

# Know your hazard:

# Lead

## What is lead?

Elemental lead is a soft and yet dense, silver-grey metal that is highly malleable. Inorganic lead and lead compounds are used extensively throughout industry. Industrial processes may generate lead dust, fumes, or vapours, which are hazardous to health.



## Where is lead used?

Lead is utilised in metal production, metal fabrication and related applications, such as:







Working with metallic lead and alloys containing lead



Recovering and recycling lead from scrap and waste



Painting of building and spray-painting of vehicles

# Sources of exposure to lead

Workers are exposed to lead during the production and processing of elemental lead and its alloys. They can be affected by:



Inhaling dust and fumes from the production of elemental lead and alloys.



Welding, grinding, cutting, drilling, or polishing of alloys that contain lead.



Inhaling metal particles and metal oxides created during "hot work" processes\*.



Handling or application of powered or liquid chemicals which contain lead.

## Harmful effects of lead

Exposure to lead in the workplace can occur through inhalation and ingestion. The health effects may vary from acute to chronic:

### **Acute effects:**



**Abdominal cramps** and constipation





Muscle pain



### Chronic exposure can cause:



**High blood** 



nerve damage

Kidney, liver, and



Impaired early fetal





#### pressure lung diseases neurodevelopment Lead and inorganic lead compounds are classified as probably carcinogenic to humans (Group 2A) by

the IARC\*\* and as confirmed animal carcinogens by the ACGIH\*\*.

## How can one protect against it?

In order to reduce exposure and risks to workers, you can:



Conduct risk assessment to compare exposure levels with limits.

Implement engineering controls such as local exhaust ventilation (LEV).





**Get Respiratory Protective** Equipment (RPE).

## What RPE does 3M recommend for protection against lead?

3M has a range of RPE that can help reduce your exposure to dusts, mists, metal fume, as well as gases and vapours commonly encountered in metal production and fabrication.

### Type of Respirators

### Recommended 3M Respiratory Protective Equipment\*\*\*



**Powered** 





3M™ Versaflo™ Powered Air Purifying Respirator Starter Kit, TR-619E



3M™ Versaflo" M-407 Helmet



3M™ Versaflo™ Particulate Filter, TR-6710F for TR-600 PAPR



Filter TR-6580E for

TR-600 PAPR



**Air Respirator** 







3M™ Versaflo™ Vortex Cooling Assembly V-100



3M™ Versaflo™ M-407 Helmet



OR



3M™ Versaflo™ S-533 Hood



Reusable Respirator



3M™ Secure Click™ Full Facepiece Reusable Respirator FF-800 or Half Facepiece HF-800 Series







3M™ Secure Click™ Particulate Filter P100 with Nuisance Level Organic Vapor Relief D3097



Disposable Respirator



3M™ Particulate Respirator 8511, N95



3M™ Aura™ Disposable Respirator 9332A+, FFP3/P3







3M™ Adflo™ PAPR Assembly G5VC ADF (45-1101-30VC)

- \*Hot work processes include cutting, grinding, and even polishing metals, which can create particles of metal and metal oxides that can be inhaled. \*\*The International Agency for Research on Cancer (IARC) and the American Conference of Governmental Industrial Hygienists (ACGIH) are organizations
- \*\*\*This is only recommendation for minimum PPE required. Each work application must be evaluated by a competent person as required by local law and regulation for the hazard and risk before selection of right PPE. Workplace rules and regulations must take precedent, if more stringent.



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