ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

PROPYLENE GLYCOL

CAS # 57-55-6

Division of Toxicology and Environmental Medicine ToxFAQs™ September 1997

This fact sheet answers the most frequently asked health questions (FAQs) about propylene glycol. For more information, call the ATSDR Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is 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: Propylene glycol is a clear liquid used in antifreeze and deicing solutions. It is generally regarded as safe for use in food. Propylene glycol has been found in at least 5 of the 1,416 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is propylene glycol?

(Pronounced prō′ pə-lēn′ glī′ kŏl)

Propylene glycol is a clear, colorless, slightly syrupy liquids at room temperature. It may exist in air in the vapor form, although propylene glycol must be heated or briskly shaken to produce a vapor. Propylene glycol is practically odorless and tasteless.

Propylene glycol is used to make antifreeze and deicing solutions for cars, airplanes, and boats; to make polyester compounds; and as solvent in the paint and plastics industries.

The Food and Drug Administration (FDA) has classified propylene glycol as an additive that is "generally recognized as safe" for use in food. It is used to absorb extra water and maintain moisture in certain medicines, cosmetics, or food products. It is a solvent for food colors and flavors.

What happens to propylene glycol when it enters the environment?

❑ Propylene glycol is not likely to exist in large amounts in air.
❑ About half of the propylene glycol that enters the air will break down in 24–50 hours.
❑ It will break down within several days to a week in water and soil.

How might I be exposed to propylene glycol?

❑ You can be exposed to propylene glycol by eating food products, using cosmetics, or taking medicine that contains it.
❑ If you work in an industry that uses propylene glycol or products containing propylene glycol, you could be exposed by breathing or touching these substances.

How can propylene glycol affect my health?

Propylene glycol increases the amount of acid in the body. However, large amounts of propylene glycol are needed to cause this effect.

Propylene glycol breaks down at the same rate as ethylene glycol, although it does not form harmful crystals when it breaks down.

Frequent skin exposure to propylene glycol can sometimes irritate the skin.

How likely is 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 propylene glycol for carcinogenicity. Animal studies have not shown this chemical to be carcinogen.

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Is there a medical test to determine whether I have been exposed to propylene 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 propylene glycol breaks down very quickly in the body, it is very difficult to detect, even though symptoms may be present.

Has the federal government made recommendations to protect human health?

The Food and Drug Administration 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.

Glossary

Acid: A sour substance.
Carcinogenicity: Ability to cause cancer.
CAS: Chemical Abstracts Service.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological Profile for Propylene Glycol. 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 and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-800-232-4636, 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.