Aluminium

General information

Key Points

- Toxic by ingestion, inhalation and eye exposure.
- Chemical classification: highly flammable
- Inhalation of aluminium dust may cause irritation and metal fume fever: symptoms include cough, sore throat, tightening of the chest, headache, fever
- Ingestion of aluminium (dust or fragments) causes nausea, vomiting and diarrhoea
- Eye contact with aluminium dust causes irritation. Aluminium fragments are generally non-irritating

Prepared by S Bull
CRCE HQ, HPA
2010
Version 1

Background

Aluminium is an odourless, lightweight, silvery-white metal and is the third most abundant metal in the earths crust. It is not found as a free metal in the environment but bound to other elements such as oxygen, silicon or fluorine that are commonly found in soil, minerals and rocks.

Aluminium has a wide range of uses. It is used in materials for constructing buildings, packaging and containers for food and drinks, foil, vehicle body panels, engine and aircraft components and cooking utensils. Aluminium is also used in consumer products such as antacids, anti-ulcer drugs, antiperspirants and cosmetics and is present in food as a preservative.

Although aluminium occurs naturally in the environment, higher levels may occur due to mining, refining and processing of aluminium ore and from various industries. Small amounts of aluminium can also be released from coal burning power stations and incinerators. Nearly all food, water and air contain small amounts of aluminium.

Due to the widespread use of aluminium and its presence in the environment, exposure can occur by eating or drinking food and water, breathing air, or from contact with soil and aluminium-based products.

If exposed to aluminium the harmful effects that may occur depend on the way and the amount to which people are exposed.

Occupational exposure from working in factories and warehouses where aluminium is produced or welding may increase exposure and the risk of harmful effects.. However, safe levels are enforced in the workplace to protect workers.

Breathing air containing aluminium dust may cause irritation and metal fume fever, which is characterised by symptoms such as fever, headache and fatigue. Ingestion of aluminium is usually not harmful but may cause stomach upset with diarrhoea if large quantities are eaten.

Children exposed to aluminium are expected to show similar effects to adults. There is little information on whether exposure to aluminium during pregnancy causes harm to the unborn child. Aluminium is present in breast milk but only a small amount will pass to the infant.

Little information is available regarding whether aluminium causes cancer in humans. Research suggests that it is not thought to cancer in animals.

Frequently Asked Questions

What is aluminium?

Aluminium is an odourless, lightweight, silvery-white metal and is the third most abundant metal in the earths crust

What is aluminium used for?

Aluminium has a wide range of uses. It is used in materials for constructing buildings, packaging and containers for food and drinks, foil, vehicle body panels, engine and aircraft components and cooking utensils. Aluminium is also used in consumer products such as antacids, anti-ulcer drugs, antiperspirants and cosmetics and is present in food as a preservative.

How does aluminium get into the environment?

Although aluminium occurs naturally in the environment, higher levels may occur due to mining, refining and processing of aluminium ore and from various industries. Small amounts of aluminium can also be released from coal burning power stations and incinerators. Nearly all food, water and air contain small amounts of aluminium.

How will I be exposed to aluminium?

Due to the widespread use of aluminium and its presence in the environment, exposure can occur by eating or drinking food and water, breathing air, or from contact with soil and aluminium-based products.

Occupational exposure from working in factories and warehouses where aluminium is produced or welding may increase exposure. However, safe levels are enforced in the workplace to protect workers.

If there is aluminium in the environment will I have any adverse health effects?

The presence of aluminium in the environment does not always lead to exposure. Clearly, 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 air containing aluminium may cause irritation and metal fume fever, which is characterised by symptoms such as fever, headache and fatigue. Ingestion of aluminium is usually not harmful but may cause stomach upset with diarrhoea if large quantities are eaten.

Can aluminium cause cancer?

Little information is available regarding whether aluminium causes cancer in humans. Data from animals studies have shown that it is not thought to cause cancer in animals.

Does aluminium affect children or damage the unborn child?

Children exposed to aluminium are not expected to show greater sensitivity compared to adults. There is little information whether exposure to aluminium during pregnancy causes harm to the unborn child. Aluminium is present in breast milk but only a small amount will pass to the infant.

What should I do if I am exposed to aluminium?

You should remove yourself from the source of exposure.

If you have got aluminium on your skin, remove soiled clothing, wash the affected area with lukewarm water and soap for at least 10-15 minutes and seek medical advice.

If you have got aluminium in your eyes remove contact lenses if necessary, wash the affected area with lukewarm water for at least 10 – 15 minutes and seek medical advice.

If you have inhaled or ingested aluminium seek medical advice.

This document will be reviewed not later than 3 years or sooner if substantive evidence becomes available.