



Carbon disulphide

General Information

Key Points

- also known as carbon bisulphide and carbon sulphide
- highly flammable, colourless liquid with a rotten egg type odour
- released into the environment at very low levels from natural sources including soils, marshes, volcanoes and forest and grass fires
- it is also released into the environment from industries that produce or use it
- exposure is most likely to occur in occupational settings
- inhalation can cause coughing, wheezing and breathlessness
- ingestion may cause stomach upset
- skin contact causes peeling, irritation and redness
- in severe cases exposure to via inhalation, ingestion or skin contact can cause headache, nervousness, drowsiness, coma and fitting
- eye exposure may cause severe immediate irritation
- possible reproductive toxin

Public Health Questions

What is carbon disulphide?

Carbon disulphide is a highly flammable, colourless liquid with a rotten egg type odour. Other names for carbon disulphide are carbon bisulphide and carbon sulphide.

What is carbon disulphide used for?

The majority of carbon disulphide produced is used to make viscose fibres (used in textiles) and cellophane film. It is also used to produce rubber, other chemicals and is a useful solvent. In the past, carbon disulphide was used as a fumigant on stored grain.

How does carbon disulphide get into the environment?

The majority of carbon disulphide released into the environment is from industrial sources where it is produced or used. Small amounts are released from natural sources including soils, marshes, volcanoes and forest and grass fires.

How might I be exposed to carbon disulphide?

Exposure to carbon disulphide is most likely to occur in an occupational setting where it is produced or used in manufacturing processes. However, safe limits are enforced to protect the employees; such levels are below those that are thought to cause harmful effects. Exposure may also occur from cigarette smoke.

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

The presence of carbon disulphide 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 to carbon disulphide by breathing or drinking it, 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 carbon disulphide vapour for short periods of time can cause dizziness, headache and tiredness. In severe cases stomach upset, drowsiness, restlessness, confusion, hallucinations, headache, breathing difficulties and chest pain can occur. Breathing in carbon disulphide vapours for long periods of time can cause permanent nervous system damage including speech disturbances, muscle stiffness, memory loss, hearing loss and depression.

Ingestion of carbon disulphide can result in stomach upset, breathing difficulties, fainting, collapse and coma.

Skin contact with carbon disulphide can cause irritation. High concentrations can cause skin burns and blistering. Carbon disulphide can also be absorbed through the skin, which can result in symptoms similar to those seen after inhalation.

Carbon disulphide may be irritating to the eyes.

Can carbon disulphide cause cancer?

Carbon disulphide has not been evaluated or classified by the International Agency for Research on Cancer (IARC) for its ability to cause cancer.

Does carbon disulphide affect pregnancy or the unborn child?

There is limited evidence from exposures to workers to suggest that carbon disulphide may be toxic to the reproductive system and the unborn child.

Information on exposure to chemicals during pregnancy can be found at the following website: <http://www.medicinesinpregnancy.org/About-Us/>

How might carbon disulphide affect children?

Children exposed to carbon disulphide would be expected to show the same symptoms as adults.

What should I do if I am exposed to carbon disulphide?

It is very unlikely that the general population will be exposed to a level of carbon disulphide high enough to cause adverse health effects. However, if you have any health concerns regarding exposure to carbon disulphide seek guidance from your GP or contact NHS 111

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

For queries relating to this document, please contact: generaltox@phe.gov.uk

© Crown copyright 2017, www.gov.uk/phe

Re-use of Crown copyright material (excluding logos) is allowed under the terms of the Open Government Licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3/ for terms and conditions.