

PURE MOLYBDENUM Tube Targets

Description of Product: This specification covers extruded molybdenum tubes produced from pressed and sintered powder metallurgy billet for sputtering applications.

Chemical Characteristics¹⁾ (Mass fraction in %)

Mo (by difference)	min.	99.95	%
Ag	max.	0.0005	%
Al	max.	0.002	%
As	max.	0.0005	%
Ba	max.	0.001	%
C	max.	0.005	%
Ca	max.	0.002	%
Cd	max.	0.001	%
Co	max.	0.003	%
Cr	max.	0.006	%
Cu	max.	0.002	%
Fe	max.	0.006	%
H	max.	0.001	%
K	max.	0.002	%
Mg	max.	0.001	%
Mn	max.	0.001	%
N	max.	0.001	%
Na	max.	0.001	%
Nb	max.	0.001	%
Ni	max.	0.002	%
O	max.	0.005	%
P	max.	0.002	%
Pb	max.	0.001	%
S	max.	0.002	%
Si	max.	0.003	%
Sn	max.	0.001	%
Ta	max.	0.002	%
Ti	max.	0.001	%
W	max.	0.030	%
Zn	max.	0.0005	%
Zr	max.	0.0005	%

Physical Characteristics

Density	min.	10.2	gm/cc
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1) Information on testing methods is available upon request.

Surface and internal Condition

Surface finish per customer specification.

Tubes will be supplied in the heat treated condition.

OD of tube to be free of cracks, or de-laminations as determined by dye penetrant inspection.

Surface to be free of cutting oil, lubricants, makings, etchings or stamp.

Dimensional

Dimensions per customers specification.

Identification

Each tube shall be identified with lot number listed on tag attached to each tube or per customer specification.

Quality Documents

For each lot of tubes a certification will be supplied and will include the following:

- Certification to analysis of chemical of elements listed above
- Certification to dimensional integrity
- Certification to surface finish per customer specification.

Hazards identification in Advertising (Directive 67/548/EEC Article 26, Directive 1999/45/EC Article 13 and REGULATION (EC) No 1272/2008 Article 48)

none.

Packaging

Packaging shall be adequate to prevent damage, during transit and will comply with requirements of country of destination and or customer specifications:

Wooden box constructed from 1-1/2 thick lumber on sides and 1/2" plywood on top and bottom (maximum four tubes per box).

Each tube shall be wrapped in stretch wrap completely covering tube and tucked into each end. Each end will be protected by protective netting and/or rubber end cap.

Tubes will be placed on Expanded Polystyrene Foam Cradles with 1-1/2 inch thick rubber foam placed between tubes and on ends.

H.C. Starck Inc.
21801 Tungsten Rd.
Euclid, OH 44117-/1117/USA
Phone +1 (216) 692-3990, Fax +1 (216) 692-0031