

## HOW DOES ACRYLONITRILE AFFECT HUMAN HEALTH AND THE ENVIRONMENT?

Effects of acrylonitrile on human health and the environment depend on how much acrylonitrile is present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs.

Breathing acrylonitrile for short periods of time adversely affects the nervous system, the blood, the kidneys, and the liver. These effects subside when exposure stops. Nervous system effects of AN range from headaches and dizziness to irritability, rapid heart beat, and death. Symptoms of acrylonitrile poisoning may occur quickly after exposure or after levels of breakdown products like cyanide build up in the body. Direct contact with acrylonitrile liquid severely damages the skin. Acrylonitrile liquid or vapor irritates the eyes, the nose, and the throat. These effects are not likely to occur at levels of acrylonitrile that are normally found in the environment.

There are several health effects case studies of acrylonitrile workers. The methods used in these studies limit conclusions that can be made from the results. These studies show that workers repeatedly breathing small amounts of acrylonitrile over long periods of time may develop cancer. Cancer occurs primarily in the respiratory tract. Laboratory studies show that repeated exposure to acrylonitrile in air or in drinking water over a lifetime also causes cancer in animals. Studies also show that repeated exposure to acrylonitrile adversely affects the respiratory and central nervous systems and causes developmental toxicity in laboratory animals.

Acrylonitrile has moderate toxicity to aquatic life. By itself it is not likely to cause environmental harm at levels normally found in the environment. Acrylonitrile can contribute to the formation of photochemical smog when it reacts with other volatile substances in air.

## WHAT EPA OFFICES OR OTHER FEDERAL AGENCIES OR OTHER GROUPS CAN I CONTACT FOR ADDITIONAL INFORMATION ON ACRYLONITRILE?

EPA OFFICE	LAW	PHONE NUMBER
Pollution Prevention & Toxics	Emergency Planning and Community Right-to-Know Act (EPCRA) (§ 313/ Toxics Release Inventory data)	(202) 260-1531
	Toxic Substances Control Act (TSCA)	(202) 554-1404
Air	Clean Air Act	(919) 541-0888
Solid Waste & Emergency Response	Resource Conservation and Recovery Act (RCRA)	(800) 535-0202
	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) EPCRA (§302)	
Water	Clean Water Act	(202) 260-7588
	Safe Drinking Water Act	(800) 426-4791

*For general information on reducing or eliminating industrial pollutants through technology transfer, education, and public awareness, contact the Pollution Prevention Information Clearinghouse, (202) 260-1023.*

OTHER FEDERAL AGENCY/DEPARTMENT OR GROUP	PHONE NUMBER
American Conference of Governmental Industrial Hygienists	(513) 742-2020
Consumer Product Safety Commission	(301) 504-0994
Food and Drug Administration	(301) 443-3170
National Institute for Occupational Safety & Health	(800) 356-4674
Occupational Safety & Health Administration <i>(Check local phone book for phone number under Department of Labor)</i>	

The Support Document for this and other OPPT Chemical Fact Sheets can be found on the Internet at:  
<http://www.epa.gov/chemfact>