



TETRYL

What is tetryl?

Tetryl is a colorless to yellow crystal-like solid that can exist as airborne dust under certain conditions. Odorless, it dissolves slightly in water and in other liquids. Tetryl is a man-made substance once used in the United States to make explosives, mostly during World Wars I and II. Other common names for tetryl are nitramine, tetralite, and tetril.

Where can tetryl be found and how is it used?

Tetryl is found in military storage areas, but the U.S. Department of Defense is destroying it. Tetryl was often made as pellets or powder. Under some production conditions, it could exist in the air as a dust.

Tetryl is released to the air, water, and soil when old explosives detonate. Tetryl may still exist in the soil and water near military storage areas or U.S. Army ammunition plants. Although tetryl is unlikely to vaporize, it may be present in air mixed with dust from these sites. In some soils, tetryl seems to break down fast into products including picric acid.

Tetryl probably does not travel easily from soil to groundwater, but erosion at polluted sites may release tetryl to nearby surface water. Once in the water, tetryl may dissolve or join with small bits of solids, sediments, or organic debris and settle to the bottom. Tetryl breaks down faster in sunlit rivers and lakes than in groundwater.

How can people be exposed to tetryl?

You could be exposed to tetryl through:

- **Breathing** tetryl in dust near a military site. In the past, employees may have breathed it during the manufacture, use, shipping or loading phases. If you clean up tetryl now, you may breathe it.
- **Drinking** well water containing tetryl, such as near a military site.
- **Touching** soil or water containing tetryl near a military installation site. You may have touched it if you made, used, packed, or loaded tetryl. If you clean up tetryl, you could touch it.
- **Eye contact** by getting dust containing tetryl into the eyes.

Poison Control Center 24/7 Emergency Contact Number: 1-800-222-1222
DPH 24/7 Contact Number: 1-888-295-5156



Frequently Asked Questions

How does tetryl work and how can it affect my health?

Tetryl enters the body through breathing, drinking, or touching it. Not much is known about tetryl and how it affects cells. Animal studies suggest that tetryl probably leaves the body in urine after breaking down to other substances.

Workers at military sites during World Wars I and II sometimes breathed tetryl dust. They experienced a range of symptoms including cough, extreme tiredness, headaches, irritated eyes, lack of appetite, nosebleeds, and upset stomachs. Workers who frequently handled tetryl often had yellow stains on the hands, neck, and hair and experienced rashes, while others had respiratory allergies resulting in severe coughing and wheezing.

In one animal study, rabbits were fed high doses of tetryl daily for six to nine months. The rabbits had kidney and liver problems, as well as lower blood clotting ability and changes in the spleen. It is not known if these effects would occur in humans. It is unknown if tetryl causes birth defects. It is also not known if tetryl affects reproduction in humans.

How is tetryl poisoning treated?

Information on treatment is not available. Doctors will treat the symptoms of poisoning and exposure.

What should I do if exposed to tetryl?

- **If you get tetryl on your clothes**, change into clean clothing right away. The clothes should be washed by a person who knows the dangers of exposure to tetryl.
- **If you get tetryl on your skin**, wash or shower right away.

What factors limit use or exposure to tetryl?

Most people are unlikely to be exposed to tetryl unless they clean up or destroy it.

Safe work methods can limit exposure. Work areas should be closed off. There should be a source of fresh air, and air should be vented out at the site of chemical release. (If venting cannot be done, employee should wear a respirator.) Employees should wear protective clothing and wash well immediately after any exposure to tetryl, as well as washing again at the end of their work shift. The clothes should be bagged and discarded as waste and left at the work site.

If you live near a military site where tetryl was used, avoid contact with soil or water that may be polluted.

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

There is no test to show if you have been exposed to tetryl.

Technical information for tetryl

CAS Number: 479-45-8

Chemical Formula: C₇H₅N₅O₈

Carcinogenicity (EPA): Not classifiable for human carcinogenicity.

MCL (Drinking Water): There is no MCL for tetryl.

OSHA Standards (PEL): 1.5 milligrams per cubic meter of air.

NIOSH Standards: 1.5 milligrams per cubic meter of air.

Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. *Toxicological profile for Tetryl*. Atlanta, GA: U.S. Department of Health and Human Services.

<https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=1019&tid=216>