



25.44 Working With Aluminium – Key Health Facts

Introduction

For healthy individuals, everyday exposure to aluminium from food, water, and consumer products is considered safe. However, excessive or prolonged exposure—primarily through occupational exposure may pose some health risks.



Occupational exposures may cause:

Respiratory Irritation

Inhaling aluminium dust or fumes can cause immediate but short-lived dryness of the throat, coughing, and chest tightness.



Occupational Lung Diseases

Long-term, heavy inhalation of microscopic aluminium particles can lead to chronic respiratory issues, including **Aluminium Pneumoconiosis** (a build-up of particles in the lung) or asthma-like conditions often referred to as "pot room asthma" in smelter environments.



Metal Fume Fever

A flu-like illness that causes fatigue, fever, chills, and muscle aches. It typically peaks a few hours after exposure to hot fumes and resolves within 24-48 hours without lasting damage.

There is some evidence to suggest that repeated or chronic exposure to metal fumes can lead to serious, long-term health problems.



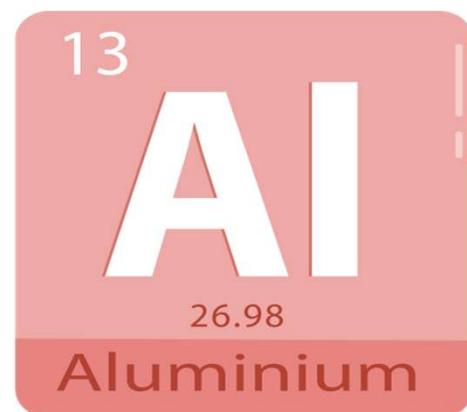
Welding Fume Exposure

All welding fumes are classified as Group 1 carcinogens, meaning that they may cause cancer. In addition to metal fumes, significant levels of ozone may also be produced.



Neurological Concerns

While general daily exposure is safe for healthy individuals, heavy and prolonged occupational over-exposure can lead to an accumulation of aluminium in the body, which poses risks to neurological health and kidney function.



Workplace Exposure Limits for Aluminium

In the UK, the Workplace Exposure Limit (WEL) for Aluminium metal (inhalable dust) is:

10 mg·m⁻³

as an 8-hour Time Weighted Average (TWA). However, for Aluminium welding fumes, the limit is generally treated as:

5 mg·m⁻³ TWA

Workplace Controls

Your employer should assess and control workplace health risks, using engineering controls (e.g., enclosure or extraction) where appropriate.



Where residual risk remains, personal and respiratory protective equipment (e.g., gloves / masks / respirators) may help reduce exposure.

Health Surveillance

Where there is a residual risk of exposure after controls have been implemented, then your employer should consider undertaking Health Surveillance, such as skin and respiratory assessments. Checks designed to ensure that controls are working and identify health effects at an early stage.