

# AVIATION TURBINE FUEL JET A1<sup>3</sup>

USE: AS FUEL FOR JET ENGINES

PROPERTY	MU	LIMITS		TEST METHOD
		Min.	Max.	
<b>APPEARANCE</b>				
Visual appearance		Clear, bright and visually free from solid matter and undissolved water at ambient fuel temperature		ASTM D 4176-04(14)– procedure 1
Colour Saybolt			Report	ASTM D 156-15 <sup>1</sup> / ASTM 6045-12(2017)
Particulate contamination, at point of manufacture	mg/l	-	1.0	ASTM D 5452-12 <sup>1</sup>
Particulate, cumulative channel particle counts	No/ml			IP 565
≥ 4 µm(c)			Report	
≥ 6 µm(c)			Report	
≥ 14 µm(c)			Report	
≥ 21 µm(c)			Report	
≥ 25 µm(c)			Report	
≥ 30 µm(c)			Report	
<b>COMPOSITION</b>				
Total acidity	mg KOH/g	-	0,015	ASTM D 3242-11(2017) <sup>1</sup>
Aromatics	% (v/v)	-	25.0	ASTM D 1319-15 <sup>1</sup>
Or Total Aromatics			26.5	ASTM D 6379-11 <sup>1</sup>
Sulphur, Total	% (m/m)	-	0,30	ASTM D 2622-16 <sup>1</sup> / ASTM D 5453-16ε1 <sup>1</sup>
Sulphur, Mercaptan	% (m/m)	-	0,0030	ASTM D 3227-16 <sup>1</sup>
Refinery Components, at point of manufacture:				
Non Hydroprocessed Components	% (v/v)		Report	
Mildly Hydroprocessed Components	% (v/v)		Report	
Severely Hydroprocessed Components	% (v/v)		Report	AFQRJOS – Issue 30/November 2018
Synthetic Components	% (v/v)		Report	
<b>VOLATILITY</b>				
Distillation				ASTM D 86-17 <sup>1</sup> / SR EN ISO 3405:11 <sup>1</sup>
Initial Boiling Point	°C		Report	
Fuel Recovered				
10 % (v/v)	°C	-	205.0	
50 % (v/v)	°C		Report	
90 % (v/v)	°C		Report	
End Point	°C	-	300.0	
Residue	% (v/v)	-	1,5	
Loss	% (v/v)	-	1,5	
Flash point, TAG	°C	40.0	-	ASTM D 56-16a <sup>1</sup>
Density at 15 °C	kg/m <sup>3</sup>	775.0	840.0	ASTM D 1298-12b(2017) / ASTM D 4052-16 <sup>1</sup> SR EN ISO 3675:02 / SR EN ISO 3675:02/ C91-05 <sup>1</sup> / SR EN ISO 12185:03 <sup>1</sup>
<b>FLUIDITY</b>				
Freezing point	°C	-	-47.0	ASTM D 2386-18 ASTM D 7153-15e1 <sup>1</sup>

Kinematic viscosity at - 20 °C	cSt (mm <sup>2</sup> /s)	-	8.0	SR EN ISO 3104:02 <sup>1</sup> / SR EN ISO 3104:02/AC:02 <sup>1</sup> / ASTM D 445-17a <sup>1</sup>
<b>COMBUSTION</b>				
Specific Energy, net	MJ/kg	42.80	-	ASTM D 3338 <sup>1</sup> / D 3338M-09(14)e2 <sup>1</sup>
	kcal/kg	10,200	-	
Smoke Point	mm	25.0	-	ASTM D 1322-15ε1 <sup>1</sup>
<b>CORROSION</b>				
Corrosion, Copper strip, clasification (2 hours +/- 5min at 100°C +/-1 °C)		-	Class 1	ASTM D 130-12 <sup>1</sup> / SR EN ISO 2160-03 <sup>1</sup>
<b>STABILITY</b>				
Thermal Stability (JFTOT) <sup>4</sup>				
Control temperature	°C	260		
Filter Pressure Differential	mmHg	-	25	ASTM D 3241-18 <sup>1</sup>
Tube Depositing Rating (visual)		-	<3	
<b>CONTAMINANTS</b>				
Existent Gum	mg/100ml	-	7	ASTM D 381-12(2017) <sup>1</sup> SR EN ISO 6246:17 <sup>1</sup> / IP 540-08(14) <sup>1</sup>
Microseparometer (MSEP), rating, Fuel with Static Dissipator Additive		70	-	ASTM D 3948-14 <sup>1</sup>
<b>CONDUCTIVITY</b>				
Electrical conductivity	pS/m	50	600 <sup>2</sup>	ASTM D 2624-15 <sup>1</sup> / SR ISO 6297:02 <sup>1</sup> see AFQRJOS, Issue 30 / November 2018, Note 19
<b>ADDITIVES</b>				
The product is additivated with:				
- Static Dissipator (Stadis 450) type RDE/A/621	mg/l	-	3	According to Unit notification
- Antioxidant, Ionol CP (2,6-ditertiary-butyl-4-methyl phenol), tip RDE/A/607	mg/l	17	24	

NOTES: **1)** Accredited test by RENAR **2)** at delivery, after electrical conductivity additive injection **3)** The product meets all the requirements of check-list AFQRJOS 30/November 2018 and ASTM D 1655. **4)** This condition is checked weekly on the average sample of the tanks

**Quality control:** control is done on lot.

It is certified that the samples have been tested using the Test Methods stated and that the Batch represented by the samples conforms with ASTM D 1655 (latest issue) and AFQRJOS Checklist Issue 30.

Each batch will have max. 2000 tones for delivery in tank wagons or tank capacity for pipelines. The lot will have product of same type. During testing, the product must comply with all parameters depicted in standard specification for corresponding product/type. If not, the batch is rejected.

**Sampling procedure:** SR EN ISO 3170:2004 / C91:05 / ASTM D 4057-12(2018)

Information on product classification, packing, labelling, handling, transport and storage: according to Safety Data Sheet S - 2.4.2 T.

**The integrated Quality-Environment-Occupational Health and Safety Management System** is certified by DNV-GL according to the following standards:

- ISO 9001
- ISO 14001
- BS OHSAS 18001

The test lab is accredited by RENAR, in compliance with SR EN ISO/CEI 17025.

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