

FERROSILICON 72 (FeSi72)

Technical Specification & Supply Guide

Grade FeSi72	Sizes 10-50 / 20-70 / 50-100mm	Packing 1 MT Jumbo Bag	Documents COA / MTC / MSDS
-----------------	-----------------------------------	---------------------------	-------------------------------

Product Overview

Ferrosilicon 72 (FeSi72) is an iron-silicon ferroalloy containing approximately 72% silicon. It is mainly used in steelmaking and foundry operations as a source of silicon for deoxidation, alloy adjustment and melt chemistry control.

Compared with lower-silicon ferrosilicon grades, FeSi72 introduces more silicon per unit of alloy while remaining a commonly used commercial grade for metallurgical production. The actual batch chemistry should be checked against the purchase specification and COA rather than relying only on the nominal grade name.

ZhenAn supplies FeSi72 in screened lump sizes for furnace, ladle and other metallurgical charging systems. Chemical composition, particle size, packing and inspection requirements can be confirmed before shipment.



FeSi72 Quick Specification

Item	Specification
Product	Ferrosilicon 72 / FeSi72
Silicon	72% Min
Aluminium	2.0% Max
Carbon	0.20% Max
Phosphorus	0.04% Max
Sulfur	0.02% Max
Form	Screened Ferro Silicon Lump
Available Sizes	10-50mm / 20-70mm / 50-100mm
Size Yield	90% Min within agreed range
Packing	1 MT Jumbo Bag
Documents	COA / MTC / MSDS
Trade Terms	FOB / CFR / CIF

Note: Final chemical composition and particle-size acceptance should follow the agreed purchase specification and batch inspection results.

Technical Specification

For metallurgical use, the silicon level is only one part of the FeSi72 specification. Aluminium, carbon, phosphorus and sulfur should also be checked because impurity limits can affect suitability for different steel and foundry processes.

Element	FeSi72 Specification	Why It Is Checked
Si	72% Min	Main silicon-bearing element
Al	2.0% Max	Important impurity limit for many metallurgical applications
C	0.20% Max	Checked where carbon pickup is restricted
P	0.04% Max	Controlled impurity
S	0.02% Max	Controlled impurity

Why Batch COA Matters

FeSi72 is a grade designation; the actual chemistry varies by batch. The batch COA should therefore be checked against the purchase specification rather than against the grade name alone.

- Actual Si result
- Aluminium level
- C, P and S limits
- Batch identification
- Test method where specifically required
- Compliance with the agreed purchase specification

For repeat orders, sending a previous acceptable COA can be more useful than sending only the grade name because it gives a direct reference for chemistry already used in production.

FeSi72 Particle Sizes

10-50mm FeSi72

A controlled medium lump range suitable for many regular furnace and ladle charging systems. It limits oversized pieces while avoiding the handling characteristics associated with very fine material.

20-70mm FeSi72

A wider medium-size range that can be selected where the charging system accepts a broader lump distribution.

50-100mm FeSi72

A coarser lump grade for charging systems that can handle larger pieces.

Fines and Oversize Control

The nominal size alone does not fully describe a shipment. Where fines or oversized material affects charging, the RFQ should also define the minimum size yield, acceptable fines percentage, acceptable oversize and inspection method when required.

Current page reference: 90% minimum within the agreed size range.



Applications

Steelmaking

FeSi72 is used as a silicon-bearing ferroalloy during steel production. Its main functions include silicon addition, deoxidation, steel chemistry adjustment and alloy composition control. Because the actual silicon content of the batch affects the amount of silicon introduced into the melt, addition calculations should use the COA value.

Foundry

FeSi72 can be used as a silicon source for cast iron and other foundry melts where the process requires silicon adjustment. The required grade and addition amount depend on the initial melt chemistry, target silicon content, furnace practice and silicon recovery.

Technical boundary: Standard FeSi72 should not automatically be described as a specialized nodularizing alloy or inoculant unless the supplied chemistry is specifically designed for that function.

Metallurgical Alloy Adjustment

FeSi72 is also suitable where a process requires a controlled silicon-bearing ferroalloy addition. Grade selection should follow the required silicon concentration and impurity limits rather than assuming that the highest silicon grade is always the better choice.

FeSi72 Addition Reference

Simplified engineering estimate:

$$\text{Required FeSi72} = \text{Metal Weight} \times \text{Required Si Increase} \div (\text{FeSi Si Fraction} \times \text{Silicon Recovery})$$

Example: if 1,000 kg of metal needs a 0.20% Si increase, the FeSi72 contains 72% Si, and the plant assumes 80% silicon recovery:

$$\text{FeSi72} \approx 1,000 \times 0.002 \div (0.72 \times 0.80) \approx 3.47 \text{ kg}$$

Important: This is only a calculation reference. Actual addition practice should use the plant's own furnace conditions, slag practice, addition timing and historical silicon recovery.

How Ferrosilicon Is Produced

Industrial ferrosilicon production is based on the reduction of silica-bearing raw materials using carbon reductants together with an iron source. Technical literature describes the process through silica raw materials, carbon reductants, high-temperature reduction reactions, furnace operation and post-tapping steps such as refining and casting.

Silica Raw Material → Carbon Reductant + Iron Source → **Submerged Arc Furnace Smelting** → Reduction & Alloy Formation → Tapping → Refining / Composition Adjustment → Casting & Solidification → Crushing → **Screening** → **Chemical & Size Inspection** → **Packing**

Industry-reference note: The production sequence above is general ferrosilicon technology context and should not be presented as a ZhenAn-specific process claim unless internally verified.

Quality Control

Control Point	What Is Checked
Chemical Analysis	Check Si, Al, C, P and S against the agreed specification.
Particle Size Inspection	Verify nominal size, size yield, fines and oversized material.
Packing Inspection	Check bag condition, quantity, net weight, marking and loading condition.
Batch Documentation	Prepare the agreed quality and shipment documents for the batch.

Shipment Documents

Document	Purpose
COA	Confirms batch chemical analysis
MTC	Material test information
MSDS	Handling and safety information
Packing List	Quantity and packing details
Loading Photos	Documents packing and container loading condition
Other Documents	According to agreed order requirements



Packing & Export Delivery

Standard Packing: 1 MT Jumbo Bag

FeSi72 should be kept dry during storage and transportation. Repeated dropping, rough handling or unnecessary rehandling should be minimized because brittle ferrosilicon lumps can break and generate additional fines.

Information Needed for an Accurate Quote

- Grade: FeSi72
- Required chemical specification
- Particle size: 10-50mm / 20-70mm / 50-100mm
- Fines or oversize limit
- Order quantity
- Packing requirement

- Destination port
- Trade term: FOB / CFR / CIF
- Required inspection documents
- Previous COA, if available

FeSi72 RFQ Checklist

RFQ Field	Requirement
Product	Ferrosilicon 72
Si	≥72%
Al	≤2.0%
C	≤0.20%
P	≤0.04%
S	≤0.02%
Size	10-50mm / 20-70mm / 50-100mm
Size Yield	≥90% within agreed range
Packing	1 MT Jumbo Bag
Quantity	_____ MT
Destination	_____ Port
Trade Term	FOB / CFR / CIF
Documents	COA / MTC / MSDS

Contact

GET FeSi72 COA & PRICE

ZHEN AN INTERNATIONAL CO., LIMITED

Email: sale@zanewmetal.com

Website: china-ferro-alloy.com

Technical References

Tangstad, M. Ferrosilicon and Silicon Technology, Handbook of Ferroalloys (2013).
https://www.researchgate.net/publication/288170285_Ferrosilicon_and_Silicon_Technology

Refining of Ferro-Silicon, National Metallurgical Laboratory. <https://eprints.nmlindia.org/5791/1/12.01-12.5.PDF>

Ferrosilicon Production and Operation / INFACON technical material. <https://www.slideshare.net/slideshow/ferrosilicon-production-and-operation/131663441>

Ferrosilicon Supply Chain Portfolio 2025. <https://ferrosilicon.co/wp-content/uploads/2025/12/Ferrosilicon-Supply-Chain-Portfolio-2025.pdf>

Reference use: These sources are used for industry background and document structure only. Supplier-specific specifications from external sources are not treated as ZhenAn product specifications.