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CCM Cobalt Chrome Moly

Cobalt Chrome Moly is a non-magnetic cobalt--chromium-molybdenum alloy used for machining and forging stock in the orthopedic implant industry. This alloy is produced by vacuum induction meting (VIM) followed by electroslag remelting (ESR). The finished mill product is supplied in the annealed, hot worked, or warm worked condition. CCM is typically annealed at 2000° to 2050°F (1093° to 1121°C) for 1 to 2 hours followed by water quenching.

Specifications

ASTM: F1537 Alloy 1
ASTM: F799
ISO: 5832-4
ISO: 5832-12

Chemical Composition, %

	Co	Cr	Ni	Mo	C	Other
	66.00	27	0.2	5.5	0.04	--

Features

- Excellent wear and galling resistance
- Excellent corrosion resistance
- Non-magnetic
- Excellent candidate for high-load bearing and joint applications

Applications

- Knee replacements
- Hip replacements
- Shoulder replacement implants
- Spinal rods, cages and disc replacement
- Fracture fixation

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Physical Properties

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Density	0.2990 lb/in³
Poisson's Ratio	0.300
Modules of Elasticity	(E) 35.0 x 10^3 ksi
Modules of Rigidity	(G) 13.4 x 10^3 ksi
Specific Gravity	8.29

Mechanical Properties

Condition	0.2% Yield Strength	Ultimate Tensile Strength	% Elongation in 4D	% Reduction of Area	HRC Hardness
Annealed	85 ksi 585 MPa	150 ksi 1035 MPa	25	23	30
Warm Worked	135 ksi 930 MPa	190 ksi 1310 MPa	26	23	40
Hot Worked	110 ksi 760 MPa	160 ksi 1100 MPa	25	23	33

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