

Information about the content

Scope:	Plansee SE	Prepared/Updated:	Abenthung Peter
		Released:	Ostheimer Josef
Valid from:	03-Jul-2017	Controlled:	QM

This document is subject to electronic version control – confirm revision status before using.

S-WVMW-rods are made of Tungsten doped with Potassium, Silicon and Aluminum. This material has a high grain stability and density, particularly core density, which has a positive effect on the fracture behavior after process related heat treatment and at high application temperatures. This is achieved by an increase of the onset temperature for recrystallization.

1 Dimensions and tolerances

1.1 Diameter and tolerances

Diameter ^{a)} [mm]	Tolerance [mm]
25,0 - 34,9	± 0,050
35,0 - 39,9	± 0,060
40,0	± 0,20

a) **Roundness:** Values within defined Ø-tolerance

1.2 Production lengths and straightness

Diameter [mm]	Production length [mm]	Straightness/ Meter [mm]
25,0 - 40,0	≥ 300	< 1,50

1.3 Guaranteed length tolerances in case of ordering fixlength

Nominallength [mm]	≥ 6 - 30	> 30 - 120	> 120 - 400	> 400 - 1000	> 1000 - 2000
Lengthtolerance [mm]	± 0,20	± 0,30	± 0,50	± 2,0	± 4,0



Details to our certificates
at www.plansee.com



2 Physical and mechanical product properties

Density:	Ø 25,0 - 30,0 mm:	> 19,15 g/cm ³
	Ø 30,1 - 40,0 mm:	> 19,10 g/cm ³

Hardness: a)	Ø 25,0 - 30,0 mm:	> 420 HV30
	Ø 30,1 - 40,0 mm:	> 400 HV30

Grain size: (ASTM E112):	5,5 and finer
---------------------------------	---------------

a) The actual value quoted in certificates corresponds to the mean-value of a representative control sample.

Heat treatment:	the rods are stress relieve annealed
------------------------	--------------------------------------

Non-destructive tests:	Eddy current test, Ultrasonic test Visual inspection
-------------------------------	---

2.1 Surface condition

Surface:	Centerless ground	
	Ø 25,0 - 30,0 mm:	Ra ≤ 1,0 µm
	Ø 30,1 - 40,0 mm:	Ra ≤ 1,2 µm



Details to our certificates
at www.plansee.com



3 Chemical composition

Main and minor components	Plansee		EU- Directive
	Min./Max. content [µg/g] Typical	Guaranteed	RoHS ^{a)}
W	Balance		-
Al	16	< 30 µg/g	-
K ^{*)}	-	15 – 40 µg/g	-
Si	8	< 30 µg/g	-
Impurities	Max. values [µg/g]		Max. values [µg/g]
	Typical	Guaranteed	
Cr	3	20	-
Cu	1	10	-
Fe	8	30	-
Mo	12	100	-
Ni	2	20	-
C	6	30	-
H	-	5	-
N ^{**)}	1	5	-
O ^{**)}	5	30	-
Cd	1	5	100
Hg ^{b)}	-	1	1000
Pb	1	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.



Details to our certificates
at www.plansee.com



4 Packaging, labelling, storage and certification

4.1 Packaging, labelling and storage

Standard individual packing: rods up to 6 mm diameter will be delivered in bundles. Larger sizes will be packed individually.

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

Producer's name:	Plansee
Plansee order number:	
Lot number:	
Material number:	
Material:	S-WVMW
Dimension:	Rod diameter and length
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.

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.



Details to our certificates
at www.plansee.com



5 Order instructions

Please quote following information when ordering:

- Product description
- Quality (the number of this specification must be mentioned)
- Diameter
- Material number
- Surface condition
- Quantity in m or kg
- 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 PS-MPR-155

- New Document numbering key
- New Document layout
- Section 2: Description text in view of hardness specification
- Section 2: Visual inspection added
- Section 3: RoHS Directive appellation updated
- Section 3: Analysis Methods adapted
- Section 4.2: Description of Test Report / Inspection Certificate eliminated



Details to our certificates
at www.plansee.com

