
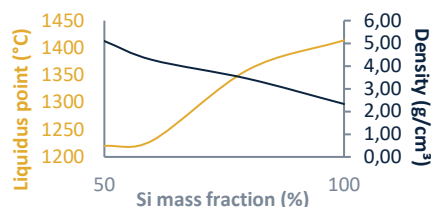


Ferrosilicon (FeSi75)

	Price range in 2020 for Ferrosilicon	863,00 €/t – 1198,00 €/t 984,00 \$/t – 1465,00 \$/t
	Formula	FeSi
	CAS no.	8049-17-0
	EC no.	617-088-7
	Description	Ferrosilicon (FeSi) is an alloy of silicon and iron. The production is based on quartz, iron ore, coal, coke and biocarbon. The alloy is mainly used as a deoxidant and an alloying element in the production of steel and cast iron. FeSi increases strength, hardness, temperateness and corrosion resistance in steel.

Physical Properties

General	The melting point and density of ferrosilicon depends on its silicon content	
Abrasion	good resistance to abrasion	
Corrosion	good resistance to corrosion	
Gravity	high specific gravity	
Magnetism	high magnetism	
Density _{FeSi75}	3,20 g/cm ³	0,116 lb/in ³
Melting point _{FeSi75}	1200-1350 °C	2192-2462 °F
sp. el. Resistance _{FeSi75}	15.000 Ωm	590.551 Ωin
Hardness _{FeSi75}	930-960 HV	



Source: Volkert, G. & Frank, K.-D.: Die Metallurgie der Ferrolegierungen

Actually requested materials based on metalshub transactions

Material name		Size [mm]	Composition, as percentages by mass					Packaging	Pallet
			Si1)	Al	C	P	S		
FeSi75 (fines)	Min.	2	75	—	—	—	—	1 mt big bags	one way pallet
	Max.	10	—	1,5	0,1	0,05	0,04		
FeSi75 (bulk)	Min.	10	75	—	—	—	—	1 mt big bags	euro pallet
	Max.	50	—	1,5	0,1	0,03	0,0025		

The above data are based on real data from the metalshub platform. These characteristics are the most common ones in metalshub transactions. We will update the data regularly. [12,2020]

The DIN standard of Ferrosilicon (DIN 17560)

Material name		Composition, as percentages by mass							
		Si ¹⁾	Al	C	Ca	N	P	S	Ti
FeSi75Al1	Min.	74	—	—	—	—	—	—	—
	Max.	77	1	-0,1	0,2	0,025	0,05	0,04	0,1
FeSi75Al1,5	Min.	74	1	—	—	—	—	—	—
	Max.	77	1,5	-0,1	0,2	0,025	0,05	0,04	0,1
FeSi75Al2	Min.	74	1,5	—	—	—	—	—	—
	Max.	77	2	-0,2	0,2	0,025	0,05	0,04	0,3
FeSi90Al2,5	Min.	87	1	—	—	—	—	—	—
	Max.	95	2,5	-0,1	—	—	0,04	0,04	—
FeSi90Al1	Min.	87	—	—	—	—	—	—	—
	Max.	95	1	-0,1	—	—	0,04	0,04	—

() Bracketed values are for guidance only

1) The silicon content shall not vary by more than 2% within a consignment

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the products traded on metalshub.

[Click here for the ASTM standard specification for Ferrosilicon \(ASTM A100\)](#)

Interesting facts

FeSi
75

While the FeSi 45 and FeSi 90 grades used to be used in the steel industry, FeSi 75 has now largely become established. This is not only due to the economic reason that the silicon unit in ferrosilicon is 75% cheaper than in other types, but also because of technical advantages. The ferrosilicon 75% is specifically so heavy that it is not held back by the slag when it is added. However, the silicon content is so high that the heat of dissolution of the silicon compensates for the temperature loss that occurs through the addition of cold ferro-silicon alloys.


Low Al Ferrosilicon compared to regular ferrosilicon will lower the content of aluminium inclusions in the final steel. In high carbon steels use of low Al FeSi will assist in the prevention of nozzle blockage during continuous casting. Reduced amounts of aluminium inclusions will help to avoid surface defects, particularly relevant to mirror finish stainless steel. For the production of tire cord, in which inclusion control is also important, manufacturer recommends the use of High Purity Ferrosilicon.

LOW
AL
FeSi

Applications

- Can be used to reduce metals from their oxides and to deoxidize steel and other ferrous alloys
- It is used in the manufacture of other ferroalloys
- In the manufacture of silicon, corrosion resistant and high temperature resistant ferrous silicon alloys, and silicon steel for electromotors and transformer cores
- In the manufacture of cast iron, ferrosilicon is used for inoculation of the iron to accelerate graphitization
- In the manufacture of permalloys like magnesium ferrosilicon, used for modification of melted malleable iron.
- It is used as an additive to cast irons for controlling the initial content of silicon
- It is used in steel melting, casting, mineral processing and melting rod industry
- It is used for heavy media separation and atomization
- Furthermore it is used for production of semiconductor pure silicon in electric industry and silicon copper in chemistry industry

Risk and Safety Statements

Symbols (GHS)			
Hazard Statements		H261	In contact with water releases flammable gas
		H302	Harmful if swallowed
		H312	Harmful in contact with skin
		H331	Toxic if inhaled
Precautionary Statements	Prevention	P231	Handle under inert gas
		P232	Protect from moisture
		P261	Avoid breathing dust/fume/gas/mist/vapours/spray
		P280	Wear protective gloves/protective clothing/eye protection/face protection
	Response	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
	Disposal	P405	Store locked up
ADR / RID		1408	
TSCA		Yes	
Hazard Class		4.3	Dangerous when wet
Packing Group		III	Low danger

Source: ECHA (European Chemicals Agency)

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