



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

convulsions, slurred speech, disorientation, and heart and kidney problems.

Female animals that ate large amounts of ethylene glycol had babies with birth defects, while male animals had reduced sperm counts. However, these effects were seen at very high levels and would not be expected in people exposed to lower levels at hazardous waste sites.

Ethylene glycol affects the body's chemistry by increasing the amount of acid, resulting in metabolic problems. Similar to ethylene glycol, propylene glycol increases the amount of acid in the body. However, larger amounts of propylene glycol are needed to cause this effect.

### **How likely are ethylene and propylene glycol to cause cancer?**

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified ethylene glycol and propylene glycol for carcinogenicity. Studies with people who used ethylene glycol did not show carcinogenic effects. Animal studies also have not shown these chemicals to be carcinogens.

### **Is there a medical test to show whether I've been exposed to ethylene or propylene glycol?**

Tests are available to determine if you have been exposed to ethylene glycol. These tests are only used on people who are showing symptoms of ethylene glycol poisoning (but they could be used in other situations). The tests are most often used on people who have intentionally consumed, or who suspect they have consumed, large amounts of ethylene glycol.

Propylene glycol is generally considered to be a safe chemical, and is not routinely tested for, unless specific exposure, such as to a medicine or cosmetic, can be linked with symptoms. Since both chemicals break down very quickly in

the body, they are very difficult to detect, even though symptoms may be present.

### **Has the federal government made recommendations to protect human health?**

The EPA has set a drinking water guideline for ethylene glycol of 7,000 micrograms (7,000 µg/L) in a liter of water for an adult.

The Food and Drug Administration (FDA) has classified propylene glycol as "generally recognized as safe," which means that it is acceptable for use in flavorings, drugs, and cosmetics, and as a direct food additive.

The American Conference of Governmental Industrial Hygienists (ACGIH) recommends a maximum level of 127 milligrams of ethylene glycol per cubic meter of air (127 mg/m<sup>3</sup>) for a 15-minute exposure.

### **Glossary**

Acid: A sour substance.

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Metabolic: Chemical changes in cells that provide energy to the body.

Synthetic: Made by humans.

### **Source of Information**

This ToxFAQs information is taken from the 1997 Toxicological Profile for Ethylene Glycol and Propylene Glycol produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Animal testing is sometimes necessary to find out how toxic substances might harm people and how to treat people who have been exposed. Laws today protect the welfare of research animals and scientists must follow strict guidelines.

**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 E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. 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.

