
Product	AVIATION TURBINE FUEL JET-A1	Date:	2022/11/25
		Edition:	10

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product identifier

- Trade name: Aviation turbine fuel JET A-1
- Chemical name: Kerosene (petroleum), hydrodesulfurized
- Index no.: 649-423-00-8
- EC no.: 265-184-9
- CAS no.: 64742-81-0
- Registration no.: 01-2119462828-25-0070
- UFI: Not applicable.
- Form: -
- Product code: 1000202

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

- Relevant identified uses: **Industrial:** manufacture of substances, use of substance as intermediate, formulation & (re)packing of substances and mixtures, fuel.
Professional, consumer: fuel.
- Uses advised against: **Professional, consumer:** coatings, cleaning agents, lubricants, agrochemical agents, metalworking fluids, use as binders and release agents, road and construction applications, functional fluid, manufacture and use for explosives.

1.3. Details of the supplier of the safety data sheet

- Manufacturer/supplier: **INA-Industrija nafte, d.d.**

Address: Av. V. Holjevca 10
pp 555, 10002 Zagreb, HRVATSKA

Phone: 00-385-1-6450-842 / 00-385-1-6451-075 (24 h)

Fax: 00-385-1-6452-050

Sustainable Development and Health, Safety and Environment

Phone: 00-385-1-6450-803

- email address of a competent person responsible for the safety data sheet: sds@ina.hr

1.4. Emergency Telephone Number

- Emergency Service Telephone Number: **112**
Ministry of the Interior 00-385-1-6192-929
Directorate for civil protection 00-385-1-4551-792
Operative centre for civil protection 00-385-1-4814-911
e-mail: occz@civilna-zastita.hr
- Medical Information Telephone Number: **00-385-1-23-48-342**

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SECTION 2. HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP):**

Flam. Liquid 3: H226

Skin Irrit. 2: H315

Asp. Tox. 1: H304

STOT (SE) 3: H336

Aquatic Chronic 2: H411

Full text of H-phrases: see section 16.

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 (CLP)**

Hazard pictograms:



GHS02

GHS07

GHS08

GHS09

Signal word: **Danger**

Hazard statements (H):	H226	Flammable liquid and vapour.
	H304	May be fatal if swallowed and enters airways.
	H315	Causes skin irritation.
	H336	May cause drowsiness or dizziness.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary statements (P):	P102	Keep out of reach of children.
	P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P301+	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
	P310	
	P331	Do NOT induce vomiting.
P501	Dispose of contents/container according to national legislation.	

2.3. Other hazards

No data available.

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SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

-Substance:	X		Mixture:		
- Components contributing to product hazardousness:					
Substance name	Substance identification			[%]	Classification according to Regulation (EC) No 1272/2008 (CLP)
	CAS no.	EC no.	Registration no. (REACH)		
Kerosene (petroleum), hydrodesulfurized	64742-81-0	265-184-9	01-2119462828-25-0070	100	Flam. Liquid 3; H226 Skin Irrit. 2; H315 Asp. Tox. 1; H304 STOT SE 3 (CNS); 373 Aquatic Chronic 2: H411

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

- general information: In case of ingestion, always assume aspiration into the lungs has occurred, accompanied by the pulmonary oedema hazard. Show the label on the packaging or the SDS.
- after inhalation: Remove the person from dangerous area to fresh air and observe breathing. In case of dizziness, nausea, headache, and permanent complaints immediately seek medical attention. In case of fainting transport in lateral position to hospital, paying attention to the free passing of the air thorough the respiratory tract. In case of difficulty in breathing or respiratory arrest, open airways, initiate resuscitation (heart massage and artificial respiration) and immediately seek medical attention.
- after skin contact: Remove soaked clothes and shoes and flush the sites of contact thoroughly with water and soap for at least 10 to 15 minutes. In case of redness of skin or itching immediately seek medical attention.
- after eye contact: Remove contact lenses (if present) and flush the eyes with running water for at least 15 minutes. In case of irritation, blurred vision and swelling immediately seek medical attention.
- after ingestion: Do NOT induce vomiting! Do not give anything by mouth. Always assume aspiration into the lungs has occurred. If vomiting occurs, keep the head below the level of hips in order to prevent penetration into the lungs. Immediately seek medical attention.
- personal protective equipment for first aid responder: No data available.

4.2 Most important symptoms and effects, both acute and delayed

- after inhalation: May cause headache, nausea, vomiting or altered state of consciousness.

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- after skin contact: Redness, irritation.
- after eye contact: Slight irritation (non-specific).
- after ingestion: Symptoms are not expected, if occur – nausea or diarrhoea are possible. Pulmonary oedema hazard due to aspiration into lungs.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Only qualified medical personnel should administer oxygen.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

- SUITABLE: Water mist, water spray, air foam, dry powder, CO₂. A small fire is extinguished with hand means (dry) sand or soil.
- UNSUITABLE: Water jet.

5.2 Special hazards arising from the substance or mixture:

- Hazardous combustion products: Incomplete combustion of hydrocarbons can produce smoke containing CO, CO₂.
- Hydrocarbon vapours: Flammable substance. Vapours are heavier than air and may settle to ground level and in dents; they may spread away from the site of accident and cause explosion and fire. Controlled release in sewage – danger of explosion.

5.3 Advice for firefighters:

- Firefighting measures for special hazards: Eliminate all sources of ignition and call the fire brigade, if needed. Pay special attention to risk of explosive vapour-air mixture formation at temperatures above the flash point. Substance floats on water and can re-ignite.
- Special firefighting methods: Use of water mist and water spray for cooling the surfaces exposed to heat and for protection of persons. Only persons trained in firefighting may use the water spray.
- Special protective equipment for firefighters: Self-contained open circuit compressed air breathing apparatus (HRN EN 137). Wear protective clothing for firefighters (intervention suit) in accordance with HRN EN 469.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Use personal protective equipment listed in section 8.

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- Accident prevention procedures: Ventilate thoroughly the premises at risk. Stop the leak at the source if it can be done safely. Avoid direct contact with released material. Display a visible sign prohibiting entrance, use of open flame and sparking devices. Measure the vapor concentration in the air, according to regulations. Do not smoke.
- Procedure in case of accident: Stand upwind from the spill site. Prevent product spread if this can be done in a safely manner. Identify the area of danger and prevent leaks and spills into watercourses, channels, drainage systems and soil by digging a protective ditch, setting up partitions made of bags of dry sand, soil, or clay. Ensure good ventilation. In case of larger spills notify the at the number 112.
- 6.1.2. For emergency responders: Insulate the spill area. Use personal protective equipment listed in section 8 and remove unprotected persons from the affected area immediately.
- 6.2 Environmental precautions:** Prevent product spread if this can be done in a safely manner. Insulate the spill area. Mark out the contaminated area with signs and prevent leaks and spills into watercourses, channels, drainage systems and soil by digging a protective ditch, setting up partitions made of bags of dry sand, soil, or clay. Provide good ventilation of the area.
- 6.3 Methods and material for containment and cleaning up**
- 6.3.1. For bunding, covering and capping: Dig a protective ditch around the discharge area, enclose with bags filled with dry sand, earth, or clay.
- 6.3.2. For cleaning up: Pump the product from the damaged tank into an empty tank - container with the pump designed for use in a potentially explosive atmosphere. Absorb the remainders with absorbents (sawdust, sand, mineral adsorbents, or other inert materials). Store the waste material and contaminated surface layer of soil that was removed in tightly closed containers in well-ventilated premises until disposal. Hand over for disposal to legal entities for hazardous waste disposal, authorized by the Ministry in charge of environmental protection.
- 6.3.3. Other information: Flammable liquid and vapour. In case of traffic accident, properly ground the tank truck, mark the accident area, and call the responsible person and the expert service in charge of taking care of the consequences of the accident.

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6.4 Reference to other sections: See sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Safe handling advice: Keep away from heat sources and eliminate all sources of ignition. Do not use a spark tool. Decant only in areas properly designed for the purpose according to regulations. Handle the product in well-ventilated areas. Use functioning equipment and devices. In the work area and in the warehouse, provide an impermeable, solvent-resistant floor suitable for dissipating static electricity. Ground the devices. Take measures to protect against electrostatic charge. Follow occupational safety and fire safety measures.

7.1.2 Advice on general occupational hygiene: During work, it is forbidden to smoke, eat, drink, and keep food in areas where this product is handled. Keep personal clothing separate from work clothing and product handling areas. Avoid inhalation and contact with skin and eyes. Use personal protective equipment listed in Section 8.

7.2 Conditions for safe storage, including any incompatibilities

- **SUITABLE:** Properly built and equipped containers. Make sure that receiving tank farms are below self-supporting tanks.
- **TO BE AVOIDED:** Avoid storing with other chemicals, especially flammable ones. Do not use sparking tools and equipment in storage area.

- Packaging materials

- **RECOMMENDED:** Original as made by the manufacturer with valid certification.
- **NOT SUITABLE:** Any other type of packaging material. Re-loading into other tanks, e.g., replacement tanks, damaged or not adequate tanks is not allowed.

7.3 Specific end use(s): No data available.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Hazardous substance (CAS No.)	Occupational exposure limit values/short term values (OEL/STEL)		Biological limit values
	ppm	mg/m ³	
-	-	-	-

- **Monitoring procedures:**

8.2. Exposure controls

- **Summary of risk management measures:** Ensure good ventilation / air outlet in work area.

8.2.1 Occupational exposure controls

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- Description of operating procedure and technological control:

Ensure good ventilation / air outlet in work area. Adopt personal hygiene measures: wash the hands after contact with the fuel, especially before eating, drinking and/or smoking. Regularly maintain and wash the clothing and equipment after use to remove dirt. Properly dispose of the contaminated clothing and equipment. Maintain cleanliness in accordance with good practice. Educate the employees on the hazards and control measures. Test and maintain the equipment used when handling the product: for example, personal protective equipment, ventilation system.

8.2.2 Personal protective equipment

- respiratory protection: If the concentration is higher than permitted, use a protective full-face mask (HRN EN 136/AC) with a filter type A and threaded connection complying with the HRN EN 14387 and HRN EN 143 standards. During the fire, it is mandatory to use a self-sustained open-circuit compressed-air breathing apparatus (HRN EN 137).
- hand protection: Protective gloves made of stable and impervious material such as nitrile rubber, neoprene, PVC (HRN EN 374).
- eye/face protection: Protective goggles or a visor (HRN EN 166).
- skin and body protection: Protective clothing and footwear, nitrile rubber apron, chemical protective suit (where there is a risk of splashing).
- **Special hygienic and safety precautions:** Maintain the prescribed hygiene standards for working with hazardous substances. Remove contaminated clothing and footwear. Regularly inspect and maintain equipment and devices with running water. When handling this product, smoking, and eating and drinking are prohibited. Always wash your hands before breaks and at the end of work.

8.2.3 Environmental exposure controls

- **Summary of risk management measures:** No data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

- physical state: liquid
- colour: colourless, transparent, clear
- odour: specific
- odour threshold: No data available.
- pH value (indicate conc. and temp.): Not applicable.
- melting point/freezing point: °C ≤ -47,0
- boiling point/boiling range: °C 145 – 300 (maximum)
- flash point: °C 38,0 (minimum)
- evaporation rate: No data.
- flammability (solid, gas): Not applicable.
- explosive limits: vol. % No data.
- vapour pressure: kPa No data.

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- vapour density at 15°C:	kg/m ³	Not applicable.
- relative density:		Not applicable.
- density at 15°C:	kg/m ³	775,0 – 840,0
- solubility (indicate solvent):	g/L	Not applicable.
- solubility in water:	g/L	Insoluble.
- partition coefficient n-octanol / water	logPow	Not applicable.
- auto ignition temperature:	°C	260 – 410 (from literature)
- decomposition temperature:	°C	No data.
- kinematic viscosity at 40 °C:	mm ² /s	<8,000
- oxidizing properties:		Not applicable.
- conductivity:	pS/m	50-600

9.2. Other information:

No data available.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity:	Stable under recommended handling and storage conditions.
10.2 Chemical stability:	Stable under recommended handling and storage conditions.
10.3 Possibility of hazardous reactions:	Potentially hazardous reactions are not known.
10.4 Conditions to avoid:	Sources of heat, flame, spark.
10.5 Incompatible materials:	Strong oxidants.
10.6 Hazardous decomposition products:	None in standard operating conditions and in proper storage; however thermal decomposition may generate harmful gases including carbon-monoxide, CO), sulphur oxides (SOx).

SECTION 11. TOXICOLOGICAL INFORMATION

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

- Acute toxicity

- oral (LD ₅₀):	>5000 mg/kg body weight (rat)
- inhalation (LC ₅₀):	>5,28 mg/l (rat)
- dermal (LD ₅₀):	>2000 mg/kg body weight (rabbit)

- Corrosion/Irritation

- skin:	Skin irritant. (H 315)
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- Repeated dose toxicity No data available.

- Serious damage/irritation

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- eyes: No data available.
- **Sensitisation**
- skin: No data available.
- respiratory tract: No data available.
- **Germ cell mutagenicity:** Not mutagenic.
- **Carcinogenicity:** Not carcinogenic (inhalation).
- **Reproductive toxicity:** No data available.
- **STOT (SE):** May cause drowsiness and dizziness (H336).
- **STOT (RE):** No data available.
- **Aspiration hazard:** May be fatal if swallowed and enters airways (H304).
- Information on likely routes of exposure: No data available.
- Symptoms related to the physical, chemical and toxicological characteristics: No data available.
- Delayed and immediate effects as well as chronic effects from short and long-term exposure: No data available.
- 11.2. Information on other hazards**
- Endocrine disrupting properties: No data available.
- Other information: No data available.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

- to aquatic organisms: EL50 48h (Daphnia magna) = 1,4 mg/l
LL50 48h (Oncorhynchus mykiss) = 2 – 5 mg/l
EL50 24h (Pseudokirchneriella subcapitata) = 1 – 3 mg/l
- to ground organisms: No data available.
- to plants and land animals: No data available.

12.2. Persistence and degradability

- biodegradation: No data available.
- other degradation processes: No data available.
- degradation in wastewater: Toxic for water environment with long-lasting effects.

12.3. Bioaccumulative potential

- bio-concentration factor (BCF): No data available.

12.4. Mobility in soil

- Known or predicted distribution in environmental compartments: No data available.
- surface tension: No data available.

Method: No data available.

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- absorption/desorption: No data available.

- other physical and chemical properties: See Section 9.

12.5. Results of PBT and vPvB assessment

- data from chemical safety report: UVCB substance, standard tests for biodegradation and bioaccumulation are not suitable for complex substances. Based on available compositional data and measured or predicted data on key constituents, the jet fuel is not expected to meet the criteria for degradation but is essentially biodegradable. Kerosene compositions show measured or predicted values for log Kow greater than 4 and are considered potentially bioaccumulative.

12.6. Endocrine disrupting properties: No data available.

12.7. Other adverse effects: No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Waste shall be handed over to the person authorised for waste collection, disposal, or recovery. If possible, the waste shall be recovered.

- **Waste codes:** 13 07 03* other fuels (including mixtures)

- **Waste from residues:** There is no classic waste from this product except in case of unintentional release. For such cases see Section 6.

- **Contaminated packaging:** Not applicable.

- **Relevant provisions:** Act on Waste Management, Ordinance on waste management.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number or ID number: **1863**

14.2 UN proper shipping name: AVIATION TURBINE FUEL

14.3 Transport hazard class(es)

ADR/RID/ADN/ICAO/IATA: 3

IMDG: 3

14.4 Packing group

ADR/RID/ADN/IMDG/ICAO/IATA: III

14.5 Environmental hazards

ADR, RID, ADN, ICAO/IATA: YES

IMDG: maritime pollutant

14.6 Special precautions for user

ADR Transport category: 3	RID Transport category: 3
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Vehicle for tank carriage: FL Tank code: LGBF Tunnel restriction code: (D/E) Label: 3 Classification code: F1 Hazard identification: 30 Special provisions: 640, V12, S2	Tank code: LGBF Label: 3 Classification code: F1 Hazard identification: 30 Special provisions: W12
ADN Label: 3 Additional requirements/Remarks: 14, 29 Dangers: 3+(N1, N2, N3, CMR, F) Equipment required: PP, EX, A. Classification code: F1 Carriage permitted: T Type of tank vessel: C/2 Anti-explosion protection required: yes Maximum degree of filling in %: 97	IMDG Subsidiary risk: maritime pollutant Group of the cargo: category A Special provisions: 144, B1, IB3, T2, TP2 EmS: F-E, S-E Segregation group: A
ICAO Label: 3 Cargo IMP code: RFL Passenger and cargo aircraft: 60 L Cargo aircraft only: 220 L ERG code: 3L	

14.7 Maritime transport in bulk according to IMO instruments

Trade name:	Not applicable.
Pollution category (according to MARPOL, Annex II):	Not applicable.
Vessel type (according to IBC Code):	Not applicable.
Special and operative requirements (according to IBC Code):	Not applicable.

15. REGULATORY INFORMATION

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

- Applicable EU regulations:

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) and 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 (CLP); Commission Regulation (EU) 2020/878 of 18

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June 2020 amending Annex II to Regulation (EC) No 1907/2006 (REACH).

- Applicable national regulations: Act on Chemicals; Ordinance on workers protection to dangerous chemicals exposure during work, exposure limit values and biological limit values; Act on Waste Management, Ordinance on waste management.

- Authorization information: -

- Restriction information: -

15.2 Chemical Safety Assessment

- Chemical Safety Assessment carried out (CSA): YES X NO

16. OTHER INFORMATION

Revision indicators

Section: **Subject of change:**
Aligned with Commission Regulation (EU) 2020/878.

Full text of H- phrases

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

Abbreviations and acronyms:

ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS number Chemical Abstract Service number
CLP Classification, Labelling and Packaging of substances and mixtures
CSA Chemical Safety Assessment
CSR Chemical Safety Report
EC number European Community number for identification of chemical substances commercially available in the EU
IATA International Air Transport Association
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods Code transport
LC50 Lethal concentration for 50% of tested organisms
LD50 Lethal concentration for 50% of tested organisms (medium lethal concentration)
OIN Oil industry notes

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PBT	Persistent, bioaccumulative and toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT (SE)	Specific Target Organ Toxicity (Single Exposure)
STOT (RE)	Specific Target Organ Toxicity (Repeated Exposure)
UFI	Unique formula identifier (according to section 5. Part A of Annex VIII of Regulation (EU) no. 1272/2008)
UVCB	Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	Very persistent and very bioaccumulative

Statement:

This SDS is in compliance with the EU Regulation No. 1907/2006 and No. 1272/2008 of the European Parliament and the Council. It contains important user health and safety and environmental protection information. The information provided herein is not a substitute for any specification of quality and should not be deemed as a guarantee of the adequacy and applicability of this product for any purpose whatsoever. All information provided herein is based on our current knowledge and compliant with applicable legal regulations. The user is responsible for adherence to relevant legal regulations.

Data source:

1. www.hzt.hr
2. <http://echa.europa.eu/hr>
3. Handbook – Identified Uses of Petroleum Substances 2021 Dossier Update, Concawe, September 2021
4. Hazard Classification and Labelling of Petroleum Substances in the EEA - 2021, Concawe
5. First Aid Reference Guide – 2021 update

APPENDIX: EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT
