



Material Safety Data Sheet 91/155 EC

Product: Ferro Silicon Chrome

5. Fire-Fighting measures:

Not applicable

6. Accidental release measures:

Spillage can be reclaimed for use. If spillage is contaminated and material can not be used, it should be collected in approved and sound containers for disposal. The disposal site environment may require monitoring to conform to legislation.

7. Handling and Storage:

FerroSiliconChrome is a heavy and dense material. Protective equipment should be worn when handling the material via hard hats, gloves, respirator (for dust), safety glasses, safety shoes or boots.

Materials should not be stored in proximity to incompatible substances. If not protected from surrounding, a slight tarnishing may occur to the surface of the material, which is non-toxic and will in no way detract from the properties or qualities of the material

It is important to note, however, that the material must be free of all moisture prior to use in melting furnaces.

Caution:

Under certain conditions of heat and high humidity, flammable acetylene gas may be released. It is therefore important to store the material in open areas or in well ventilated containers, especially where the likelihood of water ingress is high. If the material is to be stored in sealed containers, such containers should be dry and preferable purged with inert gas such as Nitrogen or Carbon Dioxide prior to sealing.

8. Exposure controls/ personal protection:

Handling of the material may give rise to dust and the inhalation of dust is the main route of exposure.

Single Exposure Effects:

Inhalation: Irritant effects only to membranes of nose, throat and lungs
Eyes: Mechanical irritation of conjunctivae, which may cause red eyes and tears.
Skin contact: Mechanical irritation of skin. In rare cases, sensitive persons may develop allergic dermatitis.

Repeated exposure:

Skin: Exacerbation of previous irritant or allergic symptoms.
Inhalation: The inhalation of dust may cause benign pneumoconiosis and aggravate previous lung conditions such as asthma or fibrosis. When it is not possible to eliminate exposure to dust to below recommended TLV levels by effective exhaust ventilation systems, persons should be provided with necessary



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personal protective equipment to reduce any hazard due to exposure.
This equipment should include approved respirators (face masks) designed to protect the individual against dusts and particular matter in the air.
Industrial hygienists should be consulted regarding respirator specifications.
See also section 5 above.

9. Physical and chemical properties:

Appearance: Metallic silvery grey lumps to coarse powder
Odour: None
Volatility: Non volatile
Solubility: Insoluble
Melting Point: > 1550 °C – 1650 °C
Specific Gravity: 4,8 – 5,0 %
Bulk density: 2,7 – 3,0 t/m³

10. Stability and reactivity:

Stability: Material is stable
Incompatibility: Avoid contact with strong acids and oxidizing agents. Reaction with acids will generate flammable hydrogen gas
Hazardous decomposition products: Not applicable

11. Toxicological Information:

Material is non toxic.

12. Ecological Information:

At ambient temperatures, material is harmless to the environment

13. Disposal Information:

See section 4 above

14. Transport information:

Normal transportation means included open bulk or container

15. Regulatory Information:

Local regulations vary from place to place and the user is earnestly requested to ascertain which legislation is relevant. Information on the individual components of the material might be appropriate. All values are expressed in mg/m²



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<u>Element</u>	<u>CAS No.</u>			
Chromium (Cr)	7440-47-3	0,5	mg/m ³ *	
Iron Oxide, Fume (Fe ₂ O ₃)	1309-37-1	5	mg/m ³ *	
		10	mg/m ³ **	
Carbon, as Graphite (C)	7440-44-0	10	mg/m ³ *	+
		4	mg/m ³ *	++
Silicon (Si)	7440-21-3	10	mg/m ³ *	+
		4	mg/m ³ *	++
Titanium Dioxide (TiO ₂)	13463-67-7	10	mg/m ³ *	+
		4	mg/m ³ *	++
Manganese, Fume (Mn)	7439-96-5	1	mg/m ³ *	
		3	mg/m ³ **	
Nickel, Organic Compounds (Ni)	91-20-3	1	mg/m ³ *	
		3	mg/m ³ **	
Reference:	HSE guidance note EH 40 recent issue			
*	Long term exposure limit (8 hours TMA)			
**	Short term exposure limit (15 min. ref period)			
+	Total inhalable dust			
++	Respirable dust			
Chromium must be considered as carcinogen under QSHA (29 CFR 1910.1200)				
IARC has determined a relationship between exposure and cancer in humans although the responsible chromium compounds were not specified. ACFHH has concluded that certain water soluble hexavalent compounds are carcinogen to humans but that chromium metal, chromium (Cr II) and chromic (Cr III) compounds are not. This is consistent with NIOSH, which has listed a group of water soluble compounds as being specifically non carcinogenic. Furthermore, overexposure to hexavalent chromium compounds may cause ulcers, nasal septum perforations, allergic conditions and possible kidney damage.				



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<p>16. Others information:</p> <p>Precautionary Note:</p> <p>While the material is stable and inert at ambient temperatures, melting and refining operations lead to effluent fumes. Suitable precautions should be taken to minimise exposure of personnel to such fumes. Furthermore, disposal sites for slags, dusts or slurries arising from these operations may require monitoring in order to comply with local legislation.</p>
<p>Disclaimer:</p> <p>The information contained in this MSDS is applicable only to FerroSilconChrome as defined herein and does not relate to the use of this material in any further processing . The information contained in this document represents the opinion of suitable qualified experts in the field an it is believed that these options are current with the date of issue of the document.</p> <p>However, since the use of this information and the use of Ferro Silicon Chrome is not within the control of TK Metallurgie, we absolve from all responsibilities, which may result from the unsafe use of FeSiCr. It is solely the users responsibility to ensure safe use of this product.</p>