

Molybdenum wire

PS – PRODUCTSPECIFICATION

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Information about the content

Responsible area:	Plansee SE	Prepared/Updated:	See SAP-DMS
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Molybdenum-wire is used in a wide variety of high temperature applications. Typical applications are the lighting industry, conductor elements and fabric components in furnace construction and special applications.

1 Dimensions and tolerances

Diameter [mm]	Ø-Tolerance [%]	Max. value out of roundness
0,30 - 0,79	± 2,0	within Ø-tolerance
0,80 - 1,49	± 1,5	0,010 mm
1,50 - 3,99	± 1,0	0,025 mm
4,00 - 10,0	± 1,0	0,050 mm

2 Physical and mechanical product properties

Diameter [mm]	Tensile strength [MPa]
0,30 - 0,49	1000 - 1300
0,50 - 0,79	800 - 1200
0,80 - 1,49	750 - 1100
1,50 - 3,99	650 - 1000
4,00 - 10,0	> 600

Elongation: ≥ 10%

Density: ^{a)} 10,20 g/cm³

Non destructive tests : 100 % Eddy current test, split value max. 0,5 %

a) The density in case cannot be determined with sufficient accuracy because of small material diameter. Due to the high degree of deformation during production, it is assumed that the theoretical density (above given value) is achieved.

2.1 Surface condition

Surface: Ø 0,30 - 1,00 mm Electropolished (bright surface)
Ø 0,30 - 10,0 mm Chemically cleaned (metallic dull surface)

3 Chemical composition

Main and Minor Components	Plansee		Standard	EU-Directive
	Content		ASTM B387 (361)	RoHS ^{a)}
Mo	Min. 99.97 % ^{b)}		balance	-
Impurities	Max. Values [µg/g]		Max. Values [µg/g]	Max. Values [µg/g]
	Typical	Guaranteed		
Al	1	10	-	-
Cr	3	20	-	-
Cu	2	20	-	-
Fe	5	20	100	-
K	6	20	-	-
Ni	1	10	50	-
Si	2	20	100	-
W	169	300	-	-
C	13	30	100	-
H	-	10	-	-
N	5	10	20	-
O	6	40	70	-
Cd	1	5	-	100
Hg ^{c)}	-	1	-	1000
Pb	-	5	-	1000
Cr (VI)	-	-	-	1000
Organic Impurities (e.g. PBB, PBDE, PFOS, PFOA)	- ^{**)}	- ^{**)}	-	1000

a) EU-directives 2015/863/EU, 2011/65/EU and 2000/53/EC.

b) Metallic purity without W

c) Initial value

****)** The presence of Cr (VI) and organic impurities can definitely be excluded because of the production process (multiple heat treatments at temperatures above 1000 °C in H₂-atmosphere).

The chemical composition is checked by means of random sampling. The sampling inspection plan, analysis and evaluation methods are determined in the internal instruction PSE-020-WI-003. The application of the measured values for the chemical analysis is defined in PSE-680-WI-001.

Remarks: The specified physical and chemical characteristics are disclosed not regarding measurement accuracy.

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4 Packaging, labelling, storage and certification

4.1 Packaging, labelling and storage

Standard individual packing:

Dimension of standard reels

Spool:	<i>SD300K</i>	<i>SH253K</i>
Outer diameter:	300 mm	253,5 mm
Coil diameter:	180 resp. 210 mm	221,5 mm
Inner diameter:	51 mm	215,0 mm
Total width:	103 mm	37,0 mm
Coil width:	90 mm	30,0 mm
Max. coil weight:	23 kg	2,5 kg

Shipping dimensions

Diameter [mm]	Spool or coil	Fiber drums with cardboard layer	Cardboard	Desiccant, airtight packaging
0,30 - 0,49	SH253K		☒	☒
0,50 - 1,00	SD300K		☒	☒
1,01 - 2,00	STR ^{a)} Ø 300mm ^{*)}		☒	☒
2,01 - 3,50	STR ^{a)} Ø 560mm ^{*)}	☒	☒	
3,51 - 10,0				Special packaging

a) Coils without carrier spools

*) Other form of delivery upon request

Each package will be provided with a label with the following information:

Producer's name:	Plansee
Plansee order number:	
Lot number:	
Material number:	
Material:	Mo
Dimension:	Wire diameter
Surface:	
Quantity:	Total quantity in m or kg
Tensile strength range:	
Elongation range:	
Date:	

The material must be kept in a dry place and protected from mechanical damage. It is best to keep the material in the original packing until used. It is recommended to store the spools vertical.

Special packing: (extra costs will be invoiced)

Special packing should be used if the material is stored under unusual conditions or aggressive atmosphere (e.g. sea air, ...).

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4.2 Inspection documents

Following inspection documents will be supplied upon customer request according to EN 10 204:

Test report 2.2

Plansee confirms with this test report that the delivered product meets the specification and gives details of the material properties according to ongoing production surveillance, not directly related to the particular production batch.

Inspection certificate 3.1 (extra costs will be invoiced)

An inspection officer from Plansee confirms with this inspection certificate that the delivered product meets the specification and gives test results related to the particular production batch.

5 Order instructions

Please quote following information when ordering:

- Product description
- Quality (the number of this specification must be mentioned)
- Diameter
- Material number
- Quantity in m or kg
- Surface
- Required spool
- Required certificate and content in case of a 3.1 inspection certificate
- *For special packing:* Specification of packaging

For further information on our delivery possibilities. please look into our <http://www.plansee.com>

6 Referenced standards

The standards applied for the test methods are listed in the Plansee standard InfoBase and are made available upon request.

Changes to last version

Replacement for	Changes to last version
PS-MPR-102	<ul style="list-style-type: none"> ■ Regular content review conducted by Thomas Friedrich on 16.04.2021 no changes of content ■ New Document numbering key ■ New Document layout ■ Section 2: Description text in view of test parameter removed ■ Section 2: description text in view of using the theoretical material density ■ Section 3: RoHS Directive appellation updated ■ Section 4.2: Description of Test Report / Inspection Certificate eliminated