COBALT ALLOYS / MATERIAL PROFILE

MP35N Capillary Tubing

UNS R30035 / Cobalt-nickel-chromium-molybdenum alloy

01 Chemical composition

Composition by mass. The purchase specification sets the limits for lot acceptance.

ELEMENT	MASS %	ELEMENT	MASS %
Nickel (Ni)	**33.0–37.0**	Manganese (Mn)	**0.15 max**
Chromium (Cr)	**19.0–21.0**	Silicon (Si)	**0.15 max**
Molybdenum (Mo)	**9.0–10.5**	Carbon (C)	**0.025 max**
Cobalt (Co)	**Balance**	Boron (B)	**0.015 max**
Iron (Fe)	**1.0 max**	Phosphorus (P)	**0.015 max**
Titanium (Ti)	**1.0 max**	Sulfur (S)	**0.010 max**

02 Typical physical properties at 22 °C

Reference values for the alloy, not measurements on a finished tube or production lot.

PROPERTY	TYPICAL VALUE
Density	**8.41 g/cm³**
Elastic modulus	**233 GPa**
Thermal conductivity	**11.2 W/(m·K)**

Why the supply condition matters

Cold drawing strengthens MP35N and reduces its remaining ductility. Aging after cold work can increase strength further. If the tube will be bent or flared, specify that operation along with the strength and elongation required at delivery.

MP35N is a registered trademark of SPS Technologies, Inc.

PRECISION ROUND TUBING / PRODUCT SPECIFICATION

Tube Dimensions and Finish

MP35N® / Custom capillary tubing, cut lengths and sleeves

03 Dimensional capabilities

MingQuan's ranges below cover its tubing program. They are not stock sizes or a guarantee for every MP35N tube. We review the material condition and dimensions together at quotation.

FEATURE	CAPABILITY	SCOPE
Outside diameter (OD)	**0.3–20 mm**	Core focus: below 6 mm OD.
Wall thickness	**0.015–1.5 mm**	Depends on OD and bore.
Tube or component length	**0.8–2000 mm**	Long tubes and cut parts.
Inside / outside diameter tolerance	**±0.005 mm**	**Selected capillary sizes only.**
Cut-length tolerance	**Typically ±0.1 mm**	Length of short parts only.

04 Surface finish and cut ends

OUTER SURFACE

Ra ≤ 0.2 µm

BORE SURFACE

Ra ≤ 0.6 µm

Confirm finish and inspection requirements for the specified bore and length. For cut parts, specify burr-free ends and the edge profile; visual inspection at 20× checks for surface damage.

What to include with your drawing

MATERIAL	UNS R30035, supply condition and any mechanical acceptance tests.
GEOMETRY	OD, bore, wall, length, critical tolerances and end details.
ORDER	Quantity, inspection records and material traceability requirements.

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