



Cyclohexane

General Information

Key Points

- colourless flammable liquid which quickly evaporates producing a colourless vapour
- can be released into the environment from cigarette smoke, natural sources such as volcanic emissions, and from petroleum based fuels
- mainly used in the production of nylon
- present in household products including solvents and adhesives
- general public may be exposed by breathing in air or consuming food/water contaminated with cyclohexane
- exposure can also occur from use of domestic products which contain cyclohexane
- inhalation can cause headaches, dizziness, drowsiness, incoordination and euphoria
- ingestion may cause stomach upset
- dermal exposure may cause irritation, drying and cracking may occur after repeated or prolonged contact
- eye contact may cause pain, twitching, watering, light sensitivity and potentially swelling of the eyelids

Public Health Questions

What is cyclohexane?

Cyclohexane is a colourless, flammable liquid which quickly evaporates when exposed to air producing a colourless vapour. Cyclohexane occurs naturally in petroleum crude oil, volcanic gases and is present in cigarette smoke.

What is cyclohexane used for?

Cyclohexane is predominantly used in the manufacture of nylon. It is also used as a solvent for lacquers, paint and varnish removers and in the manufacture of fuel for camp stoves. It can be found in household products such as adhesives, solvents, paints and varnishes.

How does cyclohexane get into the environment?

Cyclohexane can enter the environment from natural sources such as volcanic emissions, petroleum based fuels (e.g. vapours) and tobacco smoke. It can also be released into the environment from sites where petroleum products are refined, stored, and used. Cyclohexane is also present in exhaust gases from motor vehicles.

How might I be exposed to cyclohexane?

Exposure to very low levels of cyclohexane may occur following inhalation of air, or consumption of food/water contaminated with cyclohexane. Cigarette smoke is a potential source of exposure to cyclohexane. Exposure can also occur when people use domestic products that contain cyclohexane; however these sources are unlikely to cause adverse health effects if used correctly.

Exposure to cyclohexane may also occur in an occupational setting. However, safe limits are enforced to protect the employees; such levels are below those that are thought to cause harmful effects.

If I am exposed to cyclohexane how might it affect my health?

The presence of cyclohexane in the environment does not always lead to exposure. In order for it to cause any adverse health effects you must come into contact with it. You may be exposed by breathing or drinking the substance, or by skin contact. Following exposure to any chemical, the adverse health effects you may encounter depend on several factors, including the amount to which you are exposed (dose), the way you are exposed, the duration of exposure, the form of the chemical and if you were exposed to any other chemicals.

Breathing in large amounts of cyclohexane vapours can cause headaches, dizziness, drowsiness, incoordination and euphoria. Ingestion of cyclohexane may cause stomach upset. These effects are not likely to occur at levels of cyclohexane that are normally found in the environment.

Spillages of cyclohexane onto the skin may cause irritation. Prolonged or repeated skin contact may cause drying and cracking of the skin. There may also be transient pain with redness of the skin, blistering and burns. Eye contact can cause pain to the eyes, twitching, watering, light sensitivity and potentially swelling of the eyelids.

Can cyclohexane cause cancer?

Cyclohexane has not been assessed by the International Agency for Research on Cancer (IARC) for its ability to cause cancer in humans. Cyclohexane is not thought to be a cancer causing chemical.

Does cyclohexane affect pregnancy or the unborn child?

There is inadequate data available to assess the effects of cyclohexane on the unborn child. Exposure to amounts of cyclohexane that do not harm the mother, are not likely to harm the unborn child.

How might cyclohexane affect children?

Children exposed to cyclohexane are expected to show the same symptoms as adults. Cyclohexane containing products stored at home should be stored in an appropriate container and kept out the reach of children.

What should I do if I am exposed to cyclohexane?

Low level exposure from the correct use of products that contain cyclohexane would not be expected to cause any adverse health effects.

Please see below for advice following accidental exposure to cyclohexane.

You should remove yourself from the source of exposure.

If you have ingested cyclohexane seek medical advice. Do **not** make yourself sick.

If you have inhaled cyclohexane you should seek medical advice.

If you have got cyclohexane on your skin, remove soiled clothing (not above the head), wash the affected area with lukewarm water and soap for at least 10 – 15 minutes and seek medical advice.

If you have got cyclohexane in your eyes, remove contact lenses, irrigate the affected eye with lukewarm water for at least 10 – 15 minutes and seek medical advice.

Additional sources of information

NHS Choices - Poisoning <http://www.nhs.uk/Conditions/Poisoning/Pages/Introduction.aspx>

UKTIS. Best Use of Medicines in Pregnancy <http://www.medicinesinpregnancy.org/>

This information contained in this document from the PHE Centre for Radiation, Chemical and Environmental Hazards is correct at the time of its publication.

First published: May 2017

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