WHAT EPA PROGRAM OFFICES REGULATE ACETONITRILE, AND UNDER WHAT LAWS IS IT REGULATED?

EPA OFFICE	LAW	PHONE NUMBER
Pollution Prevention & Toxics	Toxic Substances Control Act	(202) 554-1404
	Emergency Planning and Community Right-to-Know Act (EPCRA): Regulations (§ 313)	(800) 535-0202
	Toxics Release Inventory data	(202) 260-1531
Air	Clean Air Act	(919) 541-0888
Solid Waste &	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)	(800) 535-0202
Emergency Response	Resource Conservation and Recovery Act / EPCRA (§ 304/311/312)	

A technical support document is available from the TSCA Assistance Information Service, (202) 554-1404.

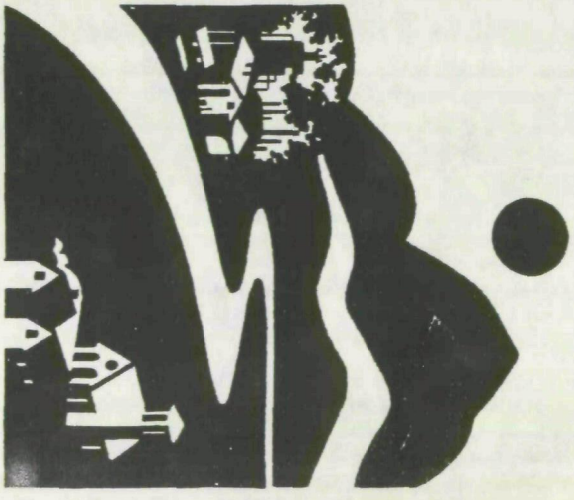
WHAT OTHER FEDERAL AGENCIES OR GROUPS CAN I CONTACT FOR INFORMATION ON ACETONITRILE?

AGENCY/GROUP	PHONE NUMBER
American Conference of Governmental Industrial Hygienists	(513) 742-2020
National Institute for Environmental Health Sciences (EnviroHealth Clearinghouse)	(800) 643-4794
National Institute for Occupational Safety and Health (NIOSH)	(800) 356-4674
Occupational Safety and Health Administration	(Check your local phone book under U.S. Department of Labor)

EPA
United States
Environmental Protection Agency
Mail Code 7401

Washington, DC 20460

Official Business
Penalty for Private Use
$300



EPA Chemicals in the Environment

ACETONITRILE

(CAS NO. 75-05-8)

United States
Environmental Protection
Agency

Office of Pollution Prevention and Toxics (7401)

EPA 749-F-94-004
December 1994

Chemicals can be released to the environment as a result of their manufacture, processing, and use. The EPA has developed information summaries on selected chemicals to describe how you might be exposed to these chemicals, how exposure to them might affect you and the environment, what happens to them in the environment, who regulates them, and whom to contact for additional information. EPA is committed to reducing environmental releases of chemicals through source reduction and other practices that reduce creation of pollutants.

WHAT IS ACETONITRILE, HOW IS IT USED, AND HOW MIGHT I BE EXPOSED?

Acetonitrile (also called methyl cyanide) is a colorless, flammable liquid. It occurs naturally in coal tar and cigarette smoke. It is produced in large amounts (32 million pounds in 1992) by four companies in the United States. US demand for acetonitrile is likely to follow trends of general growth of the, US economy. The largest users of acetonitrile are companies that use the chemical to extract inorganic and organic chemicals. It is used mainly as to extract butadiene. Companies also use acetonitrile to make pesticides.

Exposure to acetonitrile can occur in the workplace or in the environment following releases to air, water, land, or groundwater. Exposure can also occur when people smoke cigarettes. Acetonitrile enters the body when breathed in with contaminated air or when consumed with contaminated food or water. It can also be absorbed through skin contact. It does not remain in the body due to its breakdown and removal in expired air or urine.

WHAT HAPPENS TO ACETONITRILE IN THE ENVIRONMENT?

Acetonitrile evaporates when exposed to air. It dissolves completely when mixed with water. Most direct releases of acetonitrile to the environment are to underground sites or to air. It also evaporates from water and soil exposed to air. Once in air, acetonitrile breaks down to other chemicals. Microorganisms that live in water and in soil can also break down acetonitrile. Because it is a liquid that does not bind well to soil, acetonitrile that makes its way into the ground can move through the ground and enter groundwater. Plants and animals are not likely to store acetonitrile.

HOW DOES ACETONITRILE AFFECT HUMAN HEALTH AND THE ENVIRONMENT?

Effects of acetonitrile on human health and the environment depend on how much acetonitrile 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 large amounts of acetonitrile for short periods of time adversely affects the human nervous system, respiratory system, and circulatory system. Effects range from abnormal salivation, vomiting, confusion, and rapid breathing and heart rate to coma and death. Symptoms of acetonitrile poisoning can occur quickly after exposure but often occur after levels of breakdown products like cyanide build up in the body. Direct contact with acetonitrile liquid or vapor irritates the skin, the eyes, the nose, and the throat. These effects are not likely to occur at levels of acetonitrile that are normally found in the environment.

Human health effects associated with breathing or otherwise consuming smaller amounts of acetonitrile over long periods of time are not known. Laboratory studies show that repeat exposure to acetonitrile can adversely affect the blood as well as the nervous system, the lungs, the liver, and the thymus of animals. Evidence from animal studies also show that acetonitrile can adversely affect the developing fetus.

Acetonitrile by itself is not likely to cause environmental harm at levels normally found in the environment. Acetonitrile can contribute to the formation of photochemical smog when it reacts with other volatile organic carbon substances in air.