



# Environmental Information

## Standard Set for Airborne Lead

A new national ambient air quality standard to protect the public health from exposure to lead became effective October 5, 1978. The standard for this pollutant which at low levels may harm human nervous and blood-forming systems was set at 1.5 micrograms per meter of air based on a three-month average.

This is the first national ambient air standard EPA has issued since 1971.

## Health Effects of Lead Pollution

It is well known that at certain levels, lead is highly toxic, but increasingly there is evidence that even at low levels lead may have more harmful effects than was previously believed.

Lead enters the human body principally through ingestion and inhalation with subsequent absorption into the blood stream and distribution to all body tissues. Exposure to airborne lead can occur directly by breathing or indirectly by eating lead-contaminated food, water, or non-food materials including dust and soil. Lead accumulates in the human body throughout life, to a large extent immobilized in bone. A significant amount of body lead is in the blood and soft tissues.

Lead has its most pronounced effects on the blood forming, nervous, and kidney systems, but may also harm the reproductive, endocrine, hepatic (liver) cardiovascular, immunologic and gastrointestinal systems. Exposure to high lead levels may have severe and sometimes fatal consequences such as brain disease, colic, palsy and anemia.

## Children Found Most Sensitive

In establishing the new standard, EPA determined that young children, ages 1 to 5, are the most sensitive to lead exposure. In 1970 there were 20 million children in the United States under five years old. Of these 12 million lived in urban areas and 5 million lived in center cities where lead exposure is the highest.

The new standard is based on preventing children from experiencing exposure where their blood level would exceed 30 micrograms of lead per deciliter of blood. Blood lead levels above 30 micrograms are associated with an impairment in cell function which EPA regards as adverse to the health of chronically exposed children. There are a number of other adverse health effects associated with higher blood lead levels in children, including the possibility of nervous system damage even without overt symptoms of lead poisoning.

Where Does  
Airborne Lead  
Come From?

The greatest source of airborne lead is automobiles using leaded gasoline. Of the more than 160,000 metric tons of lead emitted into the Nation's air annually, about 90 percent comes from automobile exhaust. This is an especially acute problem in urban areas and EPA's phasedown of lead in gasoline (to be completed by October 1979) is helping to reduce lead levels in urban children.

The second principal source of airborne lead is from industrial plants such as non-ferrous smelters. Currently in the United States there are six primary lead smelters, 16 primary copper smelters and over 50 secondary lead smelters. Most primary smelters are located in sparsely populated areas. But even these smelters can pose a definite health hazard to those people living near them.

Reducing lead emissions from smelters will be difficult. EPA plans to work closely with the States and the affected industry firms to develop plant-by-plant analysis of how serious the problems are and what a reasonable compliance program is for each smelter. EPA's goal is to formulate control strategy which will avoid significant disruption in the non-ferrous smelting industry, without compromising protection of human health.

Lead in the  
Workplace

The Occupational Safety and Health Administration (OSHA) has set a standard to protect workers from lead exposure. EPA coordinated with OSHA in developing standards and compliance strategies.

Other Sources  
of Lead  
Exposure

In addition to air pollution there are other sources of lead exposure. Lead is found in paint, inks, water supply and distribution systems, pesticides and fresh and processed food.

In other actions to control lead in the environment, EPA, in 1975, set national drinking water standards for lead, and by 1979 will develop industrial water pollution rules for this pollutant. Regulations have also been issued to control lead arsenate pesticides and to require safe disposal procedures for all lead-containing pesticides. Under the Resource Conservation and Recovery Act of 1976, EPA is authorized to regulate the recycling and disposal of used crankcase oil, lead acid batteries and other wastes containing lead.

Other Federal  
Agency Actions

Other Federal agencies which have or will take actions concerning lead are the Department of Housing and Urban Development, the Consumer Product Safety Commission, the Food and Drug Administration, and the Center for Disease Control.