

**Frequently Asked Questions About****SULFURIC ACID****What is sulfuric acid?**

Sulfuric acid ( $H_2SO_4$ ) is a colorless, odorless liquid that is very corrosive and reacts chemically with other materials. Cutting onions releases a chemical that, when mixed with eye moisture, creates dilute sulfuric acid.

**Where can sulfuric acid be found in the environment?**

Volcanoes are the largest natural source of sulfuric acid emissions into the environment. Many industrial processes also release sulfuric acid into the environment.

**How is sulfuric acid used?**

Sulfuric acid is one of the most widely used industrial chemicals. In the United States, about 40 million tons of sulfuric acid are manufactured for industrial use each year. It has several industrial purposes, including:

- pulp and paper manufacturing,
- copper, steel, and metal fabrication,
- fertilizer, chemical, textile, explosive, and paint manufacturing,
- soap and detergent production,
- water treatment, and
- petroleum product refinement.

**Do electric utilities release sulfuric acid into the environment?**

Yes. Sulfur is present in coal and oil. When electric utilities burn these fuels in their power plants, some of the sulfur is released. This sulfur combines with oxygen and water vapor to form dilute sulfuric acid vapor. As it cools, some of this sulfuric acid vapor forms tiny liquid droplets or thin films on tiny ash particles. Vapor, liquid droplets, and ash particles containing dilute sulfuric acid can enter the air in gases leaving power plant stacks. About three percent of the sulfur in fuels burned by power plants is usually released into the air as sulfuric acid. The amount of sulfuric acid released by an individual power plant depends on the sulfur content of the fuel it burns, as well as operating and air pollution control practices at the plant.

## **SULFURIC ACID**

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According to the Environmental Protection Agency (EPA), power plants released 56,459 tons of sulfuric acid into the environment in 2004, about 76 percent of all the sulfuric acid released by reporting industries. All industries reporting to EPA released 74,033 tons of sulfuric acid into the environment in 2004. Power plants reduced sulfuric acid releases nearly 26 percent from 1999 to 2004.

### **How could I be exposed to sulfuric acid? Will exposure affect me?**

Sulfuric acid can be inhaled in very small amounts from the air. It is also handled in the average high school chemistry laboratory.

Industrial workers are more likely to be exposed to concentrated sulfuric acid fumes or solutions than those in other industries. Exposure to more concentrated levels of sulfuric acid fumes can irritate the eyes, skin, and breathing passages, and in extreme cases, permanently damage the nose and lungs. Also, direct contact with concentrated sulfuric acid solutions can burn the skin and destroy eyesight, and swallowing them can be fatal. Sulfuric acid has not been found to cause cancer in animals or to affect their reproduction.

### **What do EPA and other experts say about sulfuric acid?**

EPA refers to sulfur acid-bearing “mists, vapors, gas, fog, and other airborne forms of any particle size” as “sulfuric acid aerosols.” The agency has not classified sulfuric acid as a hazardous air pollutant. There is no evidence that common exposures to the dilute sulfuric acid from power plants can harm human health.

Researchers continue to study the possible health effects of breathing particles, including sulfuric aerosols.

### **Where can I get more information?**

- U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460; (202) 260-2090; <http://www.epa.gov/>
- U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 200 Independence Avenue, S.W., Washington, D.C. 20201; (877) 696-6775; <http://www.atsdr.cdc.gov/>
- Electric Power Research Institute, 3412 Hillview Ave., P.O. Box 10412, Palo Alto, CA 94303;



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