



PERTAMINA
Direktorat – Pemasaran Dan Niaga

Tanggal Pembuatan :
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MATERIAL SAFETY DATA SHEET (MSDS)

1. MATERIAL IDENTIFICATION

PRODUCT NAME : AVTUR
OTHER NAME : JET FUEL
PRODUCER : PERTAMINA
Jl. Perwira No.4
Jakarta Pusat Post Code 10110
Phone Number : 021 – 3815509, Facsimile : 3455344
Emergency Telephone Number within 24 hours : 021 – 3816732
MSDS Information Telephone Number: 021- 3815578 / 3815504

2. MATERIAL COMPOSITION/IDENTITY INFORMATION

Composition : Hydrocarbon and Additive

3. HAZARD IDENTIFICATION

Hazard Communication Standard : OSHA 29 CFR 1910, 1200 (hazardous)
Exposure Effects : Repeated contact with the skin for a long time can cause irritation to the respiratory tracts, dizziness, nausea and becoming unconscious.
Emergency Response Data : Colorless liquid and is flammable

4. FIRST AID METHODS

Eye Contact : Flush the eyes continuously with copious amount of water. If irritation persists seek medical advice.
Skin Contact : Wash the contacted part with water and soap.
Inhaled : No problem
Swallowed : When more than 0.5 liter of the substance is swallowed, give one or two glasses of water and ask him/her to drink at once prior to the seeking of medical help in the Emergency Installation or other Emergency Centers.

CAUTION : Never stimulate the victims to vomit or to swallow anything when they are unconscious.



5. FIRE FIGHTING METHODS

Fire Fighting Media : Carbon dioxide, dry chemical powder and foam

Specific Procedure in Fire Fighting :

- a. Carbon dioxide : Spray it to the front fire from upwind.
- b. Dry Chemical Powder : Spray it to the front fire from upwind
- c. Foam : When the fire is in a container, spray the foam into the inner wall of the container, not to the burning liquid, and from upwind. When the fire is caused by spill of liquid, spray it to the front fire until the spill is covered thoroughly, and from upwind.
- d. Specific Safety Equipment : For fires in relatively closed areas, the fire fighters must be equipped with Self Contained Breathing Apparatus (SCBA).
- e. Explosion and Fire Hazards : These hazards occur in unprotected storage tanks
- f. Flash Point : 100° F or 38° C
- g. Flammable Limits : LEL 0.7 %, UEL 5 %
- h. NFPA Hazard ID : Flammability : 2, Unstabilty : 1
- i. Hazardous Material Decomposition : Carbon Monoxide

6. SPILL AND LEAKAGE HANDLING METHODS

Notification Procedure : Notify the authority promptly about the occurrence of the spills, in accordance with the determined local authorization when the spills are suspected to contaminate the water channel.

Spill or Leakage Procedure : Put away all conditions that can enable the occurrence of ignition. Adsorb the spill by using adsorbent, sawdust mixed with clay and other fire inhibitor materials. Clean and dispose it at the determined place of disposal according to the local regulation.

Environmental Prevention : Prevent the entrance of the spill into the water ditches, disposal channels, or its seepage into the soil.



7. PRECAUTIONS FOR HANDLING AND STORAGE

- Handling** : When absorbed by skin, it will cause serious effect. Avoid the vapor or mist from being inhaled. Portable containers for storage must be placed on the ground and the nozzle must be attached to the container to prevent static electricity.
- Storage** : Store in a cool place. Flammable atmosphere can be formed on top of the storage tank, although it is stored below flash point. Keep away from combustible materials.

8. CONTROL MEASURES/PERSONAL SAFETY EQUIPMENT

- Ventilation** : When Avtur is used in a relatively closed room a local exhaust ventilation must be provided. Ventilation and the equipment used must be explosion proof.
- Breathing Protection** : Use breathing apparatus when the polluted concentration in the air is higher than the permissible Threshold Limit Value.
- Eye Protection** : Use chemical type goggles
- Skin Protection** : Use leather or PVC gloves. Apply Good Personal Hygiene Practice
- Threshold Limit Value** : 500 ppm



9. PHYSICAL AND CHEMICAL PROPERTIES

Test No.	PROPERTY	UNITS	LIMITS		TEST METHOD	
			Min	Max	ASTM	IP
1.	Appearance		Clear, bright and visually free from solid matter and undissolved water at ambient temperature.		Visual	
2.	Composition :					
2.1	Total Acidity	mg KOH/g		0.015	D 3242	IP 354
2.2	Aromatics	% v/v		25.0	D 1319	IP 156
2.3	Sulfur, Total	% m/m		0.30		IP 336
2.4	Sulfur, Mercaptan	% m/m		0.0030	D 3227	IP 342
or						
2.5	Doctor Test		Doctor negative			IP 30
2.6	Refining Components, at point of manufacture		Report			
2.6.1	Hydroprocessed Components	% v/v	Report		See NOTE 1	
2.6.2	Severely Hydroprocessed Component	% v/v	Report		See NOTE 1	
3.	Volatility :					
3.1	Distillation :				D 86	IP 123
3.1.1	Initial Boiling Point	°C	Report			
3.1.2	10% Recovery	°C		205		
3.1.3	50% Recovery	°C	Report			
3.1.4	90% Recovery	°C	Report			
3.1.5	End Point	°C		300		
3.1.6	Residue	% vol		1.5		
3.1.7	Loss	% vol		1.5		
3.2	Flash Point	°C	38.0			See NOTE 2 IP 170
3.3	Density at 15°C	kg/m ³	775	840	D 4052	IP 365
					See NOTE 3	
4.	Fluidity :					
4.1	Freezing Point	°C		Minus 47.0	D 2386	IP 16
4.2	Viscosity at Minus 20°C	mm ² /s		8.0	D 445	IP 71
5.	Combustion :					
5.1	Smoke Point	mm	25		D 1322	IP 57
or						
5.2	Smoke Point And Naphthalenes	mm % v/v	19	3.0	D 1322 D 1840	IP 57
5.3	Specific Energy	MJ/kg	42.8		See NOTE 4	
6.	Corrosion					
6.1	Copper Strip	Class		1	D 130	IP 154
7.	Thermal Stability, JFTOT at Control Temp of 260°C :					
7.1	Tube Rating Visual			Less than 3 (No. Peacock (P) or Abnormal (A) deposits	D3241	IP 323
					See NOTE 5	
7.2	Pressure Differential	mm Hg		25		
8.	Contaminants :					
8.1	Existent Gum	mg/100 ml		7	D 381	IP 131
9.	Water Separation Characteristic :					
9.1	Water Reaction Interface	Rating		lb	D 1094	IP 289
9.2	Microseparometer, at Point of Manufacture :				D 3948	
9.2.1	MSEP without SDA	Rating	85		See NOTE 6	
or						
9.2.2	MSEP with SDA	Rating	70			
10.	Conductivity					
10.1	Electrical Conductivity	pS/m	50	450	D 2624	IP 274
					See NOTE 7	
11.	Lubricity	mm		0.85	D 5001	See NOTE 8

Note 1 : Severely hydroprocessed components are defined as petroleum derived hydrocarbons that have been subjected to a hydrogen partial pressure of greater than 7000 kPa (70 bar or 1015 psi) during manufacture. This requirement comes into effect on 1st Desember 2000.

Note 2 : Subject to a minimum of 40°C, if result obtained by (tag) Method ASTM D 56.

Note 3 : The referee method is normally IP 365 but for operational quality control purposes IP 160 may be agreed between purchaser and supplier.

Note 4 : Specific energy by one of the calculation methods listed at table B (alternative test methods) will be acceptable, where are measurement of spesific energy is deemed necessary, the method to be used shall be agreed between the purchaser and supplier.

Note 5 : Examination of the heater tube to determine the visual tube rating using the visual tuberator shall be carried out within 120 minutes of completion of the test.

Note 6 : No precision data are variable for fuels containing SDA : if MSEP testing is carried out during downstream distribution no specification limits apply and the results are not to be used as the sole reason for rejection of a fuel.

Note 7 : The conductivity limits are mandatory for product to meet this specification. However it is acknowledged that in some manufacturing and distribution systems it is more practical to inject Static Dissipator Additive (SDA) further downstream. In such cases the Certificate of Quality for the batch should be annotated thus : "Product meets requirements of the defence stanadard 91-91 except for electrical conductivity limits are met at the point of delivery into aircraft.

Note 8 : This requirement comes into effect on 1st Desember 2000. The requirement to determine lubricity applies only to fuels containing more than 95% hydroprocessed material where at least 20% of this is severely hydroprocessed (see NOTE) and for all fuels containing synthetic components. The limit applies on 1st at the point of manufacture".

Note : The above mentioned specifications are in accordance with the Attachment of the Letter of Decision of Directorate General of Oil and Gas No. 106. K/72/DJM/2001 dated Dec 16, 2001.



10. REACTIVITY DATA

Thermal and light stability : stable

Conditions that should be avoided : heat, flame, ignition or conditions that can cause static electricity

Inappropriate materials that should : halogen, strong acid, base, and strong oxidations.
be avoided

Decomposition of hazardous materials : carbon monoxide

Polymerization of hazardous material : does not exist

Formation

11. TOXICOLOGY DATA

-----SUBCHRONIC TOXICOLOGY -----

Experiments are conducted towards mice with exposure through skin for five days a week for 90 days with exposure dosage presumably higher than normal conditions. During the experiments, the effect to the internal parts of the body and the clinical chemical body liquid were observed. It turned out that this product has no bad effect.

-----REPRODUCTION TOXICOLOGY-----

Exposure through the skin of pregnant mice at representative dosage does not give bad effect to the mother mice and to their descendants.

-----CHRONIC TOXICOLOGY -----

Base oil which is contained in this product is refined and hydro treated solvent. A study conducted by rubbing this product on the mice skin does not show carcinogenic effect.

-----OTHER TOXICOLOGY DATA -----

Laboratory experiments show that exposure to this product after handling gasoline will cause carcinogenic activity on the skin, specially when the contacted part is not washed thoroughly. However, exposure to this product after handling diesel oil will give no carcinogenic effect.

12. WATER POLLUTION

Environmental effects and damage : Seepage of this substance to the soil can contaminate soil water or aquifer.



13. DISPOSAL CONSIDERATION

Effluent Disposal : can be burned in the incinerator
Regulation Information : This product can be categorized as Hazardous Material, and its disposal must accord with the regulation on effluent disposal of Hazardous Material.

14. TRANSPORTATION INFORMATION

USA DOT :

SHIPPING NAME : Jet Fuel
HAZARD CLASS & DIV : COMBUSTIBLE LIQUID
ID NUMBER : UN 1223
ERG NUMBER : 128
PACKING GROUP : PG 111
DANGEROUS WHEN WET : None
POISON : None
PLACARD(S) : Flammable

RID/ADR :

HAZARD CLASS : 3
HAZARD SUBCLASS : 31(c)
LABEL : 3
DANGER NUMBER : 30
UN NUMBER : 123
SHIPPING NAME : Jet Fuel

IMO :

HAZARD CLASS & DIV : 3.3
ID/UN NUMBER : 1263
PACKING GROUP : PG 111
SHIPPING NAME : Jet Fuel
LABEL(S) : Flammable Liquid

ICAO/IATA :

HAZARD CLASS & DIV : 3
ID/UN NUMBER : 1263
PACKING GROUP : PG 11
SHIPPING NAME : Jet Fuel
LABEL(S) : Flammable liquid



15. REGULATION INFORMATION

Inventory Status	: Registered in TSCA and EINECS/ELINCS.
EEC Labeling	:
Symbol	: Xn = Harmful, F = Flammable
Risk Phrase(s)	: R10-22-38-5/532. Highly flammable. Toxic when swallowed. It can cause irritation to the skin. Hazardous for water life.
Safety Phrase(s)	: S43-24-62-61 Avoid contact with the skin.

16. OTHER INFORMATION

WARNING LABEL

CONTENT : Aromatic Petroleum Oil -----> DANGEROUS

Do not contact it with skin.

Combustible.

THE PRODUCT CAN CAUSE SKIN CANCER, DAMAGE TO LIVER AND BLOOD COMPONENTS. The product condition and its usage appropriateness is not our responsibility . All risks during usage are under the users' responsibility. This material safety data sheet (MSDS) must be owned and obeyed by the users and the product handlers. Changing this MSDS is strictly prohibited without legal agreement