

Tungsten "VM"-wire

PS – PRODUCTSPECIFICATION

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Information about the content

Responsible area:	Plansee SE	Prepared/Updated:	See SAP-DMS
		Released:	See SAP-DMS
Valid from:	16-Apr-2021	Controlled:	PSE-020

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Tungsten "VM" wire is Tungsten wire doped with small concentration of Aluminum, Potassium and Silicon. It is most applicable for vacuum metallizing and heating element properties.

1 Dimensions and tolerances

Diameter [mm]	Ø-Tolerance [%]	Max. value out of roundness
1,00 - 1,49	± 1,5	0,010 mm

2 Physical and mechanical product properties

Density: ^{a)} $\geq 19,30 \text{ g/cm}^3$

Cracks: 100 % eddy current tested, split level maximum 2.0%

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: Chemically cleaned (metallic dull surface)
Black (surface with graphite layer)

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3 Chemical composition

Main and minor components	Plansee Content		EU- Directive
			RoHS ^{a)}
W	Balance		-
Al	< 30 µg/g		-
K ^{*)}	30 – 70 µg/g		-
Si	< 30 µg/g		-
Impurities	Max. values [µg/g]		Max. values [µg/g]
	Typical	Guaranteed	
Cr	-	20	-
Cu	-	10	-
Fe	-	30	-
Mo	-	100	-
Ni	-	20	-
C	-	30	-
N ^{**))}	-	10	-
O ^{**))}	-	50	-
Cd	-	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

*) Measured by Inductive Coupled Plasma-Optical Emission Spectroscopy

**) Measured by Heat Extraction

***) 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

Spule:	SD300K
Outer diameter:	300 mm
Coil diameter:	180 resp. 210 mm
Inner diameter:	51 mm
Total width:	103 mm
Coil width:	90 mm
Max. coil weight:	23 kg

Shipping dimensions

Diameter [mm]	Spool or coil	Cardboard	Desiccant, airtight packaging
1,00 - 1,20	SD300K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1,00 - 1,49	STR ^{a)} Ø 300mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

a) Coils without carrier spools, 300 mm inner diameter

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

Producer's name:	Plansee
Plansee order number:	
Lot number:	
Material number:	
Material:	WVM
Dimension:	Wire diameter
Surface:	
Quantity:	Total quantity in m or kg
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
00	<ul style="list-style-type: none"> ■ Section 3: Table 2 chemical composition, header "min. content" to "content" ■ New responsible persons