

Unleaded Aviation Fuel (Avgas) Background Information

Senate Select Committee on Air Quality

Federal and state agencies have made dramatic progress in reducing ambient lead concentrations, a pollutant whose adverse health effects have been long known and undisputed. This year marks the 40th anniversary of the EPA's decision to phase out lead from automotive gasoline, and lead emissions today are only a minute fraction of what they were back then. As a result of the reductions, the EPA cut the ambient air quality standard down from 1.5 ug/m³ to .15 ug/m³, a tenfold reduction. The EPA has established, however, that this level is for compliance only, and that there is *no safe level of lead*.

Lead emissions continue today from a handful of sources, the most prominent of which is aviation fuel. As a result, lead emissions are of particular concern for citizens residing nearest to airports. Two of the six California airports monitored in a recent study by the EPA had lead concentration values above the NAAQS: McClellan-Palomar Airport in San Diego County and San Carlos Airport in San Mateo County¹. Of the 17 total airports monitored these were the only two airports to exceed lead levels. Considering how few airports were monitored, it is very likely that similar exceedances exist near many of California's other airports.

It is important to clarify which aircraft use avgas. While large, commercial aircraft use unleaded jet fuel, small piston-engine planes continue to use leaded avgas. Many piston-engine planes that do not require a full 100 octane fuel can safely use unleaded motor gasoline (mogas) as an alternative fuel, provided that the mogas does not contain ethanol. This type of mogas is currently available at a small fraction of California airports. Airports are not currently required to offer unleaded mogas, and because a low-lead, 100-octane option (100LL) is available at virtually all airports, there is little incentive for airports to change their current offerings.

Additionally, some aviation groups are opposed to use of mogas for a variety of reasons. First, in order for a plane to be eligible for mogas use, an aircraft must undergo an additional certification process for a FAA Supplemental Type Certificate². Second, there are concerns that the mechanical parts of planes flying on mogas are more likely to degrade

¹ <http://www.epa.gov/otaq/regs/nonroad/aviation/420f13032.pdf>

² <http://www.eaa.org/autofuel/>

quickly, and replacement would involve potentially substantial additional costs. In some cases, use of mogas can void the warranty of mechanical parts.

In light of concern over continued lead emissions from aircraft, and in order to address the concerns of the flying community, the EPA and FAA are working actively to come up with a universal replacement for 100LL avgas. The alternate fuel will eliminate the presence of lead in avgas, but it must also meet the FAA's stringent safety standards for aircraft use. These agencies intend to release an alternative by 2018. Although this is progressive movement, it is crucial to address what, if any, actions can be taken before 2018. Local airports and pilots must be informed about what will be expected of them when the alternative becomes available.