

## 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:



Occupational

lung disease\*\*

Skin inflammation and ulcers







Severe effects include:







Eve

damage

issues

cancer Insight: Hexavalent chromium compounds are classified as a Group 1 - Carcinogenic to humans by IARC<sup>^</sup> and as an A1 - Confirmed Human Carcinogen by ACGIH<sup>^^</sup>

Lung

### 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

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

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



**Powered Air Respirator** 





Starter Kit. TR-619E



3M™ Versaflo™ M-407 Helmet



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

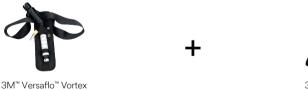


3M™ Versaflo™ ABE2K1HgP

Filter TR-6580E for

TR-600 PAPR







M-407 Helmet



Reusable Respirator

Supplied

**Air Respirator** 





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

Cooling Assembly V-100



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







3M™ Particulate Respirator 8511, N95



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





3M™ Speedglas™ G5-03 Pro Air Welding Helmet with 3M<sup>™</sup> Adflo<sup>™</sup> 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.

\*\*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



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respiratory protection equipment from 3M, for your