

Know your hazard:

Chromium

What is chromium?

Chromium metal has been used across the ages in jewellery, ornamental works, car, body trims, and is used to electroplate other steels due to its corrosion-resistant properties.

Chromium is an important component in:

Stainless steel



Non-ferrous metal alloys



Where is chromium used?

Chromium is utilised in different metal production and fabrication and related industrial and commercial product applications, such as:



Welding, cutting, grinding, and casting of stainless steels & other alloys

Smelting of copper, zinc,

and ferrochromium ores

Specialty paints for

aerospace and marine



Chromium plating



Pigments, dyes, preservatives, ceramics and portland cement



Automotive body repair

Sources of exposure to chromium

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



Inhaling dust and fumes from chromium alloy production and fabrication activities.



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



Exposure during chromium plating or surface coating.

Harmful effects of chromium

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

Irritation in:



Ulcers and

septum holes





Chronic exposure can cause:

Skin

Occupational

lung disease**

Lung

cancer



Severe effects include:



Allergic impairment dermatitis

Foetal development





issues

Eve

damage

Insight: Hexavalent chromium compounds are classified as a Group 1 - Carcinogenic to humans by IARC[^] and as an A1 - Confirmed Human Carcinogen by 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 chromium?

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 **Air Respirator**



3M™ Versaflo™ Powered Air Purifying Respirator Heavy Industry Ready Kit TR-600 HIK





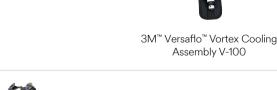


3M™ Versaflo™ High Efficiency Filter, TR-6710N/37358(AAD) for TR-600 PAPR

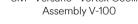


3M™ Versaflo™ TR-6590N Multi-Gas/HE Cartridge for TR-600 PAPR























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







3M™ Particulate

Respirator 8511, N95



3M™ Particulate Respirator for Welding 8515, N95

*Hot work processes include cutting, grinding, and even polishing metals, which can create particles of metal and metal oxides that can be inhaled.

Occupational lung diseases may include hypersensitivity pneumonitis and pneumoconiosis. ^The International Agency for Research on Cancer (IARC) and ^^the American Conference of Governmental Industrial Hygienists (ACGIH) are organizations involved in cancer research and occupational health. *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.



REQUEST A DEMO

your work environment, scan the QR code



READ MORE For more information on the

for the technical bulletin.



EXPLORE MORE

To discover variety of respiratory protection equipment from 3M, for your