



Hjelmco Oil

Aviation gasolines, turbo fuels & lubricants.

ORIGINAL

CERTIFICATE OF QUALITY AVIATION GASOLINES

Grade: Avgas 100 LL, ASTM D 910
Complies with ASTM D910-07
Extank C 101 Västerås Sweden
Batch No.: 055/2010
Certificate No.: 062

Laboratory report: 10-007854-0-RDAM(1)
PRR10-06805(1)
Applies to:
Destination:
Customer set expiry date:
Date sampled August 31 2010

Analyses**	Test Method	Unit	Limits	Test Results
Appearance	Visual		Clear, bright and visually free from solid matter and undissolved water at ambient temperature	Pass
Knock value, lean mixture Motor octane method number	ASTM D 2700	MON	Min 99,6	104,0
Knock value, lean mixture Performance number, Aviation Rating (table 7)	ASTM D 2700	Aviation rating	Min 100,0	111,8
Knock value, rich mixture Performance number	ASTM D 909M	Supercharge	Min 130,0	142,0
Tetraethyllead (TEL-B)	ISO 3830:1993	gPb/L	Max 0,56	0,56
Colour	Visual		Blue	Pass
Net heat of combustion	ASTM D 240-09	MJ/kg	Min 43,5	43,51
Density at 15 degr. C.	ASTM D 4052-09	kg/m ³	Report	716,7
Initial Boiling Point	ASTM D 86-09e1	degrees C.	Report	35,4
Fuel evaporated 10 volume % at		degrees C.	Max 75	62,0
Fuel evaporated 40 volume % at		degrees C.	Min 75	95,7
Fuel evaporated 50 volume % at		degrees C.	Max 105	101,6
Fuel evaporated 90 volume % at		degrees C.	Max 135	108,6
Final Boiling Point		degrees C	Max 170	132,1
Sum of 10 % + 50 %, evaporated temperatures		degrees C.	Min 135	163,6
Recovery		volume %	Min 97,0	97,3
Residue		volume %	Max 1,5	1,3
Loss		volume %	Max 1,5	1,4
Vapour Pressure, 38 degr. C.	ASTM D 323-08	kPa	38,0-49,0	44,0
Freezing Point	ASTM D 2386-06	degr. C.	Max (-58)	<-100
Sulphur	ICP AES	mass %	0,05	<0,01
Corrosion, copper strip 2 hours at 100 degr. C.	ASTM D 130-04e1	as per table	Max 1	1a
Existent Gum* unwashed (160 degr. C.)	ASTM D 381-09	mg/100 mL	Max 3	<1
Oxidation stability, Potential gum (16 hours aging)	ASTM D 873-02	mg/100 mL	Max 10	<1
Lead precipitate	ASTM D 873-02	mg/100 mL	Max 4	0
Water reaction, Interface Rating	ASTM D 1094-07	as per table	Max 2	1
Water reaction*, Separation Rating	ASTM D 1094-07	as per table	Max 1	1
Water reaction, Volume change	ASTM D 1094-07	mL	Max +/- 2	0
Benzene	SIS 155136 utg 1	volume %	Max 0,10	<0,1
Electrical conductivity at + 22 degr. C.	ASTM D 2624-07a	pS/m	Max 450	330
Conductivity improver Stadis 450® RDE/A/621		mg/L	Max 3	0,31
Colouring additive essentially 1,4-dialkylamino anthraquinone		mg/L	Max 2,7	1,40
Antioxidant additive 2,6-ditertiary-butyl- 4-methylphenol RDE/A/607		mg/L	Max 24	20

*)Hjelmco Oil voluntary requirement. 1) All analyses incl. lead but excluding additive concentrations performed by independent laboratories.

This fuel batch is made of fresh fuel components and the fuel has an expected shelf-life > 2 years if properly stored in a suitable environment. Verify all necessary quality parameters with each 6 months of storage.

Signature: Lars Hjelmberg Sept. 09 2010
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HJELMCO OIL AKTIEBOLAG.

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