



## Chromium carbide introduction

Chromium carbide, chemical formula  $\text{Cr}_3\text{C}_2$ , the relative atomic weight of 180.02, theoretical carbon content 13.344%, as a gray powder, rhombic crystal structure,  $a = 2.821$ ,  $b = 5.52$ ,  $c = 11.46$ , insoluble in water, acids and bases. Theoretical density of  $6.68 \text{ g / cm}^3$ , melting point:  $1890 \text{ }^\circ\text{C}$ , boiling point:  $3800 \text{ }^\circ\text{C}$ . Microhardness  $2200\text{-}2700 \text{ kg / mm}^2$ , thermal expansion coefficient  $10.3 \times 10^{-6} / \text{K}$ . It is a high-temperature environment ( $1000 \sim 1100 \text{ }^\circ\text{C}$ ) has good wear resistance, corrosion, oxidation of refractory inorganic materials, and is widely used as a metal surface protection and thermal spray material wear, also used as other grain refining agent carbide wear and corrosion resistance elements.

In  $\text{Cr}_3\text{C}_2$ -based cermet at high temperatures extremely excellent oxidation resistance, thermal exposure at  $982 \text{ }^\circ\text{C}$  after five hours, the surface is only slightly dimmed; and under the same conditions, 18-8 stainless steel has significant damage, WC-6Co alloy is completely oxidized.

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