammable liquid and vapour.
**10.2 Chemical stability:** The product is stable at normal storage, handling and use temperatures.
**10.3 Possibility of hazardous reactions :** None known.
**10.4 Conditions to avoid:** Heat, sparks, ignition points, flames, static electricity.
**10.5 Incompatible materials :** Strong oxidising agents. Strong's acids and bases, halogens
**10.6 Hazardous decomposition products:** None under normal use.

## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 :**
Acute toxicity / Local effect: Inhalation, comments. The vapours inhaled or spray may be irritating for the respiratory tract and for mucous membranes. Vapours inhaled in strong concentration have a narcotic effect on the central nervous system, which may be light headache, dizziness, somnolence or serious fainting, in which case first aid is required rapidly.
Skin contact, comments: Irritating.
Eye contact, comments: Not classified as irritating, but may cause a burning feeling and temporary reddening.
Sensitization: Not classified as allergenic.
**11.2 Information on other hazards :**
The exposure can occur by inhalation, accidental ingestion or penetration of individual components through skin.
Symptoms and effects (acute, delayed and chronic after short-term as well as long-term exposure). Depending on the exposure dose, the substance can cause headaches, sore throat, cough, breathing difficulties, chest pressure, and disturbances of the central nervous system, nausea, sleepiness and dizziness. The related difficulties can be demonstrated by belly cramps, spontaneous vomiting or diarrhea. Direct contact with eyes or skin can cause temporary irritation manifested by reddening or swelling of the affected spot, or eye tearing, reddening and swelling. Longer exposures of skin to the substance can degrease it and cracks can appear. The substance can cause or support creation of cancer. When handling the hot (heated) product, you can get burned, which is usually manifested by hurting and reddening of your skin or, in more serious cases, by blisters.
Interactive impacts
No interactions occur if the product is used appropriately.
Endocrine disruptive properties: Contains no substances known to have endocrine disrupting properties which affect human health.

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity :** Toxic to aquatic life with long lasting effects.
**12.2 Persistence and Degradability:** Substance is a UVCB Standard tests for this endpoint are not appropriate.
**12.3 Bio accumulative potential:** Substance is a UVCB Standard tests for this endpoint are not appropriate.
**12.4 Mobility in soil:** Substance is a UVCB Standard tests for this endpoint are not appropriate.
**12.5 PBT and vPvB assessment results :** It is not suitable to compare this UVCB substance of a hydrocarbon type with the criteria pursuant to Appendix XIII to Directive (EC) No. 1907/2006 REACH, as a whole. That is why individual components were assessed with the conclusion that the product complies neither with the persistence, bio accumulation and toxicity criteria, nor with the high persistence and high bio accumulation criteria pursuant to Appendix XIII to Directive (EC) No. 1907/2006 REACH. That is the reason why the product is not identified as a PBT substance (P-persistent, B-bio accumulating, T-toxic) or vPvB substance (vP-highly persistent, vB-highly Bio accumulating).
**12.6 Endocrine disrupting properties :** The Substance is not included in the Candidate List under Article 59 (1) of the REACH due to endocrine disrupting properties.
**12.7 Other adverse effects :** This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms. This product contains substances, which may cause adverse long-term effects to the aquatic environment.

## 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**
Waste disposal: The recommended method is recycling or incineration in an approved installation.
Disposal of contaminated packaging: Empty packaging may contain flammable or explosive vapours. Hand over to an authorised waste contractor.


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## 14. TRANSPORT INFORMATION

| | 14.1 UN / ID | 14.2 UN proper shipping name | 14.3 Hazard Class(es) | 14.4 Packaging group | 14.5 Environmental hazards | Other information |
|---|---|---|---|---|---|---|
| ADR | UN1863 | FUEL, AVIATION, TURBINE ENGINE | Transport hazard class: 3<br>Label: 3<br>Classification code: F1<br>  | III | Yes | Limited quantities : 5 L |
| IMDG | | | | | | |
| IATA | | | | | | / |

**14.6. Special precautions for user :** Not applicable
**14.7 Maritime transport in bulk according to IMO instruments :** No data available.

## 15. REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Restrictions for application :**
National legislation : ICPE #4734 - Order of 1 July 2004 establishing the technical and safety rules applicable to the storage of petroleum products in places not covered by the legislation on classified installations or the regulations on establishments open to the public - Tables of occupational diseases / General scheme table 84 / Tables of occupational diseases_General scheme table 84_Illnesses caused by liquid organic solvents for professional use.
European Union: This substance has been registered according to Regulation (EC) N° 1907/2006 (REACH)
International Inventories: EINECS/ELINCS – Complies / TSCA - Complies / DSL Complies / ENCS - complies / IECSC - complies / KECL Complies / PICCS complies / AICS complies / NZiOC Complies.
**15.2. Chemical safety assessment :** No

## 16. OTHER INFORMATION

**Full text of H-phrases as mentioned in section 3 :**
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

**Safety datasheet changes**
This datasheet has been changed since last version.
Thanks to contact ROFA France by using this mail contact@rofafrance.com if you want to be informed of the changes.

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.


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