



Introduction

This Special Airworthiness Information Bulletin (SAIB) advises aircraft operators, fixed base operators, FAA repair stations, Flight Standards District Offices, and Foreign Civil Aviation Authorities, that **grade UL94 aviation gasoline** (avgas), that meets the American Society for Testing and Materials (ASTM) International fuel specification D7547, is acceptable for use on aircraft and engines certificated for operation with grade UL94 avgas that meets ASTM International fuel specification D7592.

This SAIB also advises that specification D7547 grade UL94 avgas meets or exceeds all of the performance requirements of grade UL91 avgas, which is also specified in D7547. As a result, specification D7547 grade UL94 avgas meets the approved operating limitations for aircraft and engines certificated to operate with D7547 grade UL91 avgas.

Background

The FAA collaborates with 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).

ASTM International specification D7547 was originally issued with only grade UL91 avgas. This specification was recently revised to add grade UL94 avgas. The properties of grade UL94 avgas in specification D7547 are identical to those in specification D7592. Therefore, specification D7547 grade UL94 avgas meets the operating limitations of aircraft and engines approved to operate with grade UL94 avgas that meets specification D7592.

Grade UL94 avgas is identical to grade UL91 avgas except that the minimum motor octane number (MON) for grade UL94 avgas is higher than the minimum MON specified for grade UL91 avgas. A minimum MON of 91 is specified for grade UL91 avgas and a minimum MON of 94 is specified for grade UL94 avgas. The minimum MON of grade UL94 avgas exceeds the minimum MON requirement of grade UL91 avgas and therefore grade UL94 avgas meets the operating limitations of aircraft and engines approved to operate with grade UL91 avgas.

The FAA collaborated with industry on the ASTM International task force that evaluated data supporting the incorporation of grade UL94 avgas into specification D7547. We determined that specification D7547 grade UL94 avgas is identical to specification D7592 grade UL94 avgas. We also determined that grade UL94 avgas meets or exceeds all of the performance requirements of grade UL91 and will perform identically in aircraft and engines approved to operate with grade UL91 avgas. These limitations are summarized in Table 1 below.

Table 1

ASTM International Specification	Fuel Grade	Acceptable for use in Aircraft/Engine Approved for UL91?	Acceptable for use in Aircraft/Engine Approved for UL91 and UL94?	Acceptable for use in Aircraft/Engine Approved for UL94, but not UL91?
D7547	UL91	Yes	Yes	No
D7547	UL94	Yes	Yes	Yes
D7592	UL94	Yes	Yes	Yes

Recommendations

Since grade UL94 avgas that meets ASTM International specification D7547 is identical to grade UL94 avgas that meets ASTM International specification D7592; and grade UL94 avgas meets or exceeds the performance requirements of grade UL91 avgas that meets specification D7547, the following recommendations apply:

1. Grade UL94 avgas that meets specification D7547 is acceptable to use on those aircraft and engines that are approved to operate with grade UL94 avgas that meets specification D7592 or with grade UL91 avgas that meets specification D7547.
2. Aircraft flight manuals, pilot operating instructions, TCDS, or STC limitations that specify grade UL94 avgas that meets specification D7592 or grade UL91 avgas that meets specification D7547 as operating limitations are acceptable for use with grade UL94 avgas that meets specification D7547.
3. Grade UL94 avgas that meets specification D7547 is acceptable for use on aircraft equipped with placards that specify either grade UL94 avgas that meets specification D7592 or grade UL91 avgas that meets specification D7547.
4. Operating, maintenance, or other service documents for aircraft and engines that are approved to operate with grade UL94 avgas that meets specification D7592, or grade UL91 avgas that meets specification D7547, are acceptable for use with grade UL94 avgas that meets specification D7547.
5. There are no additional or revised maintenance actions, inspections, or service requirements necessary when operating with grade UL94 avgas that meets specification D7547 on aircraft and engines that are approved to operate with grade UL94 avgas that meets specification D7592 or grade UL91 avgas that meets specification D7547.

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