



EASA Safety Information Bulletin

SIB No.: 2010-31
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Subject: **Unleaded Aviation Gasoline (Avgas) Hjelmcö 91/96 UL and Hjelmcö 91/98 UL**

Ref. Publication(s): Standards and Specifications:

ASTM D7547-09 "Standard Specification for Unleaded Aviation Gasoline".
 ASTM D910-07 "Standard Specification for Aviation Gasoline".
 Defence Standard 91-90 Issue 3.
 Military Specification MIL-G-5572 (now obsolete and replaced by ASTM D910)

Related Service Information of Engine Type Certificate Holders:

Rotax Service Instruction SI-912-016/SI-914-019 Revision 3.
 Lycoming Service Instruction (SI) 1070Q and SI 1409A.
 Kalisz Service Bulletin 129/S/2006

Later revisions of these standards and service publications are acceptable.

Applicability: Aeroplanes powered by spark-ignited piston engines using Avgas.

Description: This SIB is published to inform all owners and operators of aeroplanes powered by spark-ignited piston engines about the use of unleaded Hjelmcö Avgas 91/96 UL and unleaded Hjelmcö Avgas 91/98 UL produced by Hjelmcö Oil Inc., Runskogsvägen 4 B, SE 192-48 Sollentuna, Sweden.

Hjelmcö Avgas 91/96 UL and Hjelmcö Avgas 91/98 UL meet the requirements of MIL-G-5572 and ASTM D910-07 for grade 91/96 and 91/98 fuel (except of colour), as well as the requirements of ASTM D7547-09. Hjelmcö Avgas 91/96 UL and Hjelmcö Avgas 91/98 UL differ from Avgas 100LL on certain properties, listed in Table 1.

Hjelmcö Avgas 91/96 UL or Hjelmcö Avgas 91/98 UL may be used, if approved for the particular engine types. No additional approval is required for the aeroplane, provided the aeroplane is already approved for operation with Avgas (according to ASTM D910, Def Stan 91-90, Mil-G-5572, GOST1012-72 or equivalent) and the engine is already approved to use Avgas 91/96 UL, Avgas 91/98 UL, Avgas 80/87, Avgas 80, Avgas 78 or, for Kalisz engines only, Avgas 91/115.

This is information only. Recommendations are not mandatory.

IMPORTANT:

Use of Hjelmcø Avgas 91/96 UL or Hjelmcø Avgas 91/98 UL in engines that have not been approved for the use of these fuels, may cause extensive damage or lead to in flight failure, due to the lower Motor Octane Number (MON) of the fuel, compared to Avgas 100LL.

Note 1: The service information listed in "Ref. Publications" of this SIB identifies engines which, on the date of issue of this SIB, are known to be approved for use of Hjelmcø Avgas 91/96 UL and Hjelmcø Avgas 91/98 UL. This list is not exhaustive.

Note 2: Specifications Defence Standard 91-90 and ASTM D910 remain in force for traditional leaded Avgas Grades such as Avgas 100LL.

Table 1

Property	Avgas 100LL	Hjelmcø 91/96 UL	Hjelmcø 91/98 UL
Knock value, lean mixture Motor Octane Number	min. 99.6	min. 90.8	min. 90.8
Knock value, rich mixture Octane Number		min. 96,0	min. 98.0
----- Performance Number	min. 130.0	-----	-----
Lead Content	max. 0.56 g/l	max 0.013 g/l	max 0.013 g/l
Colour	blue	none	none

Recommendations: Before using Hjelmcø Avgas 91/96 UL or Hjelmcø Avgas 91/98 UL, it is recommended to take the following actions:

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- (1) Check the latest instructions of the engine type certificate holders to verify if the engine installed on their aeroplane is approved for use of Avgas 91/96 UL, Avgas 91/98 UL, in certain cases Avgas 91/115 or lower octane.
- (2) Verify that the engine has not been modified or altered and meets specifications of the original engine type certificate.
- (3) Check the engine data plate for octane requirements and confirm stamped 91/96 or less.
- (4) Check the temperature limitations in the engine operating manual.
- (5) Check the engine temperature limitations in the Pilot Operating Handbook (POH)/Aeroplane Flight Manual (AFM). These values should be equal or lower than the temperature limitations of the engine operating manual.
- (6) Install on each fuel cap a label from Hjelmcø Oil or make your own placard identifying that Hjelmcø Avgas 91/96 UL and Hjelmcø Avgas 91/98 UL are acceptable fuel for the aeroplane.
- (7) For Lycoming engines only, when using unleaded Avgas, update POH and engine manual specifying that engine oils must be used as detailed in Lycoming SI 1409A.

Contact: For further information contact the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA.
E-mail: ADs@easa.europa.eu.