

High Performance Metal Solutions

MOLYBDENUM POWDER METALLURGY PRODUCTS

Number PD-7017 Issue 1-04.03.2010

PURE MOLYBDENUM FOIL F-21-5

Description of Product

Rolled molybdenum foil from 0.001 inches through 0.0049 inches thick produced from pressed and sintered powder metallurgy sheet bar.

Chemical Characteristics¹⁾

(Mass fraction in % [cg/g]; ppm [µg/g])

The chemical composition of the molybdenum powder used for producing sheet bar shall conform to the following limits:

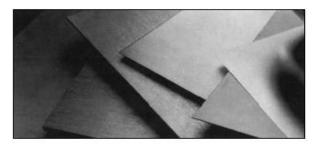
Molybdenum (By Difference)	min.	99.95	%
Mg	max.	0.001	%
Mn	max.	0.001	%
Ni	max.	0.002	%
AI	max.	0.002	%
Cu	max.	0.002	%
Pb	max.	0.002	%
Ti	max.	0.002	%
Са	max.	0.003	%
Si	max.	0.003	%
Sn	max.	0.003	%
Cr	max.	0.005	%
С	max.	0.005	%
Fe	max.	0.005	%

Structure

All foil will be supplied in a stress-relieved condition.

Mechanical Properties

Tensile tests will be conducted at room temperature ($65^{\circ}F - 85^{\circ}F$) using a strain rate of 0.002 to 0.010 in/in/min through 0.6 % offset and 0.02 to 0.05 in/in/min to fracture. Tensile properties will be determined on specimens taken transverse to the final rolling direction of the sheet. Test specimens will be prepared and tested according to ASTM Specification No. E-345. The gage length will be 5 inches for Type B tensiles and 2 inches for Type A tensiles.





1) Information on testing methods is available upon request.



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Tensile properties shall meet the following minimum values:

Thickness (Inches)	Tensile Strength (psi Minimum)	Yield Strength (0.2 % Offset) (psi Minimum)	Elongation (% Minimum)	
0.001 Over 0.001 to 0.002 Over 0.002 to 0.003 Over 0.003 to 0.0049	115,000 115,000 115,000 115,000	95,000 95,000 95,000 95,000	1 2 3	
Dimensional Tolerances				
Thickness Tolerance:				
THICKNESS (INCHES)	TOLERANCE (II	NCHES)		
0.001 Over 0.001 to 0.002 Over 0.002 to 0.003 Over 0.003 to 0.0049	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$			
Width Tolerance:		6		
THICKNESS (INCHES)	UP TO 6 INCHE WIDE (INCHES)		OVER 6 INCHES WIDE (INCHES)	
0.001 to 0.0049	± 0.005		± 0.010	
Length Tolerance	For specified lengths, the tolerance for all sizes is + 0.0625 - 0 inches per foot of length.			
Applicable Widths and Lengths	Minimum width is 0.250 inches. Maximum width is 12 inches. If random lengths are specified, the minimum length supplied will be 10 inches. Maximum length depends on thickness specified. Molybdenum foil shipped as a coil will be on a core with a minimum inside diameter of 3 inches and a minimum coil length of 10 feet.			
Surface Condition	Standard foil will have a uniform finish and be free of surface defects (slivers, cracks, pits and scratches) that cannot be removed with minor conditioning. The surface will be bright (approximately Ra 10 micro inch) and free from contamination. Photo etch quality, available on request, will not require any conditioning and will be suitable for photo etching applications in maximum lengths of 3 feet. Photo etch quality is also available in mirror finish on request.			
Identification	The material will be identified with appropriate specification number, ingot or lot number, and nominal size. Packaging will be marked with the name of the customer and the purchase order number.			



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Hazards identification in Advertising (Directive 67/548/EEC Article 26, Directive 1999/45/EC Article 13 and REGULATION (EC) No 1272/2008 Article 48)

none.

Rejection H.C. Starck must receive written notification of rejected material with the reason for rejection. H.C. Starck reserves the right to inspect rejected material at the customer's plant for claim validation. The material may be returned only after proper authorization.

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High Performance Metal Solutions

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