

Toluene - ToxFAQs™

What is toluene?

Toluene is a clear, colorless liquid with a distinctive smell. It occurs naturally in crude oil and in the tolu tree. Toluene is produced in the process of making gasoline and other fuels from crude oil and in making coke from coal.



Toluene is a good solvent (a substance that can dissolve other substances). It is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes. Toluene is also used in the manufacture of other chemicals, nylon, and plastics. It is also added to gasoline along with benzene and xylene to improve octane ratings.

What happens to toluene in the environment?

Toluene can enter the air from car exhaust or when materials that contain it (such as paints or fingernail polish) are used. It can get into surface waters (like lakes and streams), groundwater, or soil if solvents or petroleum products are accidentally spilled, or from leaking underground storage tanks at gasoline stations and other facilities. When toluene-containing products are placed in landfills or waste disposal sites, toluene can enter the soil or water near the waste site.

Toluene does not usually stay in the environment long. In surface water or soil, it will readily evaporate into the air or be degraded by bacteria. In the air, toluene rapidly breaks down by reacting with other chemicals or oxygen in the air. Below the surface, microorganisms will break down toluene.

How can I be exposed to toluene?

You may be exposed to toluene by breathing contaminated air or touching products that contain this chemical. Car exhaust contains toluene; therefore, if you spend time in or near vehicles or traffic, you may be exposed to this chemical. People who work with gasoline, paint, or dyes may be exposed to higher levels of toluene than most people.

Toluene is not frequently detected in drinking water or food. People that abuse (inhale) certain products such as glue or paint thinner can be exposed to toluene.

How can toluene affect my health?

Toluene may affect the nervous system. Low to moderate levels can cause headaches, dizziness, tiredness, confusion, weakness, drunken-type actions, memory loss, nausea, and loss of appetite. These symptoms usually disappear when exposure stops.

Long-term daily exposure to toluene in the workplace may cause some hearing and color vision loss. Repeatedly breathing toluene from glue or paint thinners may permanently damage the brain.

Exposure to high levels of toluene during pregnancy, such as those associated with solvent abuse, may lead to developmental effects, such as reduced mental abilities and growth in children.

In animal studies, the effects of toluene were similar to those seen in humans. In addition, it was found that animals that drank toluene also had decreased immune responses.

Toluene can be found in gasoline products, paints, stain removers, and fingernail polish. Breathing toluene can cause headaches, dizziness, and nausea.

Toluene

Can toluene cause cancer?

Studies in workers and animals exposed to toluene generally show that toluene does not cause cancer.

The [U.S. Department of Health and Human Services \(DHHS\)](#) has not evaluated the carcinogenicity (ability to cause cancer) of toluene.

The [U.S. Environmental Protection Agency \(EPA\)](#) has determined that there is inadequate information to assess the carcinogenicity of toluene.

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

Can I get a medical test to check for toluene?

Toluene and its breakdown products can be measured in blood and urine. These tests are only useful if done within several days after exposure. These tests cannot predict whether you will have health problem from exposure to toluene.

How can I protect myself and my family from toluene?

To reduce exposure to toluene, you should use products that contain it (such as paints, nail polish, glues, inks, and stain removers) in well-ventilated areas. When not in use, these products should be tightly covered to prevent evaporation into the air and, if possible, stored in a shed or an outside location. Always store household chemicals in their original labeled containers.

Have your tap water tested if you are concerned it may have toluene and, if necessary, take steps to protect yourself. Keep children from eating or playing in the dirt if you live near a waste site.

Sometimes, older children sniff household chemicals in an attempt to get high. Talk with children about the dangers of sniffing chemicals.

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 Toluene: <https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=161&tid=29>

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