ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

METHYL MERCAPTAN
CAS # 74-93-1

This fact sheet answers the most frequently asked health questions (FAQs) about methyl mercaptan. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Methyl mercaptan is a natural substance released from decaying matter. Little is known about the health effects of this compound. This chemical has been found in at least 2 of the 1,300 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is methyl mercaptan?

(Pronounced měthʹəl mŭr-kăpʹtăn)

Methyl mercaptan is a colorless gas with a smell like rotten cabbage. It is a natural substance found in the blood, brain, and other tissues of people and animals. It is released from animal feces. It occurs naturally in certain foods, such as some nuts and cheese.

Methyl mercaptan is released from decaying organic matter in marshes and is present in the natural gas of certain regions in the United States, in coal tar, and in some crude oils. It is manufactured for use in the plastics industry, in pesticides, and as a jet fuel additive. It is also released as a decay product of wood in pulp mills.

What happens to methyl mercaptan when it enters the environment?

- Methyl mercaptan is released to the air from both natural and industrial sources.
- Most of the methyl mercaptan released to the environment goes into the air.
- Sunlight can break it down in the air to other substances.
- Methyl mercaptan may be formed in water from chemical reactions.
- It occurs naturally in soil.

How might I be exposed to methyl mercaptan?

- Methyl mercaptan is always present in your body.
- You may breathe it in the air if you live near a natural source of the gas, such as a marsh.
- You may eat it in certain foods, such as nuts and cheese.
- You may be exposed if you work at a wood-pulp mill or sewage treatment plant.
- You could also be exposed if you work in a factory that uses it to make other products such as jet fuel, pesticides, or poultry feed.

How can methyl mercaptan affect my health?

Very little is known about the health effects of methyl mercaptan. The only information available is about a worker exposed to very high levels of this compound when he opened and emptied tanks of this compound. He developed anemia, went into a coma, and died about a month later.

ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html

We do not know whether long-term exposure to low levels of methyl mercaptan can result in harmful health effects.

How likely is methyl mercaptan to cause cancer?

There is no information available about whether methyl mercaptan causes cancer in people or animals. The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified methyl mercaptan for carcinogenicity.

Is there a medical test to show whether I've been exposed to methyl mercaptan?

Methyl mercaptan is always present in your body. There is a test that can be used to find out if it is present in your blood at levels that are higher than normal. This test requires special equipment and is not usually available in a doctor's office. It can be done in a special laboratory. However, this test cannot be used to find out how much methyl mercaptan you were exposed to or to predict whether harmful health effects will occur.

Has the federal government made recommendations to protect human health?

The EPA requires that discharges, spills, or accidental releases of 100 pounds or more of methyl mercaptan must be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 20 milligrams of methyl mercaptan per cubic meter of air (20 mg/m^3) for an 8-hour workday in a 40-hour workweek.

The American Conference of Governmental and Industrial Hygienists (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH) recommend an occupational exposure limit of 1 mg/m^3 for methyl mercaptan.

The federal recommendations have been updated as of July 1999.

Glossary

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Long-term: Lasting one year or longer.

Milligram (mg): One thousandth of a gram.

National Priorities List: A list of the nation's worst hazardous waste sites.

Pesticide: A substance that kills pests.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological rofile for methyl mercaptan. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.