


Ferromolybdenum (FeMo)

	Price range in 2020 for Ferromolybdenum	15,46 €/kg Mo – 23,48 €/kg Mo 17,80 \$/kg Mo – 25,79 \$/kg Mo
	Formula	FeMo
	CAS no.	12382-30-8
	EC no.	602-952-8
	Description	Ferromolybdenum is an alloy formed by combining iron and molybdenum with a molybdenum content of 60-75%. It is an extremely versatile alloy used primarily in high-strength low alloys and stainless steels. It has numerous beneficial properties and can be used even in cast irons, some high-speed tool steels, and superalloy applications. Adding ferromolybdenum to a material helps to improve weldability, corrosion and wear resistance as well to increase ferrite strength.

Physical Properties

General	The melting point and density of ferromolybdenum depends on its silicon content			
Abrasion	good resistance to abrasion			
Corrosion	good resistance to corrosion			
Magnetism	high magnetism			
	FeMo 70		FeMo 62	
Density _{FeSi75}	9,3 g/cm ³	0,336 lb/in ³	9,0 g/cm ³	0.325 lb/in ³
Melting point _{FeSi75}	1900-2000 °C	3452-3632 °F	1800-1900 °C	3272-3452 °F

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

CO₂ Emissions

Upstream emission factors	Scope 2 *	Scope 3 **
	-	8,5 tCO ₂ / t _{FeMo}

Source: worldsteel association

Actually requested materials based on [metalsub](#) transactions

Material name	Size [mm]	Composition, as percentages by mass							Packaging	Pallet
		Mo	Si	Cu	C	S	P			
FeMo 65-75	Min.	10	65	-	-	-	-	-	1 mt big bags	one way pallet
	Max.	50	75	1,5	0,5	0,1	0,1	0,05		

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

The DIN standard of Ferromolybdenum (DIN 17561)

Material name		Composition, as percentages by mass					
		Mo1)	C	Cu	P	S	Si
FeMo60S0,10	Min.	58	-	-	-	-	-
	Max.	65	0,5	1,0	0,10	0,10	2,0
FeMo60S0,15	Min.	58	--	-	-	-	-
	Max.	65	0,5	1,0	0,10	0,15	2,0
FeMo70S0,10	Min.	65	-	-	-	-	-
	Max.	75	0,10	0,50	0,10	0,10	1,5
FeMo70S0,15	Min.	65	-	-	-	-	-
	Max.	75	0,10	0,50	0,10	0,15	1,5

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

*Scope 2 emissions (according to greenhouse gas protocol):

Upstream emissions or credits related to procurement/delivery of electricity and steam from site. Upstream emissions of exported by-product gas considering the potential savings in electricity generation.

**Scope 3 emissions (according to greenhouse gas protocol):

Other upstream emissions or credits related to procurement / delivery of pre-processed materials / by-products from site.

[Click here for the ASTM standard specification for Ferromolybdenum \(ASTM A132\)](#)

Interesting facts

FeMo as Additive

Ferro Molybdenum is an additive to the production process of amorphous metals and will impart several desirable properties into the new alloy. One of the primary benefits of adding Ferro Molybdenum to an alloy is its hardening properties that makes steel extremely strong and at the same time weldable, as Molybdenum is one of the top 5 melting-point metals. Additionally, the adding of Ferro Molybdenum to an alloy can increase corrosion resistance. Properties of Ferro Molybdenum make it suitable for a variety of protective films over other metals.

The countries that currently rank first in the manufacturing of Ferro Molybdenum are China, USA and Chile, with the three countries taking a share of almost 80% of the world's molybdenum ore production.



Applications

- The largest application area of ferromolybdenum is in the manufacture of ferrous alloys. Based on the range of molybdenum content, ferromolybdenum can be applied in the manufacture of machine tools and equipment, military hardware, refinery tubing, load-bearing parts and rotary drills.
- Ferromolybdenum is also used in cars, trucks, locomotives and ships. Ferromolybdenum is added to stainless and heat-resisting steels that are used in synthetic fuel and chemical plants, heat exchangers, power generators, oil-refining equipment, pumps, turbine tubing, ship propellers, plastics and inside acid storage containers.
- Tool steels that contain a higher percentage of ferromolybdenum are used in high-speed machining parts, drill bits, screwdrivers, dies, cold work tools, chisels, heavy castings, rolls, cylinder blocks, ball and rolling mills, piston rings and large drill bits.

Risk and Safety Statements

Symbols (GHS)			
Hazard Statements		H315	Causes skin irritation
		H320	Causes eye irritation
		H335	May cause respiratory irritation
Precautionary Statements	Prevention	P201	Obtain special instructions before use.
		P202	Do not handle until all safety precautions have been read and understood.
		P281	Use personal protective equipment as required.
	Response	P264 + P353	Wash hands and face thoroughly with soap and water after handling prior to eating or drinking.
		P308 + P313	IF exposed or concerned: Get medical advice/attention.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	Storage	-	-
Disposal	P501	Dispose of contents/container in accordance with local/regional/national/ international regulations	

Source: Selerant GmbH

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.