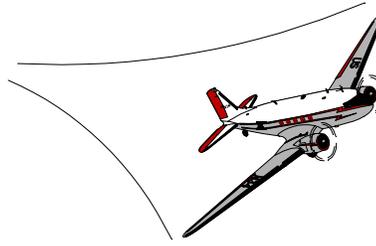


# SPECIAL AIRWORTHINESS INFORMATION BULLETIN

REGULATORY SUPPORT DIVISION  
P.O. BOX 26460  
OKLAHOMA CITY, OKLAHOMA 73125-0460



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

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*SAIB's are posted on the internet at <http://av-info.faa.gov>*

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This is issued for informational purposes only and any recommendation for corrective action is not mandatory.

## **Introduction:**

The purpose of this Special Airworthiness Information Bulletin (SAIB) is to alert registered owners/operators of airplanes FAA approved for the use of high-octane automobile gasoline (**autogas**).

The FAA Small Airplane and Engine and Propeller Directorates have approved the use of 82UL gasoline (fuels meeting ASTM specification D6227) as an alternative to autogas (fuels meeting ASTM specifications D439 and D4814).

Aviation 82UL gasoline **may not be used** as a substitute fuel on airplanes requiring autogas with an aviation lean {motor method (MON)} octane rating **greater than 82** or an antiknock index {(RON+MON)/2} **greater than 87**. Using this fuel on those higher performance engines originally approved for use with higher-octane fuels **could result in engine detonation and associated destructive damage**.

Aviation 82UL gasoline **is only approved** for use in airplanes incorporating supplemental type certificates (STC) approving the use of autogas with an aviation lean octane rating of **82 or less** or an antiknock index of **87 or less**. The minimum octane requirement unique to any airplane (and engine) approved for autogas is placarded.

## **Background:**

Numerous STCs and several airplane and engine type certificates (TCs) have been issued approving the use of unleaded autogas. Airplanes and engines approved for autogas use have met the FAA certification requirements for engine detonation, engine cooling, fuel flow, hot fuel testing, fuel system compatibility, vapor lock, and performance.

Many of these approvals are for *regular* grade unleaded autogas in lieu of Grade 80/87 aviation gasoline. However, some of these approvals are for *premium* grade autogas in lieu of 91/96 or 100LL (100/130) aviation gasoline. Gasolines meeting the specification 82UL are intended for airplanes using lower-compression, lower-performance engines that were originally approved for use with Grade 80/87 aviation gasoline.

Autogas 82UL is produced from autogas stocks, but is more tightly controlled and does not allow many of the additives. Use of this fuel on higher performance engines originally approved for use with higher-octane fuels could result in engine detonation and associated destructive damage. Therefore, **82UL gasoline may not be used as a substitute fuel for autogas approvals on airplanes that require fuels with an octane rating greater than 82, or an antiknock index greater than 87**.

**Recommendation:**

The FAA highly recommends installing placards stating the use of 82UL is or is not approved on those airplanes that specify unleaded autogas as an approved fuel. Please contact the STC/TC holder directly for further information regarding the use of 82UL gasoline.

A majority of FAA STC approvals for autogas have been issued to either the Experimental Aircraft Association (EAA) or Petersen Aviation, Inc. Placards and instructions may be obtained for those STC's as follows:

EAA Service Bulletin:	<b>2000-1</b>	<i>dated March 1, 2000</i>
Petersen Aviation Service Bulletin:	<b>P-2000-1</b>	<i>dated February 15, 2000</i>

**For Further Information Contact:**

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