

# Methyl *tert*-Butyl Ether (MTBE)-ToxFAQs™

## What is MTBE?

Methyl *tert*-butyl ether (MTBE) is a flammable, colorless liquid with a disagreeable odor.

MTBE was added to gasoline in the mid-to-late 1980s to increase fuel efficiency and decrease pollution, with peak usage during the 1990s. When MTBE started to be detected in groundwater, several states banned its use in gasoline and it has not been added to gasoline in the United States since 2005. MTBE was produced in the United States for export to other countries as recently as December 2020.



MTBE can also be used to dissolve gallstones in patients for which surgical options are too risky. Patients treated in this way have MTBE delivered directly to their gall bladders through special tubes that are surgically inserted. MTBE has not been approved for medical use in the United States since 2015, but is still used as a non-surgical option in some countries.

## What happens to MTBE in the environment?

MTBE quickly evaporates from open containers and surface water, so it is commonly found as a vapor in the air. Small amounts of MTBE may dissolve in water and get into underground water. MTBE can quickly move through the soil; therefore, once in the soil, it can also make its way to underground water. MTBE breaks down quickly in the air and it does not significantly build up in plants or animals.

## How can I be exposed to MTBE?

When MTBE stopped being added to gasoline, the amount found in the environment dramatically decreased. As a result, the amount detected in blood samples from the general population has dramatically decreased. Currently, most people are not likely to come in contact with this chemical. The most likely way that you could be exposed to MTBE is by breathing contaminated air or drinking contaminated water or living near a hazardous waste site. If your water has MTBE in it, activities such as showering or bathing can expose you to this chemical. MTBE found in soils can become a vapor and enter your home, usually through a basement; this is known as vapor intrusion.

**Since MTBE is no longer added to gasoline in the United States, your risk of exposure is low.**

## How can MTBE affect my health?

Breathing gasoline with MTBE may cause headaches, nausea or vomiting, dizziness, a feeling of spaciness, and coughing in humans. These effects may be partially due to other chemicals in gasoline, as exposure to low levels of MTBE for short periods did not cause these effects. Animals that breathed high levels of MTBE were less active and showed reduced reflexes and coordination, difficulty breathing, and liver effects.

Animals that were orally administered high levels of MTBE showed decreased activity and incoordination (similar to inhalation exposure), liver effects, abnormal growth of the lymph nodes, and damage to the developing and mature male reproductive system. Stomach irritation was also observed at high oral doses but is not expected in humans at low environmental levels.

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## Can MTBE cause cancer?

The [U.S. Department of Health and Human Services \(DHHS\)](#) has not classified MTBE's cancer-causing risk in humans.

The [U.S. Environmental Protection Agency \(EPA\)](#) has not classified MTBE's cancer-causing risk in humans.

The [International Agency for Research on Cancer \(IARC\)](#) has determined that MTBE is not classifiable as to its ability to cause cancer in humans.

## Can I get a medical test to check for MTBE?

There are tests available to measure MTBE and its breakdown product in your breath, blood, and urine. MTBE does not stay in your body long, so these tests need to be done soon after exposure (up to 1–2 days). These tests cannot predict whether you will have health problems from the exposure to MTBE. Doctor's offices do not routinely offer these tests. If you think you have been exposed to this or any other chemical, talk to your doctor or nurse or call poison control.

## How can I protect myself and my family from MTBE?

If your drinking water is supplied by a public water system, you can contact your supplier for information on MTBE levels in the water. If you have a private well for water, your local health department may be able to tell you if MTBE has been found in water in your area. You may also want to get your water tested by a certified laboratory.

Children should avoid playing near industrial or hazardous waste sites to prevent exposures to chemicals including MTBE.

## For more information:

Call **CDC-INFO** at 1-800-232-4636, or submit your question online at <https://wwwn.cdc.gov/dcs/ContactUs/Form>

Go to ATSDR's Toxicological Profile for MTBE: <https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=228&tid=41>

Go to ATSDR's Toxic Substances Portal: <https://wwwn.cdc.gov/TSP/index.aspx>

Find & contact your ATSDR Regional Representative at [http://www.atsdr.cdc.gov/DRO/dro\\_org.html](http://www.atsdr.cdc.gov/DRO/dro_org.html)

