



SUBJ: Grade 100VLL Aviation Gasoline

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) advises aircraft operators, Fixed Base Operators (FBOs), FAA repair stations and Flight Standards District Offices, and Foreign Civil Aviation Authorities that grade 100VLL aviation gasoline meeting the American Society for Testing and Materials (ASTM) fuel specification D910 is acceptable for use on aircraft and engines certificated for operation with D910 grades 80, 91, 100, and 100LL aviation gasolines. Grade 100VLL meets all the performance requirements of grades 80, 91, 100, and 100LL and therefore meets the approved operating limitations for aircraft and engines certificated to operate with these other grades of aviation gasoline.

Background

The FAA relies on ASTM International to develop fuel specifications that applicants may designate as operating limitations for their approved products. These aviation fuel operating limitations may be listed in the product's Type Certificate Data Sheet (TCDS), Installation Manual, service instructions, or as limitations associated with a Supplemental Type Certificate (STC).

Grade 100VLL aviation gasoline (avgas) was developed by ASTM International to provide a lower-lead alternative to 100LL in response to impending environmental regulations. Grade 100VLL is identical to 100LL in all aspects, except that the maximum lead content is reduced by about 19%. The specification criteria for lead content is expressed as only a maximum value, because avgas producers routinely tradeoff lead content with other fuel compositional changes to meet the specification criteria for Motor Octane Number (MON). FAA survey data has shown that the lead content can vary by up to 39% from the maximum lead value listed in the specification while still meeting the MON minimum requirement. Consequently, and most importantly, grade 100VLL has the same minimum octane rating and will provide the same level of anti-knock performance as 100LL and 100 avgas grades.

The FAA collaborated with industry on the ASTM International task force that evaluated data supporting the incorporation of grade 100VLL into specification D910. The FAA determined that grade 100 VLL meets all of the performance requirements of grades 80, 91, 100, and 100LL and will perform identically in existing aircraft and engines.

Recommendations

Because grade 100VLL avgas that meets ASTM specification D910 is identical to grade 100LL avgas, the following recommendations apply:

1. Grade 100VLL avgas is acceptable for use on those aircraft and engines that are approved to operate with grades 80, 91, 100, or 100LL avgas.

2. ASTM International standard D910 specifies blue coloration for both grade 100VLL avgas and grade 100LL avgas, and, therefore, these fuels are visually indistinguishable from each other.
3. Operating limitations in Aircraft Flight Manuals, Pilot Operating Instructions, or TCDSs that specify grades 80, 91, 100, or 100LL avgas fuel are acceptable for use with grade 100VLL avgas.
4. Current aircraft placards that specify grades 80, 91, 100, or 100LL avgas are acceptable for use with grade 100VLL avgas.
5. Operating, maintenance, or other service documents, for aircraft and engines that are approved to operate with grades 80, 91, 100, or 100LL avgas, are acceptable for use when operating with grade 100VLL avgas.

For Further Information Contact

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