



PRODUCT QUALITY CERTIFICATE
CHEVRON SOUTH AFRICA (PTY) LTD. - CAPE TOWN

JET-A1
 C-440 Jet-A1-Fuel

Test Methods and Results

Sampled : 20/09/2017 17:22:39
 Batch Finished: 21/09/2017 08:55:34
 Report Generated: 21/09/2017 08:55:53

Batch No : JET_2017_00085
 Vessel : TANK-504
 Samples: Z00142505

Method	Description	Unit of Measure	Result	Specification
D4176 (Proc. 1)	Appearance (Visual at °C)		BRIGHT & CLEAR	BRIGHT & CLEAR
ASTM D6045	Saybolt Colour		+30	Report
D5452	Particulate Contamination	mg/L	0.14	MAX 1.0
IP 565	Particle Count >=4	µm / iso c	1415.6 / 18	Report
IP 565	Particle Count >=6	µm / iso c	385.5 / 16	Report
IP 565	Particle Count >=14	µm / iso c	21.8 / 12	Report
IP 565	Particle Count >=21	µm / iso c	6.3 / 10	Report
IP 565	Particle Count >=25	µm / iso c	4.0 / 9	Report
IP 565	Particle Count >=30	µm / iso c	2.5 / 8	Report
D3242	Acidity - Total	mg KOH/g	0.0020	MAX 0.015
D1319	Aromatics	Vol %	19.2	MAX 25.0
IP336/D5453	Sulphur	mass %	0.08	MAX 0.30
D3227	Mercaptan Sulphur	mass %	0.0020	MAX 0.0030
Calc	Mildly-Hydroprocessed	Liq vol %	0	Report
Calc	Severely-Hydroprocessed	Liq vol %	0	Report
Calc	Non-Hydroprocessed	Liq vol %	100	Report
Calc	Synthetic Components	Liq vol %	0	Report
Calc	AO 87 RDE/A/609 non-Hydroprocessed	mg/L	<0.1	MAX 24
Calc	AO 87 RDE/A/609 Hydroprocessed	mg/L	<0.1	17 - 24
Calc	Static Dissipator (Stadis 450)	mg/L	0.3	MAX 3.0
D5006-11	Fuel System Icing Inhibitor	%	<0.02	MAX 0.02
Calc	Metal Deactivator	mg/L	0	MAX 5.7
Calc	Quantity of Batch	MT	5330	Report
D2887	Distillation Initial Boiling Point, °C	°C	149.6	Report
D2887	Distillation 10% Recovery, °C	°C	168.0	MAX 205.0
D2887	Distillation 50% Recovery, °C	°C	192.4	Report
D2887	Distillation 90% Recovery, °C	°C	225.0	Report
D2887	Distillation End Point, °C	°C	257.8	MAX 300.0
IP170	Abel Flash point	°C	43.0	MIN 38.0
D4052	Density @ 15 °C	kg/L	0.7994	0.7750 - 0.8400
D4052	Density @ 20 °C	kg/L	0.7956	Report
D7153	Freezing Point	°C	-55.8	MAX -47.0
D445	Viscosity @ -20 °C	cSt	3.538	MAX 8.000
D1322	Smoke Point	MM	25.0	MIN 18.0
D3338	Specific Energy	MJ/kg	43.19	MIN 42.80
D130	Corrosion - Copper, 2hrs @ 100 °C, P. V. used		1	1
D3241	JFTOT - Control Temperature	°C	260	MIN 260
D3241	JFTOT - Tube Deposit Rating	Visual Rating	0	MAX 1
D3241	JFTOT - Filter Pressure Differential	mm of Hg	<0.1	MAX 25.0
IP540/D381-12	Gum - Existent	mg/100mL	0.420	MAX 7
D3948	Micro-separometer (MSEP) rating		94	MIN 70
D2624	Electrical Conductivity - Average	pS/m	229	150 - 600
LAB	Fuel temperature tested	°C	19	Report
D7797-12/IP583	Fame in Jet Fuels	mg/kg	<20	MAX 50



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I certify that above material meets prescribed requirements.

Sebastian Sonwabo Nxiwa	21/09/2017 08:55:53
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Company Representative	Date/Time
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It is certified that the fuel complies with the Aviation Fuel Quality requirements for Def Stan 91-91 issue 9 of 3rd October 2016 and Jointly Operated Systems issue 29 - Oct 2016, supersedes issue 28 - Mar 2015.

- Comments:**
1. Anti-oxidants are mandatory in Hydro-processed fuels and Synthetic fuels and must be added immediately after processing.
 2. The specification for AO 87 RDE / A / 609 mg/l Hydro-processed does not apply if no hydro-processed fuel was used during processing.
 3. This document shall not be reproduced except in full.

Spec. Comments: *1Product originates from Cape town Refinery Jet Merox processing. There is a known false positive result due to "fuel effect" when Jet Merox manufactured product is tested against the IP583, so all results <20ppm are considered to be <5ppm result.

*2If IP 406 or ASTM D2887 are used to produce IP 123 equivalent or ASTM D86 correlated data , there is no requirement to report residue or loss.