

Product	AVIATION TURBINE FUEL JET A-1	Date:	22.12.2020.
		Edition:	9

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
- **Product code:** 1000202

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

- **Relevant identified uses:** **Industrial:** manufacture of substance, 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. Većeslava Holjevcica 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 **e-mail:** sds@ina.hr
- **Responsible person:** **SD & HSE**
Mirela Mavrinac, B.Sc. Tel. 00-385-1-6450-803
Hrvoje Raukar, B.Sc.

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**

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP/GHS):

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Flam. Liq. 3; H226
 Skin Irrit 2; H315
 Asp. Tox. 1; H304
 STOT 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/GHS)

Hazard pictograms:



GHS02 GHS08 GHS07 GHS09

Hazard pictograms:

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P301+ P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
	P331	Do NOT induce vomiting.
	P501	Dispose of contents/container according to legislation.

2.3. Other hazards

No data.

COMPOSITION / INFORMATION ON INGREDIENTS			
Substance:	X	Mixture:	
Components contributing to product hazardousness:			
Substance name	Substance identification	[%]	

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	CAS no.	EC no.	Registration no. (REACH)		Classification according to Regulation (EC) No 1272/2008 (CLP/GHS)
Kerosene (petroleum), hydrodesulfurized	64742-81-0	265-184-9	01-2119462828-25-0070	100	Flam. Liq. 3; H226 Skin Irrit 2; H315 Asp. Tox. 1; H304 STOT 3; H336 Aquatic Chronic. 2; H411

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 headache, dizziness, nausea 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: Take off the contaminated clothes and footwear. Thoroughly rinse with water and soap for 10 - 15 minutes. In case of swelling, redness or itching immediately seek medical advice.
- 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 invoke 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.

4.2 Most important symptoms and effects, both acute and delayed

- after inhalation: May cause drowsiness, dizziness, vomiting or changed state of consciousness.
- after skin contact: Redness, irritation.
- after eye contact: Slight irritation (non-specific).
- after ingestion: Symptoms are not expected, if occur – dizziness 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.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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- SUITABLE: Water mist, water spray, air foam, dry sand, CO₂, exceptionally in case of small fires dry soil or sand.

- UNSUITABLE: Water jet.

- Firefighting measures for special hazards: Remove all ignition sources, if necessary, call firemen. Special care should be taken of the fact that there is a permanent danger of creation of explosive mixture with the air above flash point temperature. Substance floats on water and can re-ignite.

- Special firefighting measures: Use water mist and water spray for cooling the surfaces exposed to heat and for protection of people, only by persons trained in fire protection.

- Special fire fighter protective equipment: Self-sustained open-circuit compressed-air breathing apparatus (HRN EN 137). Wear protective clothing for firefighters (intervention suit) in accordance with HRN EN 469.

5.2 Special hazards arising from the substance or mixture: Vapours, being heavier than air, stay close to the ground and in recesses, can expand further from the incident site and cause explosion or fire.

5.3 Advice for firefighters: For smaller fires use dry sand or soil. Controlled release in sewage – danger of explosion. During combustion carbon compounds are created (carbon dioxide and carbon monoxide).

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Rooms at risk must be thoroughly vented. Stop leakage at the point of release, if this can be done in a safe manner. Avoid direct contact with released material. Exhibit a sign of prohibited entry and work with open flame and sparking devices on a visible location. Measure the concentration of vapours in the air, in line with regulations. Do not inhale vapours, evaporation. Do not smoke. Stand upwind from the spill site. Use personal protection equipment listed in Section 8.

6.2 Environmental precautions: Mark the risk area and prevent discharging and spilling into watercourses, canals, drainage systems and soil by digging out a protective ditch, fencing it with bags filled with dry sand, earth or clay. Provide good ventilation of the area. In case of major leaks notify the Emergency Service by dialling 112.

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6.3 Methods for cleaning-up and recovery:

Use safety-type pump for reloading from the damaged tank into an empty tank / tank truck / tank car. Remove remainder from the ground using adsorption agents (sawdust, mineral adsorbents, and other inert materials). Place the waste material and removed contaminated surface soil level into well-closed tanks to be stored in well-vented rooms until disposal to be done by legal entities for disposal of hazardous waste, authorized by the Ministry in charge of environmental protection.

- Additional warnings:

In case of traffic accident properly ground the tank car, mark incident area and call responsible person and expert service in charge for disposal of accident consequences.

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

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1 Safe handling advice:

Keep far from heat sources and ignition sources. Do not use sparking tools. Re-loading i.e. unloading/loading shall be performed at the sites designed for the purpose. Manipulate with the product in well ventilated premises. Use devices and equipment in good working order. Work room/area and storage area shall be provided with impermeable floor, resistant to solvents that enables bypassing the static electricity. Ground devices. Take measures against electrostatic charge. Observe measures for occupational safety and fire protection.

7.1.2 Advice on general occupational hygiene:

Prohibited smoking, eating, drinking during the work, as well as keeping food in areas where the product is handled. Personal clothes shall be kept separately from the work clothes and workplace. Avoid contact with skin and eyes. Use personal protection equipment from 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.
- NOT SUITABLE: 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

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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

- 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 fuel: for example, personal protective equipment, ventilation system.

8.2.2. Personal protective equipment for

- respiratory tract protection: If the concentration is higher than permitted, use a protective full-face mask (HRN EN 136/AC) with a filter A and a 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 protection: Protective goggles or a visor (HRN EN 166).
- skin and body protection: Protection clothing and apron, apron made of nitrile rubber, chemical protective suit (where there is a risk of splashing).
- **Special hygienic and safety precautions:** Regularly maintain the prescribed hygiene standards for working with hazardous substances. Remove contaminated clothing and footwear. Inspect the equipment and devices regularly and maintain with running water.
Do not smoke, eat, and drink when handling the product. Wash hands before breaks and at the end of work.

8.2.3 Environmental exposure controls

- Summary of risk management measures: No data.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

- state: liquid
- colour: colourless, transparent, clear
- odour: specific
- odour threshold: No data.

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- pH value (indicate conc. and temp.):		Not applicable.
- Melting point/freezing point:	°C	≤ -47
- boiling point/boiling range:	°C	145 – 300
- flash point:	°C	38,0 (lowest)
- Evaporation rate:		No data.
- flammability (solid, gas):		Not applicable.
- explosive limits:	vol. %	No data.
- vapour pressure:	kPa	No data.
- 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	Not applicable.
- partition coefficient n-octanol / water	logPow	Not applicable.
- auto ignition temperature:	°C	260 – 410 (from literature)
- disintegration temperature:	°C	No data.
- viscosity (kinematic) at -20°C:	mm ² /s	< 8,000
- oxidizing properties:		Not applicable.
- conductivity:	pS/m	50 – 600

9.2. Other information

No data.

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 (SO _x).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

- Acute toxicity

- oral (LD₅₀): > 5000 mg/kg body mass (rat)
- inhalation (LC₅₀): > 5,28 mg/L (rat).

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- dermal (LD₅₀): > 2000 mg/kg_{body mass} (rabbit).
- Irritation/Corrosion**
 - skin: Skin irritant. (H315)
 - eyes: No data.
 - respiratory tract: No data.
- Sensitisation**
 - skin: Sensitive people may experience redness and dermatitis.
 - respiratory tract: No data.
- Aspiration hazard:** May be fatal if swallowed and enters airways. (H304)
- Other classic effects: (e.g. unconsciousness, particularly toxic metabolites, etc.):** No data.
- Permanent effects due to acute or chronic exposure:** No data.
- Special effects**
 - mutagenicity: Not mutagenic.
 - carcinogenicity: Not carcinogenic.
 - fertility decrease: No data.
 - harmful effect on unborn child: No data.
 - toxicity to reproduction: No data.
 - other (e.g. endocrine disruptors): No data.
 - STOT (SE): May cause drowsiness or dizziness. (H336)
 - STOT (RE): No data.
- Prohibitions and restrictions:** No data.
- Other:** No data.

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.
- to plants and land animals: No data.

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

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

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12.4. Mobility in soil

Method: No data.

- Known or predicted distribution in environmental compartments:

No data.

- surface tension: No data.
- absorption/desorption: No data.
- other physical and chemical properties: See section 9.

12.5. Results of PBT and vPvB assessment

- data from chemical safety report: Based on available data on composition and anticipated data on key components, it is not expected that jet fuel satisfies criteria for degradation but is in fact biodegradable. Kerosene components show measured or anticipated values for log Kow larger than 4 and are considered as potentially bio accumulative.

12.6. Other adverse effects: No data.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: There is no classic waste from this product except in case of unintentional release (see section 6.).

- **Waste codes:** 13 07 03* other fuels (including mixtures)
- **Waste from residues:** Not applicable.
- **Contaminated packaging:** Not applicable.
- **Relevant provisions:** Act on Sustainable Waste Management, Regulation on waste catalogue, Ordinance on waste management.

14. TRANSPORT INFORMATION

- 14.1 UN 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: YES
- 14.6 Special precautions for user**
 - ADR** RID
 - Transport category: 3 Transport category: 3
 - Vehicle for tank carriage: FL Tank code: LGBF

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Tank code: LGBF

Label: 3

Tunnel restriction code: (D/E)

Classification code F1

Label: 3

Hazard identification: 30

Classification code: F1

Special provisions: W12

Hazard identification: 30

Special provisions: 664, S2

ADN

IMDG

Label: 3

Subsidiary risk: maritime pollutant

Additional requirements/Remarks: 14

Group of the cargo: A

Dangers: 3 + (N1, N2, N3, CMR, F)

Special provisions: 144, B1, IB3, T2, TP2

Equipment required: PP, EP, EX, TOX, A

EmS: F-E; S-E

Classification code: F1

Segregation group: A

Carriage permitted: T

Type of tank vessel: C/2

Anti-explosion protection required: yes

Maximum degree of filling (%): 95

ICAO

Label: 3

Cargo IMP code: RFL

Passenger and cargo aircraft: 60 L

Cargo aircraft only: 220 L

ERG code: 3 L

14.7 Transport in bulk condition according to MARPOL Convention, Annex II and IBC Codex

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:

EU Regulation No. 1906/2007 and No. 1272/2008 of the European Parliament and the Council; Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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- **Applicable national regulations:** Chemicals Act; Ordinance on workers protection to dangerous chemicals exposure during work, exposure limit values and biological limit values

- **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:
1	Chemical name of the product, relevant uses and uses advised against, telephone numbers of emergency service.
3	Product composition.
4	Most important symptoms and effects, acute and postponed.
13	Waste code added and legal provisions updated.
14	Updated in accordance with revised ADR.
15	Data on provisions updated.

Full text of H- phrases, EUH- and P-phrases

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.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P501	Dispose of contents/container according to legislation.

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

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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
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)
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. Hazard classification and labelling of petroleum substances in the EEA, Concawe; October 2020
4. Handbook – Identified Uses of Petroleum Substances, Concawe; October 2019

APPENDIX: EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT