

Ferro Chromium Silicon

26	55.845	14	28.0855	24	51.9961
Fe	⁵ D ₄	Si	³ P ₀	Cr	⁷ S ₃
	1,83		1,90		1,66
Iron		Silicon		Chromium	
7,874	7,9024	2,33	8,1517	7,14	6,7665
1538	2861	1414	2900	1907	2671
(m) 126	BCC	(v) 111	cubic	(m) 128	BCC
[Ar] 3d ⁶ 4s ²		[Ne] 3s ² 3p ²		[Ar] 3d ⁵ 4s ¹	
+2,3		+2,4,-4		+2,3,6	

Description

Ferro Chromium Silicon is produced by carbothermic reduction in submerged arc furnaces of chromite ore to which silica or quartzite has been added during processing, as well as limestone in order to reduce activity of Silicon in the slag. It can also be obtained by using High Carbon Ferro Chrome and quartz as raw materials. Its CAS number is 11114-46-8.

The Chromium content of this Ferro Alloy can typically range between 34% and 42%, and its Silicon content between 38% and 45%.

The largest manufacturer, with more than 90% of the world's production, is Kazakhstan as well as some minor productions in Brazil, Russia and Zimbabwe.

Properties

PHYSICAL STATE	Solid
COLOUR	Metallic gray
ODOUR	Odourless
SPECIFIC GRAVITY	3.75 g/cm ³

Ferro Chromium Silicon is stable under normal conditions, but its contact with moisture, acids or strong alkalis should be avoided because it releases flammable and very toxic gases (arsine and phosphine).

With regard to its preparation, Ferro Chromium Silicon is not classified as hazardous according to the relevant European legislation. With Silicon content between 30% and 90%, it is considered as a hazardous good for transit. Class 4.3, Packing Group III, UN Number 1408, hazard identification number 462.

Uses

The most important use of Ferro Chromium Silicon is as a raw material in the manufacturing of Low Carbon Ferro Chrome and, to a much lesser extent, in the production of steels in which the simultaneous addition of chromium and silicon is required.

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