

# Advance Notice of Proposed Rulemaking on Lead Emissions from Piston-Engine Aircraft Using Leaded Aviation Gasoline

## Overview

- In this action we describe and request comment on the data available for evaluating lead emissions, ambient concentrations and potential exposure to lead from the use of leaded aviation gasoline (avgas) in piston-engine powered aircraft.
- This action describes considerations regarding emission engine standards and requests comment on approaches for transitioning the piston-engine fleet to unleaded avgas.
- This action is one of the steps EPA is taking in response to a petition submitted by Friends of the Earth (FOE) requesting that EPA find endangerment from and regulate lead emitted by piston-engine aircraft, or if insufficient information exists, to commence a study.
- EPA's next step is to consider the information presented in the ANPR and comments received from the public to determine whether, in the Administrator's judgment, aircraft lead emissions from aircraft using leaded aviation gasoline cause or contribute to air pollution which may be reasonably anticipated to endanger public health or welfare. EPA will also be considering comments from the public and continuing conversations with FAA and industry about issues associated with potential future emission standards.
- If EPA judges, in a subsequent action, that lead emissions from these aircraft cause or contribute to air pollution which may be reasonably anticipated to endanger public health or welfare, EPA would be required, in consultation with FAA, to establish standards to control the emissions of lead from piston-engine aircraft. FAA would also be required to establish standards for the composition of piston-engine aircraft fuel to control lead emissions.

## Lead Emissions from Piston-Engine Aircraft

- There are almost 20,000 airport facilities in the U.S. where leaded avgas is used.
- Aviation gasoline is utilized in general aviation aircraft with piston engines, which are generally used for instructional flying, air taxi activities, and personal transportation. Lead is not used in jet fuel, the fuel utilized by most commercial aircraft.
- Emissions of lead from piston-engine aircraft using leaded avgas comprise approximately half of the national inventory of lead emitted to air.
- EPA estimates that approximately 14.6 billion gallons of leaded avgas were consumed between 1970 and 2007, emitting approximately 34,000 tons of lead.
- Airport-specific lead inventories for 2008 are currently undergoing review by state, local and tribal authorities and will be completed in 2010.

## Lead Concentrations and Exposure to Lead from Piston-Engine Aircraft

- Lead concentrations in air increase with proximity to airports where piston-engine aircraft operate.
- Lead emitted in-flight is expected to disperse widely in the environment because lead is emitted as a small particle and can travel widely before depositing to soil, water, vegetation or other surfaces.
- Approximately 16 million people live within one kilometer of the approximately 20,000 airport facilities in the U.S.
- Over 3 million children attend school within one kilometer of the approximately 20,000 airport facilities.

## Background

- The U.S. has made tremendous progress in reducing lead concentrations in the outdoor air, with average concentrations of lead in air decreasing 91 percent between 1980 and 2008.
  - ◆ Much of this dramatic improvement occurred as a result of the permanent phase-out of lead in motor vehicle gasoline. Reductions in the emission of lead have also been accomplished through controls on waste incineration and other stationary sources.

- Lead is a multimedia pollutant and EPA is concerned about continued emissions of lead to air.
  - ◆ Lead that is emitted into the air can be inhaled or, after it settles out of the air, can be ingested. Ingestion of lead that has settled onto surfaces is the main way children are exposed to lead originally released into the air.
  - ◆ Once in the body, lead is rapidly absorbed into the bloodstream and results in a broad range of health effects.
- Children are particularly vulnerable to the effects of lead. Exposures to low levels of lead early in life have been linked to effects on IQ, learning, memory, and behavior. There is no identified safe level of lead in the body.
- On October 15, 2008, EPA substantially strengthened the national ambient air quality standards (NAAQS) for lead, finding that serious health effects occur at much lower levels of lead in blood than previously identified.

## **For More Information**

To download a copy of today's action and to obtain additional information regarding EPA's response to the petition from Friends of the Earth, go to:

[www.epa.gov/otaq/aviation.htm](http://www.epa.gov/otaq/aviation.htm)

EPA will accept public comment on the ANPR for 60 days following its publication in the Federal Register. To provide comments to EPA, follow the instructions provided in today's action.

For more information about lead in air visit:

[www.epa.gov/air/lead](http://www.epa.gov/air/lead)