

This fact sheet answers the most frequently asked health questions (FAQs) about *n*-hexane. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's 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:** *n*-Hexane is mixed with solvents for a number of uses. Inhaling *n*-hexane causes nerve damage and paralysis of the arms and legs. Some people abuse products containing *n*-hexane by inhaling it to get "high." This substance has been found in at least 60 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

### What is *n*-hexane?

(Pronounced ěn hěk' sĕn)

*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.

Pure *n*-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.

### What happens to *n*-hexane when it enters the environment?

- n*-Hexane enters the environment during its manufacture and use.

- It evaporates very easily into the air where it is broken down in a few days.
- It dissolves only slightly in water.
- Most of *n*-hexane spilled in water will float on the surface where it evaporates into the air.
- If *n*-hexane is spilled on the ground, most of it will evaporate before it can soak into the soil.
- n*-Hexane is not concentrated by plants, fish, or animals.

### How might I be exposed to *n*-hexane?

- You are most likely to be exposed to *n*-hexane by breathing in air contaminated with it.
- You may be exposed if you use products containing it at work.
- Since it is in gasoline, nearly everyone is exposed to very small amounts of *n*-hexane in the air.
- Exposure can occur at home if you use products containing *n*-hexane without proper ventilation.

### How can *n*-hexane affect my health?

The only people known to have been affected by exposure to *n*-hexane used it at work. Breathing large amounts caused numbness in the feet and hands, followed by muscle

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weakness in the feet and lower legs. Continued exposure led to paralysis of the arms and legs. If removed from the exposure, the workers recovered in 6 months to a year.

In laboratory studies, animals exposed to high levels of *n*-hexane in air had signs of nerve damage. Some animals also had lung damage. In other studies, rats exposed to very high levels of *n*-hexane had damage to sperm-forming cells.

### How likely is *n*-hexane to cause cancer?

There is no evidence that *n*-hexane causes cancer in people or animals.

The Department of Health and Human Services (DHHS), International Agency for Research on Cancer (IARC) and the EPA have not classified *n*-hexane for carcinogenicity.

### How can *n*-hexane affect children?

Since most exposure occurs at work, children aren't likely to be exposed to levels of *n*-hexane that cause problems. We don't know if the effects seen in children would be different than those seen in adults.

Sometimes older children inhale or "sniff" household chemicals in an attempt to get "high." This has caused paralysis of the arms and legs of teenagers in the U.S. and Europe.

### How can families reduce the risk of exposure to *n*-hexane?

- Teach your children and teenagers the dangers of inhaling products that contain *n*-hexane.
- Keep products containing *n*-hexane (quick-drying glues and cements) out of the reach of children.

- Maintain proper ventilation when using these products.
- Never store household chemicals in containers, such as old soda bottles, that children might find attractive.

### Is there a medical test to show whether I've been exposed to *n*-hexane?

If you have been exposed to harmful amounts of *n*-hexane, the amount of one of its breakdown products will probably be increased in your urine. Your doctor can send a sample to a specialized laboratory. This test can only detect *n*-hexane exposure that occurred within 2 to 3 days of testing.

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

The EPA requires that spills or accidental releases of 5,000 pounds or more of *n*-hexane be reported to the EPA.

The National Institute of Occupational Safety and Health (NIOSH) recommends exposure to no more than 50 parts per million (ppm) in workplace air. The Occupational Health and Safety Administration (OSHA) has set a permissible exposure limit of 500 ppm for *n*-hexane in workplace air.

### References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for *n*-hexane. 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, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, 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.

