



Sodium Dichromate

General Information

Key Points

- also known as sodium bichromate, bichromate of soda and sodium dichromate (VI)
- red to orange crystalline solid
- it is used as an intermediate in the production of other chromium compounds and in the past was used in wood preservatives
- general public may be exposure to very low levels of sodium dichromate as a contaminant in air or water
- toxic via inhalation, ingestion skin and dermal contact
- inhalation can cause cough, chest pains, runny nose, sore throat and swelling and irritation of the voice box (laryngitis); in severe cases lung damage can occur
- ingestion can cause corrosive damage to the digestive tract causing stomach upset, bloody diarrhoea and vomiting of blood
- in severe cases sodium dichromate can cause kidney failure, liver damage, fitting and coma; these symptoms may be delayed for up to 24 hours after the exposure
- skin contact with sodium dichromate can cause skin irritation, ulceration and burns
- eye exposure may cause pain, twitching of the eyelid, tearing, swelling of the eye and sensitivity to light
- sodium dichromate can cause cancer in humans

Public Health Questions

What is sodium dichromate?

Sodium dichromate is a red to orange crystalline solid. It is a member of a chemical group known as chromium (VI) compounds. Other names for sodium dichromate include sodium bichromate, bichromate of soda and sodium dichromate (VI).

What is sodium dichromate used for?

Sodium dichromate is mainly used as a chemical intermediate in the production of other chromium compounds. It is also used in the production of dyes, as a bleaching agent and a corrosion inhibitor. In the past sodium dichromate was used in wood preservatives.

How does sodium dichromate get into the environment?

Sodium dichromate may be released into the environment during its production and use.

How might I be exposed to sodium dichromate?

The general public may be exposure to very low levels of sodium dichromate as a contaminant in air or water. Exposure to sodium dichromate is more likely to occur in the workplace. However, safe limits are enforced to protect employees. Such levels are below those that are thought to cause harmful effects.

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

The presence of sodium dichromate 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 sodium dichromate 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 sodium dichromate dust can cause cough, chest pains, runny nose, sore throat and swelling and irritation of the voice box (laryngitis). In severe cases lung damage can occur.

Ingestion of sodium dichromate can result in corrosive damage to the digestive tract causing stomach upset, bloody diarrhoea and vomiting of blood. In severe cases sodium dichromate may be absorbed into the body following ingestion, causing kidney failure, liver damage, fitting and coma. These symptoms may be delayed for up to 24 hours after the exposure.

Skin contact with sodium dichromate can cause skin irritation, ulceration, burns and allergic contact dermatitis (rash caused by the skin reacting to a substance it comes into contact

with). Eye exposure may cause pain, twitching of the eyelid, tearing, swelling of the eye and sensitivity to light.

Can sodium dichromate cause cancer?

There is sufficient evidence from studies of chromium exposed workers that chromium (VI) compounds including sodium dichromate cause lung cancer. Therefore, the International Agency for Research on Cancer (IARC) has classified sodium dichromate as causing cancer in humans.

Does sodium dichromate affect pregnancy or the unborn child?

Some animal studies show that exposure to chromium (VI) compounds can have an effect on fertility and development. However studies in humans have given inconsistent results. Therefore it is not possible to conclude whether or not sodium dichromate affects fertility or 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 sodium dichromate affect children?

Children exposed to sodium dichromate would be expected to display similar effects to those seen in exposed adults.

Are certain groups more vulnerable to the harmful effects of sodium dichromate?

Individuals who are sensitised to chromium (VI) compounds may develop an allergic response (e.g. asthma like symptoms and allergic contact dermatitis) when they are exposed to sodium dichromate.

What should I do if I am exposed to sodium dichromate?

It is very unlikely that the general population will be exposed to a level of sodium dichromate high enough to cause adverse health effects. However, if you have any health concerns regarding exposure to sodium dichromate 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>

NHS Choices – How do I deal with minor burns? <http://www.nhs.uk/chq/Pages/1047.aspx>

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

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