Product	AVIATION TURBINE FUEL JET A-1	Date:	02/06/2009
		Edition:	6/06/09

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

- Trade name: Aviation turbine fuel JET A-1 **CAS: 8008-20-6**

- Chemical name: Kerosene (refined lamp oil)

- Product code: 1000202

- Registration number:

- Product use: As fuel for turbojet and turboprop engines.

- Producer/supplier: **INA-INDUSTRIJA NAFTE d.d.**

Address: Av. Većeslava Holjevca 10, P.O.B. 555, 10002 Zagreb, CROATIA

Phone 00-385-1-6450-842 / 00-385-1-6451-075 (0-24 h)

Fax 00-385-1-6452-050 **e-mail:** sds@ina.hr

- Responsible person: **Organisational Design and Process Management Sector**
Hrvoje Raukar, B.Sc. Tel. 00-385-1-6450-602
Tatjana Benko, B.Sc.

- Emergency Service Telephone Number: **112**

National Protection and Rescue Directorate	00-385-1-3650-011
Nehajska 5, 10000 Zagreb	00-385-1-3650-084
e-mail: info@duzs.hr	00-485-1-3650-082
	00-485-1-3650-083

- Medical Information Telephone Number: **00-385-01-23-48-342**

2. HAZARDS IDENTIFICATION

- Classification of substances/preparations (per hazard):

- The most important hazards and effects:

Human health hazards:	May cause damage to lungs if ingested! Frequent exposure may cause skin drying or cracking.
Environmental hazards:	Toxic for aquatic organisms; may have long-term harmful effect in water.
Physical and chemical hazards:	Flammable! See item 9.

- Special hazards: See item 10.

- Main symptoms of effects:

Inhalation:	Headache, dizziness. High vapour concentrations may cause depression of central nervous system.
Skin:	Redness and degreasing effect. Frequent exposure may cause skin drying or cracking.
Eyes:	Redness, pain.
Ingestion:	Nausea, vomiting, diarrhea. May cause damage to lungs!

- Overview of special conditions: None

3. COMPOSITION / INFORMATION ON INGREDIENTS

- Substance: [X] **Preparation:** [ ]

- Components contributing to product hazardousness:

Name of the substance	Concentration [%]	EINECS number	CAS number	Hazard symbol	Risk phrase	Registration number
Aviation turbine fuel	≤ 100	232-366-4	8008-20-6	Xn	R: 65	

4. FIRST-AID MEASURES

- General information:

- First-aid procedures:

after inhalation: Carry the afflicted person to fresh air. If he/she is not breathing, apply CPR and seek medical assistance at once.

after skin contact: Take the contaminated clothes off and wash the skin thoroughly with water and soap.

after eye contact: Rinse well with running water for 15-20 minutes. If irritation persists, seek medical assistance.

after ingestion: DO NOT induce vomiting! May cause damage to lungs! Urgently seek medical assistance and show the label or this container.

- Note to first-aider/physician: See items 2 and 3.

5. FIRE-FIGHTING MEASURES

- Extinguishing media:

SUITABLE: Heavy air foam, powder, CO_2, water mist.

NOT SUITABLE: Water jet/spray.

- Fire-fighting measures for special hazards: Remove all ignition sources, immediately call firemen and police.

- Special fire-fighting measures: Use water mist and water spray for cooling the surfaces exposed to heat and for protection of people. Only those who are trained in fire protection may use water spray (dispersed water).

- Fire-fighting special safety equipment: Self-sustained open-circuit compressed-air breathing apparatus (HRN EN 137/AC: 2006), heat radiation protection kit.

- Special exposure hazards: Vapours, being heavier than air, stay close to the ground and in recesses, so they may spread farther from the place of accident, causing explosion and fire.

- Other information:

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions: Rooms at risk shall be thoroughly vented. Exhibit a sign of prohibited entry and work with open flame and sparking devices. Do not smoke. Stand upwind in respect of the release point. Use personal protective equipment from item 8.

- Environmental precautions: Define the risk area and prevent discharging/leaking/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/rooms. In case of major leaks, notify the Emergency Service by dialling 112.

- 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, authorised by the Ministry in charge of environmental protection.

- Additional warnings: In case of traffic accident, tank truck / tank car shall be properly grounded, accident area marked, and authorised person summoned same as the expert service for taking care of accident consequences.

7. HANDLING AND STORAGE

- Handling:

Safety precautions Keep far from heat sources and eliminate immediately all ignition sources. Re-loading i.e. unloading/loading shall be performed at the sites designed for the purpose, ensuring the air ventilation/outlet. Do not use sparking tools, Use the equipment and devices in good working order. Work room/area shall be provided with impermeable floor, resistant to solvents and suitable for bypassing the static electricity. Equipment shall be grounded.

Safe handling advice 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.

Obligatory wearing of the prescribed work clothes, protective gloves, and goggles made of resistant materials (viton, butyl rubber, nitrile rubber, PVC).

- Storage: technical measures and storage conditions:

SUITABLE: Store in well sealed tanks, properly manufactured and equipped. Provide room/area ventilation. Take measures against the static electricity charge. Provide containment enclosures around self-supporting tanks.

TO BE AVOIDED: Storage in the same room/area with other chemicals, particularly those that may cause fire. Use of sparking tools or devices/equipment that may produce sparks in storage area.

- Packaging materials:

RECOMMENDED: Original, supplied by the producer.

NOT SUITABLE: Reloading into other tanks: replacement, damaged, or inadequate ones.

- Special use:

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1.Exposure limit values

Hazardous substance	Limit values for exposure (Croatia) ppm	Biological limit values

- Monitoring procedures

8.2. Exposure control

- Summary of risk management measures:

8.2.1. Occupational exposure control

- Description of operating procedure and technological control:

Provide good ventilation of premises/area.

- Personal protective equipment:

Respiratory tract protection: At high vapour concentrations, obligatory wearing of protective masks for the whole face (HRN EN 136/EC: 2006) with filter A (HRN EN 14387). In case of fire, self-sustained open-circuit compressed-air breathing apparatus (HRN EN 137/AC: 2006).

Hand protection: Protective gloves (HRN EN 420/AC: 2007) made of neoprene, nitrile rubber PVA, PVC.

Eye protection: Protective/safety goggles with side guards/shields.

Skin and body protection: Protective clothes and footwear made of resistant materials (viton, butyl rubber, nitrile rubber, PVC)

- Special hygienic and safety precautions: When handing this product, smoking, eating and drinking are prohibited. After each interruption of work, washing of hands is obligatory. Equipment and devices shall be regularly inspected and maintained with running water.

8.2.2. Environmental exposure control

- Summary of risk management measures

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1.General information:

- State: Liquid
- Colour: Colourless, transparent, and clear
- Odour: Specific

9.2. Important health, safety and environmental information:

- pH value:		Not applicable
- Boiling point/Boiling range:	°C	145.0 – 300.0
- Flash point:	°C	38.00 (min)
- Flammability (solid, gas):		Not applicable
- Explosive properties:	vol. %	0.7 – 5.0
- Oxidizing properties:		Not applicable
- Vapour pressure:	Pa	140
- 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
- Viscosity at -20°C:	mm^2/s	< 8.000
- Vapour density:	kg/m^3	Not applicable
- Volatility:		No data

9.3 Other data:

- Melting point/Melting range:	°C	-48 to -26
- Disintegration temperature:	°C	No data
- Auto-ignition temperature:	°C	260 – 410
- Conductivity		Not applicable
- Miscibility		Not applicable
- Freezing point	°C	< - 47 (max)

10. STABILITY AND REACTIVITY

- Stability:	Stable when meeting the prescribed storage and use requirements.
- Conditions to avoid:	Heat sources, flame, spark, and increased temperatures.
- Materials to avoid:	Strong oxidants.
- Hazardous decomposition products:	Carbon and sulphur oxides, as well as smoke.
- Special hazards	

11. TOXICOLOGICAL INFORMATION

- Acute toxicity:

Oral (LD_{50})	> 2000 mg/kg
Inhalation (LC_{50})	No data
Dermal (LD_{50})	> 2000 mg/kg

- Local effects:

Skin irritation	Redness, degreasing effect.
Eye irritation	Redness, pain.
Skin sensitization	In sensitive persons, may cause redness and dermatitis.
Inhalation sensitization	No data

- Chronic poisoning or long exposure: Frequent exposure may cause skin dryness or cracking.

- Exposure effects

Single-term:	High concentrations of vapour may cause depression of central nervous system (dizziness, headache, nausea, fainting).
Recurrent:	Frequent exposure may cause drying or cracking of skin.
Long-term:	No data.

- Momentary effects: May cause damage to lungs if ingested!

- Delayed effects: No data.

- Special effects

(carcinogenicity, mutagenicity and toxicity for reproduction): No data.

12. ECOLOGICAL INFORMATION

- Mobility:

Known or predicted distribution to environmental compartments	Due to minor density, remains on water surface from where it evaporates relatively quickly. If major quantities get spilled, due to oxygen lack, may have a harmful effect on aquatic organisms.
Surface tension	No data.
Soil absorption/desorption	No data.
Other physical and chemical properties	See item 9.

- Persistence/degradability:

Biotic or abiotic degradation	No data.
Aerobic or anaerobic degradation	No data.
Persistence	No data.

- Bio-accumulation:

bio-concentration factor (BCF) No data.

- Results of PBT assessment:

- Product effect on the environment:

Water	Toxic for aquatic organisms; may have a long-term harmful effect in water.
Air	No data.
Soil	There is a risk of groundwater pollution if major quantities penetrate into the soil.

- Eco-toxicity:

For aquatic organisms (LD_{50})	1-100 mg/L (*Daphnia magna)*
For ground organisms (LD_{50})	No data.
For plants and land animals (LD_{50})	No data.

- Other harmful effects: No data.

13. DISPOSAL CONSIDERATIONS

- Preferred disposal considerations:

Waste from residues:	Product has no classic waste except in case of accidental release/discharging in which case see item 6. Thermal treatment is foreseen for polluted/contaminated residues.
Contaminated packaging:	No applicable.
Local applicable regulations:	Law on Waste (OG 178/04, OG 153/05, OG 111/06 and OG 60/08); Decree on Categories, Types, and Classification of Waste with Waste Catalogue and Hazardous Waste List (OG 50/05, OG 39/09) Regulations on Waste Management Requirements (OG 123/97, OG 112/01); Decree on Hazardous Waste Management Requirements (OG 32/98).

Obligatory compliance with the EU, national, and/or local laws and regulations. User shall be responsible for knowledge of all relevant national and local regulations.

14. TRANSPORT INFORMATION

- Transport classification signs:

- Name of hazardous chemical according to international contracts on transport of hazardous substances:

Road/Rail transport (ADR / RID):

UN number: 1863 class: 3 packaging group: I

Inland Waterway (ADNR):

UN number: 1863 class: 3 packaging group: I

Sea transport (IMDG):

UN number: 1863 class: 3 packaging group: I

Air transport (ICAO/IATA):

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UN number: 1863 **class: 3** **packaging group: I**

- Additional regulations: Law on Transportation of Hazardous Substances (OG 79/07); European Agreement on International Road Transportation of Hazardous Substances (ADR – Appendices A and B) (OG ID 11/08); Regulations on the Manner of Hazardous Substance Road Transportation (OG 53/06); Regulations on Handling of Hazardous Substances, Conditions and Manner of Hazardous Substance Maritime Transportation, Loading and Unloading of Hazardous Substances, Bulk and Other Cargo in Ports, and Manner of Preventing Expansion of Spilled Oils in Ports (OG 51/05).

- Special precautions and transport conditions: Fire risk 3; health risk 2

15. REGULATORY INFORMATION

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

- Data on hazards and safety measures (according to label):

Danger symbol

Harmful

Risk phrases	R:	65	Harmful: may cause lung damage if swallowed.
Safety phrases	S:	2	Keep out of the reach of children.
		23	Do not breathe gas/fumes/vapour/spray.
		24	Avoid contact with the skin.
		62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

- Applicable provisions, regulations and directives: Law on Chemicals (OG 150/05, OG 53/08); Regulations on Classification, Designation, Labeling, and Packing of Hazardous Substances (OG 23/08); Regulations on Limit Values of Exposure to Hazardous Substances at Work and on Biological Limit Values (OG 13/09); Regulations on Filling-out the Safety Data Sheet (OG 39/09).

16. OTHER INFORMATION

Risk phrases (for ingredients)

Safety phrases (for ingredients)

Statement:

This SDS is in compliance with Croatian legislation. Users are responsible for adherence to local laws and regulations. SDS contains information important for users' health and safety, as well as environmental protection. Data contained in this document correspond to our knowledge acquired on the product so far. The product should not be used for the purposes other than those mentioned in instructions. In case of mixing with other products, existence of additional risks/hazards should be checked. We shall assume no responsibility for any failure to meet the requirements of this SDS.

1. Aviation fuel quality requirements for jointly operated systems (AFQRJOS) / Issue 22, 28 June 2007
2. http://ecb.jrc.it/esis/
3. Concawe, Classification and labelling of petroleum substances according to the EU dangerous substances directive, July 2005, report no. 6/05
4. Petroleum products-first aid emergency and medical advice, report no. 1/97, March 1997
5. Exposure profile: kerosines/jet fuels, report no. 52/99, April 1999

Revision indicators:

Edition 6 of this SDS, compared to Edition 5, is a completely new edition meeting the requirements of Regulations on Filling-out the Safety Data Sheet (OG 39/09) and Regulation (EC) No. 1907/2006 .

Section: **Subject of change:**

APPENDIX:
EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT