



## Bureau of Environmental Health and Radiation Protection

"Protect and improve the health of all Ohioans by preventing disease, promoting good health and assuring access to quality care."

# Isopentane & 2,2,4- Trimethylpentane (TMP)

## Answers to Frequently Asked Health Questions

### What is isopentane? What is 2,2,4-Trimethylpentane (TMP)?

Isopentane (also known as methylbutane) and 2,2,4-Trimethylpentane (also known as TMP and isooctane) are colorless, flammable liquids with a gasoline-like odor.

### How are isopentane and TMP used?

Both Isopentane and TMP are significant components of gasoline.

- TMP is added to gasoline to enhance performance (anti knocking) and it is not found in common consumer products.
- Isopentane is extremely flammable and is a component of gasoline. Mixed with other compounds and stabilized, Isopentane can be used in cosmetics/personal care products and is used as a component in a type of geothermal power plant.

### How does isopentane and TMP get into the environment?

Since Isopentane and TMP are components of gasoline, they are released into the environment through the manufacture, use, and disposal of products associated with gasoline and petroleum. Automotive exhaust and automotive evaporative emissions are important sources of Isopentane and TMP in the atmosphere.

### What happens to isopentane and TMP in the environment?

Both evaporate quickly in the air and sunlight.

Isopentane and TMP are not soluble (not able to be dissolved in water) and float on water.

Isopentane and TMP can be absorbed by soils. However, when these chemicals come into contact with air in these soils, they will quickly volatilize (turning from a liquid to gas) and be released as soil vapors.

TMP is not readily biodegraded by bacteria in the soils.

### Does Isopentane and TMP cause cancer?

Isopentane and TMP are not known human carcinogens (do not cause cancer)

### How can isopentane and TMP make you sick?

Yes, you can get sick from contact with these two chemicals. But getting sick will depend on:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- General Health, Age, Lifestyle

Young children, the elderly and people with chronic (on-going) health problems are more at risk to chemical exposures.

### How does isopentane and TMP affect health?

The most probable route of exposure to the general population is by inhalation.

Inhalation (breathing) Isopentane and TMP: Breathing high levels of Isopentane and TMP can irritate

the eyes, nose and throat, cause coughing, headaches, blurred vision, dizziness, clumsiness, confusion, and eventually loss of consciousness (passing out). Exposure to high levels of Isopentane can cause cardiac (irregular heartbeat) effects.

Eating or drinking (ingesting) Isopentane: Ingesting high levels of Isopentane may irritate the throat and mouth and cause abdominal pain and vomiting.

Skin (dermal) contact with Isopentane: Brief skin contact to Isopentane and TMP is not irritating. 1-5 hours contact with the skin may cause defatting, drying, itching, redness and possible swelling, all of which are reversible after the contact.

### **References:**

Hazardous Substance Databank. 2004. National Library of Medicine, Bethesda, Maryland.

Household Products Database, U.S. Department of Health & Human Services <http://hpd.nlm.nih.gov/index.htm> (August 2012)

U.S. EPA. Integrated Risk Information System (IRIS). 2,2,4-Trimethylpentane (CASRN 540-84-1) [www.epa.gov/iris/subst/0614.htm](http://www.epa.gov/iris/subst/0614.htm) (June 2010).

### **Where Can I Get More Information?**

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This fact sheet was developed in cooperation with the Agency for Toxic Substances and Disease Registry