COMETAL

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Chromium

Description

Chromium is a chemical element with atomic number Z = 24 which is located in group 6 of the periodic table. Its name "chrome" (derived from the Greek ‘chroma’, colour) came about from the different colours presented by its compounds.

The usual method of production of chromium is as follows: first the mineral is heated together with the addition of calcium carbonate and sodium carbonate in the presence of air; the chromium is then oxidized to the hexavalent form of chromate. Subsequently, through a reaction with sulphuric acid, the chromate is transformed into oxide. Finally, once the oxide is produced, it is reduced to a chromium metal by an aluminothermic process.

Native chromium is not found naturally. Its most abundant mineral is chromite.

Properties

Physical Properties		Electronic Properties	
Name	Chromium	Valence	2, 3, 6
Atomic Number	24	Electro negativity	1.6
Symbol	Cr	Covalent Radius	1,27
Atomic Weight	51.996	Ionic Radius	0.69
Density (g/ml)	7.19	Atomic Radius	1.27
Boiling Point ºC	2665	Atomic Structure	$[Ar]3d^5 4s^1$
Melting Point ºC	1875	Ionization Potential (eV)	6.8

Chromium is silvery white, hard and brittle. However, it is relatively soft and ductile when very pure. Its main uses are for the manufacture of corrosion resistant alloys as stainless steels, with high strength and heat resistance, and as a coating for galvanized steels.

Chromium is neither classified as a hazardous substance by EU Regulations and neither is it classified as a hazardous good for transportation

Uses

- Manufacturing stainless steels and other anticorrosion alloys.
- Chrome coatings.
- Dyes.
- Catalysts.

COMETAL, S.A.
• C/José Lázaro Galdiano 4
• 28036 Madrid (Spain)
• Tel: +34 91 4585980
• Fax: +34 91 4585987

• cometal@cometalsa.com
• www.cometalsa.com
• VAT Nr ESA28117026