WHAT EPA PROGRAM OFFICES REGULATE METHYL-TERT-BUTYL ETHER, 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 & Emergency Response	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)	(800) 535-0202
	Resource Conservation and Recovery Act / EPCRA (§ 304/311/312)	
Water	Safe Drinking Water Act	(800) 426-4791

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 METHYL-TERT-BUTYL ETHER?

AGENCY/GROUP	PHONE NUMBER
Agency for Toxic Substances and Disease Registry	(404) 639-6000
American In dustrial Hygiene Association	(703) 849-8888
Consumer Product Safety Commission	(301) 504-0994
National Institute for Environmental Health Sciences (EnviroHealth Clearinghouse)	(800) 643-4794

EPA
United States
Environmental Protection Agency
Mail Code 7401

Washington, DC 20460

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United States
Environmental Protection
Agency

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Office of Pollution Prevention and Toxics (7401)

EPA Chemicals in the Environment

METHYL-TERT-BUTYL ETHER
(CAS NO. 1634-04-4)

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 METHYL TERTIARY-BUTYL ETHER, HOW IS IT USED, AND HOW MIGHT I BE EXPOSED?

Methyl tertiary-butyl ether (also called MTBE) is a colorless, flammable liquid with a strong odor. It does not occur naturally but is produced in very large amounts (9.1 billion pounds in 1992) by 27 companies in the United States. US demand for MTBE is likely to continue to grow rapidly. The almost exclusive users of MTBE are companies that add the chemical to gasoline. MTBE is added to gasoline to improve combustion and to reduce harmful carbon monoxide emissions. It is added to gasoline to improve the overall quality of air. The goal is to help cities meet air quality standards mandated by EPA and the Clean Air Act. Companies use small amounts of MTBE to make high purity isobutylene.

Exposure to MTBE can occur in the workplace or in the environment following releases to air, water, land, or groundwater. Exposure can also occur when people:

* are in places where gasoline is being pumped into vehicles,
* fill gasoline-powered home maintenance equipment,
* live near bulk gasoline loading and unloading facilities, or
* live near facilities that can leak gasoline from under ground storage containers.

Use of MTBE-blended gasoline is likely to be at its peak during the winter season, especially in areas that use it to meet air quality standards. MTBE enters the body when breathed in with contaminated air or when consumed with contaminated food or water. It is also absorbed through skin contact. Methyl tertiary-butyl ether does not remain in the body due to its breakdown and removal.

WHAT HAPPENS TO MTBE IN THE ENVIRONMENT?

Methyl tertiary-butyl ether evaporates when exposed to air. It dissolves when mixed with water. Most direct releases of MTBE to the environment are to air. MTBE also evaporates from water and soil exposed to air. Once in air, MTBE breaks down to other chemicals. Because it is a liquid that does not bind well to soil, MTBE that makes its way into the ground can move through the ground and enter groundwater. Plants and animals are not likely to store methyl tertiary-butyl ether.

HOW DOES MTBE AFFECT HUMAN HEALTH AND THE ENVIRONMENT?

Effects of methyl-tertiary butyl ether on human health and the environment depend on how much MTBE 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.

Human health effects associated with breathing or otherwise consuming large amounts of MTBE for short periods of time are not known. Laboratory studies show that breathing large amounts of MTBE for short periods of time adversely affects the nervous system of animals. Effects range from hyperactivity and incoordination to convulsions and unconsciousness.

Human health effects associated with breathing or otherwise consuming smaller amounts of MTBE over long periods of time are not known. Laboratory studies show that repeat exposure to large amounts of MTBE in air causes kidney damage and adversely affects the developing fetus of animals. Studies also show that lifetime exposure to MTBE in air causes cancer in animals. The Agency is currently reviewing potential health effects of MTBE in humans.

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