

## Molybdenum Powder

**Application:** Used to produce various types of molybdenum components and alloys.

**Features:** High purity and wide range of particle sizes.

**Appearance:** Uniform metallic grey color.



Molybdenum Powder

### Grade and Application

Name	Grade	Fsss particle size (μm)	Apparent density (g/cm <sup>3</sup> )	Application
Pure molybdenum powder	FMo-1	1.5-2.5	--	Cemet and molybdenum penetrator
		2.5-4.5	--	Pure molybdenum bar, rod, plate, molybdenum alloy, and electronic components
Lanthanum-doped molybdenum powder	FM*L	2.5-3.5	0.9-1.4	Lanthanum-doped bardrod, and plate
Yttrium-doped molybdenum powder	FM*Y	2.5-3.5	0.9-1.3	Yttrium-doped molybdenum bar
Molybdenum alloy powder	FTZM	3.0-4.0	1.1-1.4	TZM alloy
Molybdenum powder	FMo-2	2.0-5.0	--	Alloy additive
		60-200mesh	--	Welding materials

Remarks: Symbol "\*" means the dopant content of rare earth elements. "W/ D/ Z/ G" separately stand for "micro content doping/ low content doping / middle content doping/ high content doping."

### Chemical Composition

Grade	FMo-1	FM*L	FM*Y	FTZM	FMo-2	Analysis (Equipment)	
Main content (wt%, ≥)	99.95	99.95	99.95	99.95	99.90		
Impurities (ppm, ≤)	Fe	50	50	50	50	300	ICP
	Ni	30	30	30	30	50	
	Cr	30	30	30	30	--	
	Al	15	15	15	15	50	
	Si	20	20	20	20	100	
	Cu	10	10	10	10	10	
	Ca	15	15	15	15	40	
	Mn	10	10	10	10	--	
	Mg	20	20	20	20	50	
	W	200	200	200	200	--	
	Pb	5	5	5	5	5	
	Bi	5	5	5	5	5	
	Sn	5	5	5	5	5	
	Cd	10	10	10	10	10	
	Sb	10	10	10	10	10	
	Ti	10	--	--	--	--	
	P	10	10	10	10	50	
C	50	50	50	--	100	C/S analyzer	
N	150	150	150	150	200	O/N analyzer	
O		3000	3000	1200	2500		
Doping content (ppm)	--	La: 200-10000	Y: 200-10000	Ti: 4000-5500 Zr: 600-1200 C: 300-1200	--	ICP, C is analyzed by C/S analyzer.	
Standard	GB/T3461	ZGCC's specification			GB/T3461		

Remarks: The main content is calculated by deducting the impurities content ( gas element is excepted ).

Customer can choose the chemical composition according to the requirements and application. We can decide the details after discussion.

**Particle Size and Oxygen Content**

Fsss particle size (µm)	Oxygen content (ppm, ≤)
	FMo-1
≤2.0	2000
2.0-2.5	1500
2.5-3.0	1200
3.0-5.5	1000

**Packaging:**

Products are packaged in iron drums or carton drums with vacuum sealed plastic bags.

**Instruction for Storage:**

Products should be stored in a dry, ventilated, acid & alkali free environment to prevent them from moisture, oxidation and corrosion of active chemicals. The storage period should not exceed three months. They should be used in half a month after unpacking.

## Molybdenum Powder for Sputtering Targets

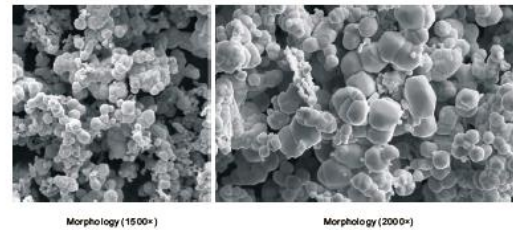
**Features:** High purity and wide range of particle sizes

**Appearance:** Uniform grey color

**Physical property**

Description	Grade	Type	Fsss particle size (µm)	Apparent density (g/cm <sup>3</sup> )	Laser particle distribution (µm)		
					D10	D50	D90
Molybdenum powder	FMo-1	BCF-A	3.5-4.5	1.0-1.5	≤8.5	≤18.5	≤30.5
Molybdenum powder	FMo-1	BCF-B	3.8-4.5	1.2-1.5	≤8.5	≤18.5	≤30.5
Molybdenum powder	FMo-1	BCF-C	3.0-3.5	1.2-1.5	≤6.5	≤15.5	≤20.5

**Morphology**



## Chemical Composition

Grade		FMo-1	Analysis (equipment)	
Main content (wt%, ≥)		99.97		
Impurities (ppm, ≤)	Fe	20	ICP	
	Ni	10		
	Cr	10		
	Al	10		
	Si	10		
	Cu	5		
	Ca	10		
	Mn	10		
	Mg	5		
	W	100		
	Pb	1		
	Bi	1		
	Sn	1		
	Cd	1		
	Sb	10		
	Ti	10		
	K	70		AAS
	Na	10		
P	10	Colorimetry		
C	40	C/S analyzer		
O	600	O/N analyzer		
N	60			
Standard		ZGCC's specification		
Remarks: The main content is calculated by deducting the impurities content ( gas element is excepted ).				

Customer can choose the chemical composition and physical properties according to the requirements and application. We can decide the details after discussion.

### Packaging :

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### Instruction for Storage:

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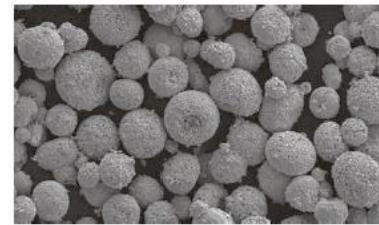
## Molybdenum Powder for Spraying

**Process:** The product is produced by a process of spraying and drying, sintering, crushing and sieving.

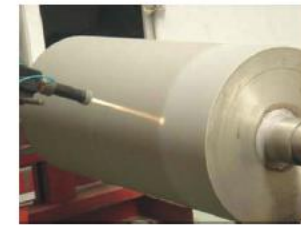
**Application:** It is used to make coatings on the surface by plasma spray and HVOF to protect or repair damaged surfaces to prolong service life. It can be also used as flux in the welding rod.

**Features:** Molybdenum powder has a high melting point, excellent flow ability, high adhesion strength with the iron-based substrate, excellent corrosion resistance, and sliding resistance.

**Appearance:** Uniform grey color



Morphology of spray molybdenum powder (200x)



The demonstration of HVOF spraying

### Grade and Application

Name	Grade	Size	Main content (% ≥)	Application
Molybdenum powder for spraying	FMP-1	140-325mesh	99.5	Used as flux in the special welding rod
		170-325mesh	99.5	Used for surface coating of mechanical parts such as automotive gears, piston rings, etc.
	FMP-2	160-325mesh	99.0	

## Chemical Composition

Grade		FMP-1	FMP-2	Analysis (equipment)
Main content (wt%, ≥)		99.5	99.0	
Impurities (ppm, ≤)	Fe	2000	3000	ICP
	Ni	100	3000	
	P	50	100	Colorimetry
	C	50	100	C/S analyzer
	S	50	100	
	O	1500	1500	O/N analyzer
Standard		ZGCC's specification		
Remarks: The main content is calculated by deducting the impurities content ( gas element is excepted ).				

Customer can choose the chemical composition according to the requirements and application. We can decide the details after discussion.

## Physical Property

Name	Grade	Size (mesh)	Apparent density ( g/cm <sup>3</sup> )	Flow velocity ( s/50g )
Molybdenum powder for spraying	FMP-1	140-325mesh	≥2.0	≤50
		170-325mesh	≥2.0	≤50
	FMP-2	160-325mesh	≥3.0	≤30
Remarks: we could adjust sieving standard as per customer's specification				

## Packaging:

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## Instruction for Storage:

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