

CI7200 Alloy 25 DSTO Rod and Tube

Alloy 25 DSTO Rod and Tube from Materion Brush Performance Alloys provides a combination of strength and ductility that can be optimized for your application. This alloy features high thermal stability, so the mechanical properties will not degrade over time in high temperature, downhole environments. It is a highly resilient alloy which also features high fatigue strength and magnetic permeability approaching unity. Alloy 25 DSTO also shows good resistance to wear, galling, corrosion, sulfide stress cracking, and chloride stress corrosion cracking. Typical applications include flex shafts, flex collars and couplings for oil and gas exploration.

CHEMICAL COMPOSITION (weight percent)

Alloy	Beryllium	Nickel + Cobalt	Nickel + Cobalt + Iron	Copper
CI7200	1.80 – 2.00	0.20 min.	0.6 max.	Balance

PHYSICAL PROPERTIES*

Elastic Modulus	Electrical Conductivity/ Resistivity	Density	Thermal Expansion Coefficient	Thermal Conductivity (25 °C)	Relative Magnetic Permeability	Poisson's Ratio
19,000 ksi 131 GPa	25-30% IACS 5.8-6.9 μΩ-cm	0.302 lb/in ³ 8.36 g/cm ³	9.7×10 ⁻⁶ in/in °F 17.0×10 ⁻⁶ m/m °C	60 BTU/ft hr °F 105 W/m °C	<1.0006	0.3

*Properties specified for the overaged precipitation hardened (heat treated) condition

MECHANICAL PROPERTIES**

Temper	0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation Percent	Hardness HRC	CVN Impact Strength	
	ksi	MPa	ksi	MPa			ft-lbs	J
DSTO-1	110 min.	758 min.	140 min.	965 min.	10 min.	C26 min.	11 avg.	15 avg.
DSTO-2	100 min.	689 min.	135 min.	931 min.	12 min.		11 avg.	15 avg.

**Properties specified for the overaged precipitation hardened (heat treated) condition and may vary by tube wall thickness.

FORMS AVAILABLE

Alloy 25 DSTO is available in rod with diameters ranging from 1.0" to 6" (25.4 to 152 mm) and in tube with outside diameters ranging from 1.0" to 16" (25.4 mm to 406 mm). Tube wall thickness is typically 10 to 20% of the outside diameter, subject to certain maximum and minimum constraints. Larger custom sizes may also be available, with slightly different properties. Please consult your local sales engineer about your requirements.

SPECIFICATIONS AND STANDARDS

CI7200, ASTM B 251 (rod), ASTM B 643 (tube), NACE MR0175/ISO 15156

ADDITIONAL INFORMATION

Additional technical information on Alloy 25 DSTO Rod or Tube including fatigue curves or impact strength may be obtained by phoning the Customer Technical Service Department at 800-375-4205. For pricing and availability, phone 800-521-8800, or the local sales number listed on the bottom of the next page.

TUBE TOLERANCES

Outside Diameter (inches)		Standard Diameter Tolerance (inches)	Outside Diameter (mm)		Standard Diameter Tolerance (mm)
Over	Including		Over	Including	
1.00	1.25	±0.020	25	30	±0.50
1.25	2.50	±0.030	30	38	±0.75
2.50	6.00	±0.060	38	150	±1.50

Additional tube tolerances are per ASTM B 643 and B 251.

ROD TOLERANCES

Rod Diameter or Bar Thickness (inches)		Standard Tolerance on Diameter (inches)	Rod Diameter or Bar Thickness (mm)		Standard Tolerance on Diameter (mm)
Over	Including		Over	Including	
1.00	2.00	±0.004	25	50	±0.10
2.00	3.00	±0.2% of Size	50	75	±0.2% of Size
3.00	6.00	±0.060	75	150	±1.50

Additional rod tolerances are per ASTM 196.

Please specify the exact tolerances that you require when you place your order. Tighter tolerances may be available at additional cost. Please contact your local sales engineer to confirm the requested capability.

North American Service Centers – Sales Inquiries

For bar, tube, plate/sheet >0.060" (1.5 mm) thick
and rod >0.5" (12.7 mm) diameter:

Warren, MI

TOLL FREE: 800-521-8800
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To obtain a complete list of our global Distributor/Agent network, visit us online at www.materion.com/BrushAlloys/ContactUs