



Sulphur Mustard (Mustard Gas)

General Information

Key Points

- sulphur mustard is an oily liquid at room temperature
- it readily forms a vapour that is heavier than air
- it may have an odour of leeks, mustard or garlic
- sulphur mustard is a chemical warfare agent that was first used during World War I
- the production, use or storage of sulphur mustard is prohibited under the Chemical Weapons Convention
- skin contact with sulphur mustard vapour or liquid causes redness and blisters
- inhalation of sulphur mustard vapour causes coughing and hoarseness
- eye contact may lead to irritation and burns to the eyes
- sulphur mustard can cause lung cancer in humans

Public Health Questions

What is sulphur mustard?

Sulphur mustard is an oily liquid at room temperature. It readily forms a vapour that is heavier than air. Pure sulphur mustard is colourless and does not have an odour. When it is mixed with other chemicals it is a yellow-brown oily liquid with an odour of garlic, leeks or mustard.

What is sulphur mustard used for?

Sulphur mustard is a chemical warfare agent and its production, use and storage is prohibited under the Chemical Weapons Convention (entered into force in 1997). It was first used as a chemical warfare agent during World War I.

How might I be exposed to sulphur mustard?

Sulphur mustard readily forms a vapour following its release, the lungs skin and eyes are most likely to be exposed. Sulphur mustard can rapidly penetrate clothing and can damage the skin underneath.

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

You may be exposed by breathing it in, or by skin and eye contact. Following exposure to any chemical, the adverse health effects that you may encounter depend on several factors, including the amount to which you are exposed (dose), the way in which you are exposed, the duration of exposure, the form of the chemical and if you were exposed to any other chemicals.

Skin contact with sulphur mustard liquid or vapour causes redness and blisters. The effects on the skin may be delayed for several hours. It can also affect the eyes causing tearing, irritation, burning, redness and swelling of the eyelids.

Inhalation of sulphur mustard vapour causes hoarseness, cough and pain on coughing. In severe cases fluid may build up on the lungs, a condition known as pulmonary oedema (pronounced "ed-eem-a").

Most individuals who suffer from mild short-term symptoms recover completely. However, some severely affected individuals may develop eye, skin and breathing problems which take some time to clear.

Can sulphur mustard cause cancer?

The International Agency for Research on Cancer (IARC) classified sulphur mustard as being carcinogenic to humans. Studies in workers in sulphur mustard production and World War I veterans have reported an increased risk of lung cancer.

Does sulphur mustard affect pregnancy or the unborn child?

There are inadequate data available on the reproductive and developmental effects of sulphur mustard. Therefore, it is not possible to draw any definitive conclusions.

How might sulphur mustard affect children?

Children will be affected by sulphur mustard in the same way as adults. However, the effects including burns to the eyes and skin may be more severe in children. Blisters on the skin may also develop sooner in children.

What should I do if I am exposed to sulphur mustard?

It is very unlikely that the general population will be exposed to sulphur mustard.

If exposure does occur seek medical attention immediately.

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

If you have got sulphur mustard in your eyes, remove contact lenses, irrigate the affected eye with lukewarm water for at least 10 – 15 minutes.

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.

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