

Information about the content

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Molybdenum ILQ-wire (Incandescent Lamp Quality) is a Mo-wire doped with La₂O₃, which is used as pre-material for drawing mandrel and support wires for the manufacture of lamps.

1 Dimensions and tolerances

2 Physical and mechanical product properties

Diameter [mm]	Ø Tolerance [%]	Tensile strength [MPa]		
		min.	max.	Typical values
0,30 – 0,39	± 2,0	1200	1550	1375
0,40 – 0,49	± 2,0	1120	1400	1260
0,50 – 0,59	± 2,0	1020	1250	1135
0,60 – 0,79	± 2,0	920	1150	1035
0,80 – 0,99	± 1,5	850	1000	925
1,00 – 1,49	± 1,5	> 850	-	-
1,50 – 3,17	± 1,0	> 750	-	-

Crystallization behaviour with annealing time 15 minutes in hydrogen atmosphere (typical values):

Diameter	Onset temperature for recrystallization	zu 100 % recrystallized
0,30 mm	1100 °C	1600 °C
1,00 mm ^{a)}	950 °C	1200 °C
2,20 mm	1000 °C	1300 °C
3,17 mm	1000 °C	1200 °C

a) Redrawing wire heat treated



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Density: ^{a)} 10,20 g/cm³
Cracks: Eddy current tested

a) The density 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: Electropolished ^{a)} or in chemically cleaned („dull“) quality, annealed, free from oil residues and other contamination.

Wires can also be delivered in black quality (with graphitized surface, for redrawing); diameters in the range of 0,3 mm – 3,17 mm

a) for diameters in the range of 0,3 mm – 1,00 mm



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3 Chemical composition

Main and minor components	Plansee		EU-Directive
	Min. content %		RoHS ^{a)}
Mo	balance		-
La	0,024 – 0,036 %		-
La₂O₃ ^{*)}	0,028 – 0,042 %		-
Impurities	Max. values [µg/g]		Max. values [µg/g]
	Typical	Guaranteed	
Al	1	10	-
Cr	3	20	-
Cu	2	20	-
Fe	5	20	-
K	6	20	-
Ni	1	10	-
Si	2	20	-
W	169	300	-
C	13	30	-
H	-	10	-
N	5	10	-
Cd	1	5	100
Hg ^{b)}	-	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) Initial value

*) La₂O₃ is a calculated 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: each spool is sealed in a polyethylene bag together with a drier agent (electropolished wire)

End packing: cardboard box

Redrawing wires (\varnothing 0,40 – 1,50 mm) are delivered on the standard spool SD300K or on K250/36 and K355/36 respectively; wires with finished ends (electropolished surface and cleaned dull) will be delivered on our standard spool SD300K or on the special spool SH253K respectively.

Spool: ^{a)}	SD300K (Standard spool)	K250/36 (DIN 46399)	K355/36 (DIN 46399)	SH253K ^{c)}
Outer diameter:	300 mm	250 mm	355 mm	253,5 mm
Coil diameter:	180 bzw. 210 mm	160 mm	224 mm	221,5 mm
Inner diameter:	51 mm	36 mm	36 mm	215 mm
Total width:	103 mm	200 mm	200 mm	37 mm
Coil width:	90 mm	160 mm	160 mm	30 mm
Max. wire weight: ^{b)}	23 kg	23 kg	23kg	2,5 kg

a) Wires with diameters > 1,5 mm will be delivered as coils without carrier spools; wire coil with inner diameter approx. 500/560/800 mm

b) We guarantee coil weights in a range of 3 – 23 kg; Larger ring weights (up to 40 kg from \varnothing 1 mm) on request

c) Wires with \varnothing < 0,4 mm will be delivered on the special spool SH253K.

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

Producer's name:	Plansee
Plansee order number:	
Lot number:	
Material number:	
Material:	MoILQ
Dimension:	Wire diameter
Surface:	
Quantity:	Total quantity in kg
Tensile strength:	
Elongation range:	Upon customer request



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Date:	
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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, ...).

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 total quantity in m or kg
- ☒ Required spool
- ☒ Surface quality
- ☒ 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.



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Changes to last version:

Replacement for PSE-610-PS-135 Rev.00

- New responsible persons
- Correction of misprint (La-, La₂O₃-content)



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