H.C.Starck

High Performance Metal Solutions

Number PD-7103
Issue 2-12/15/2020

ELECTRON BEAM MELTED MOLYBDENUM FOR GLASS MELTING ELECTRODES AND MEDICAL TECHNOLOGY

Product Description

Two different molybdenum qualities are produced, normal and premium quality. The material is melted from pure molybdenum by electron beam melting and brought into its final shape by forging and machining.

Applications

The material is used in both the glass industry as a glass melting electrode and the medical technology for the production of components for X-ray tubes.

Typical Chemical Composition

Material Molybdenum		Normal Quality (EL)	Premium Quality (LT)
element	dimension		
Mo (balance)	%	min. 99.95	min. 99.97
O	ppm	max. 40	max. 20
C	ppm	max. 30	max. 20
Fe	ppm	max. 40	max. 15
Ni	ppm	max. 15	max. 10
Co	ppm	max. 15	max. 10
Cr	ppm	max. 15	max. 10
Cu	ppm	max. 20	max. 10
Pb	ppm	max. 15	max. 10
Zn	ppm	max. 10	max. 10
Mn	ppm	max. 10	max. 10
W	ppm	max. 300	max. 300
Na	ppm		max. 10
Mg	ppm		max. 10
K	ppm		max. 10
Ca	ppm		max. 20
Cd	ppm		max. 10
Ba	ppm		max. 10
Ti	ppm		max. 10
N	ppm		max. 10
H	ppm		max. 10
S	ppm		max. 20

Microstructure

The material can be offered in forged condition (deformation structure) as well as partially or completely recrystallized (depending on the annealing process). Finished products according to customer drawings or raw products as semi-finished products can be delivered.

Ultrasonic Test

All melted and forged molybdenum rods are inspected by ultrasonic test according to DIN EN 583.

Density

$\rho \geq 10.1$ g/cm³ (both melted and forged)

Dimensions and Tolerances

The material of normal quality can be supplied in the following standard diameters:

32.0 mm (1 ¼“)
50.8 mm (2“)
63.5 mm (2.5“)
76.2 mm (3“)
101.6 mm (4“)
127.0 mm (5“)
152.4 mm (6“)

Tolerances: +/- 0.5 mm in lengths up to 2.5 m. Other diameters are possible according to customer request, up to 200 mm are possible.

Please inquire about the dimensions and tolerances for the premium quality.

Straightness

Maximum deviation 1.5 mm / m.

Threads

Male or female threads can be delivered.

Surface quality

Turned; to customer specification ground or blasted.

Identification

Each glass melting electrode and each component is labeled with the batch number and/or consecutive identification number, depending on customer specifications.

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