

## Intel Chemical of the Month April 2024

# Hexane

### *Editorial Note:*

The accompanying material is compiled from the websites of the National Library of Medicine, the Environmental Protection Agency and the Agency for Toxic Substances and Disease Registry. Some of the material has been edited to make complete sentences, to combine sentences and to move some text for continuity. Hexane is used and emitted by Intel New Mexico.

### **Uses**

n-Hexane is a chemical made from crude oil. Pure n-Hexane is a colorless liquid with a slightly disagreeable odor. It is highly flammable, and its vapors can be explosive. Hexane is used in laboratories. Most of the n-Hexane used in industry is mixed with similar chemicals called solvents. The major use for solvents containing n-Hexane is to extract vegetable oils from crops such as soybeans. These solvents are also used as cleaning agents in the printing, textile, furniture, and shoemaking industries. Certain kinds of special glues used in the roofing and shoe and leather industries also contain n-Hexane. Several consumer products contain n-Hexane, such as gasoline, quick-drying glues used in various hobbies, and rubber cement.

### **Health Hazards**

Acute (short-term) inhalation exposure of humans to high levels of hexane causes mild central nervous system (CNS) effects, including dizziness, giddiness, slight nausea, and headache. Chronic (long-term) exposure to hexane in air is associated with polyneuropathy in humans, with numbness in the extremities, muscular weakness, blurred vision, headache, and fatigue. Neurotoxic effects have also been exhibited in rats. No information is available on the carcinogenic effects of hexane in humans or animals. EPA has classified hexane as a Group D, not classifiable as to human carcinogenicity.

### **Human Toxicity**

Peripheral neuropathy is the main long-term adverse effect, and it has been observed after exposures in the range of 400 ppm [parts per million] for 45 days or 30 ppm for 2 months to 5 years. n-Hexane is on the list of some volatile substances which may be abused by inhalation indicating its potential to cause narcosis in workers. Vehicle repair technicians developed peripheral neuropathy while using an aerosol cleaner containing hexane, acetone, and toluene. Acetone and methyl ethyl ketone amplify the neurotoxicity of n-Hexane. It's a skin irritant, and ingestion can cause aspiration into the lungs. Inhalation may cause lowering of consciousness. It may have adverse effects on human reproduction based on animal studies. It's also an eye irritant and inhalation

may cause drowsiness or dizziness. Aspiration by ingestion may cause lung injury. Prolonged or repeated exposure may cause organ injury. It is also a suspected reproductive toxicant and teratogen [any agent that causes an abnormality following fetal exposure during pregnancy], targeting the peripheral nervous system, the central nervous system, kidneys, and testes.

Populations at risk include “glue sniffers” since hexane is employed as a glue solvent.

Occupational exposure to n-hexane may occur through inhalation and dermal contact with this compound at workplaces where n-hexane is produced or used. Monitoring data indicate that the general population may be exposed to n-hexane primarily via inhalation of ambient air.

Hexane is flammable and flashback along a vapor trail may occur. It is a very dangerous fire and explosion hazard when exposed to heat or flame. Vapor/air mixtures are explosive. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.). Runoff may create a fire or explosion hazard, and containers may explode when heated.



Flammable



Irritant



Health  
Hazard



Environmental  
Hazard