

## **\*Chromium Carbide Nanoparticles (Cr<sub>3</sub>C<sub>2</sub>, 30-120nm, 99.7+%, Gray, Orthorhombic Crystal Structure)**

**Stock#:** US2081

Please click [here](#) for price information.

### **Details:**

Chromium carbide Nanopowder (Cr<sub>3</sub>C<sub>2</sub>)

Purity: 99.7%

Color: Gray

Crystal Structure: Orthorhombic

SSA: 50m<sup>2</sup>/g

APS: 30-120 nm

Bulk Density: 2.75 g/cm<sup>3</sup>

Density: 6.68 g/cm<sup>3</sup>

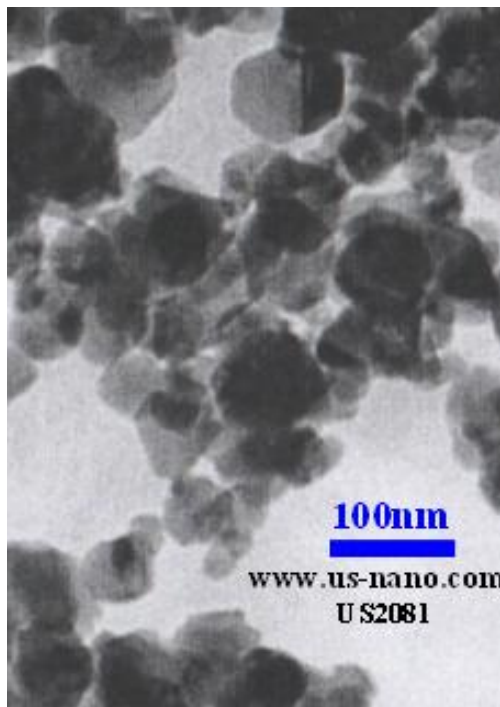
Melting Point: 1895°C

CAS number: 12012-35-0

Boiling point 3800 °C

The thermal expansion coefficient of  $10.3 \times 10^{-6}$  / K

**UN3178**



### **Properties and Applications:**

Chromium carbide (Cr<sub>3</sub>C<sub>2</sub>) is an extremely hard refractory ceramic material. It is usually processed by sintering. It has the appearance of a gray powder with orthorhombic crystal structure. The orthorhombic Cr<sub>3</sub>C<sub>2</sub> occurs extremely rarely as mineral tongbaite. It is highly corrosion-resistant, and does not oxidize even at high temperature (1000-1100 °C). The thermal expansion coefficient of chromium carbide is almost equal to that of steel, reducing the mechanical stress buildup at the layer boundary. Precipitation of chromium carbide at the grain boundaries, depleting the grain edges of chromium, is the cause of intergranular corrosion of stainless steel near the welds. Chromium carbide is used as a thermal spray material for protecting the underlying metal surface, and as an additive to corrosion-resistant and wear-resistant materials. It is used in coatings of bearings, seals, orifices, and valve seals, and as a fine-crystal phase in other sintered carbides, where, like the vanadium carbide, it inhibits growth of submicrometre grains during pressing and sintering.

[MSDS](#)  
[X-Ray](#)  
[Particle Distribution](#)

### **Certificate of Analysis:**

### **US Research Nanomaterials, Inc.**

3302 Twig Leaf Lane, Houston, TX 77084, USA

**Phone:** (Sales) 832-460-3661; (Shipping) 832-359-7887 **Fax:** 281-492-8628

**E-mail:** [Service@us-nano.com](mailto:Service@us-nano.com); [Tech@us-nano.com](mailto:Tech@us-nano.com)

T.C	F.C	O	N	Al	Fe	Na	Ca	K	Si
>13.08%	<0.15%	<0.05%	<0.001%	<0.004%	<0.02%	<0.002%	<0.003%	<0.004%	<0.003%

### **US Research Nanomaterials, Inc.**

3302 Twig Leaf Lane, Houston, TX 77084, USA

**Phone:** (Sales) 832-460-3661; (Shipping) 832-359-7887 **Fax:** 281-492-8628

**E-mail:** [Service@us-nano.com](mailto:Service@us-nano.com); [Tech@us-nano.com](mailto:Tech@us-nano.com)