

**CDA673****Chemical Composition**

(% max., unless shown as range or min.)

	Cu ⁽¹⁾	Al	Fe	Pb	Mn	Ni ⁽²⁾	Si	Sn	Zn
Min. /Max.	58.0-63.0	.25	.50	.40-3.0	2.0-3.5	.25	.50-1.5	.30	Rem.
Nominal	60.5	-	-	1.7	2.7	-	1.0	-	34.1

(1) Cu value includes Ag.

(2) Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.5% min.

Applicable Specifications

Product	Specification
Bar	SAE J461, J463
Forgings	SAE J461, J463
Rod	SAE J463, J461
Shapes	SAE J463, J461

Common Fabrication Processes

Hot Forming, Hot Pressing, Machining

Fabrication Properties

Joining Technique	Suitability
Machinability Rating	70

Mechanical Properties (measured at room temperature, 68 F (20 C))

Temper	Section Size	Cold Work	Temp	Tensile Strength	Yield Strength (0.5% ext. under load)	Yield Strength (0.2% offset)	Yield Strength (0.05% offset)	Rockwell Hardness	Vickers Hard.	Brinell Hard.	Shear Strength	Fatigue Strength*	Izod Impact Strength
	in.	%	F	ksi	ksi	ksi	ksi	% B	CF30T500	5003000	ksi	ksi	ft-lb
	mm.		C	MPa	MPa	MPa	MPa				MPa	MPa	J
Bar													
H50	<1.00	0	min 68	65	40	-	-	1180-	--	-	-	-	0.0
	<25.4		20	448	276	-	-	1180-	--	-	-	-	0.0

*Fatigue Strength: 100 x 10⁶ cycles, unless indicated as [N] X 10⁶.**Physical Properties**

	US Customary	Metric
Melting Point - Liquidus	1605 F	874 C
Density	.30 lb/in ³ at 68 F	8.3 gm/cm ³ @ 20 C
Specific Gravity	8.30	8.3
Electrical Conductivity	22 %IACS @ 68 F	0.13 MegaSiemens/cm @ 20 C
Thermal Conductivity	55 Btu · ft/(hr · ft ² · °F) at 68 F	95.0 W/m · °K at 20 C
Coefficient of Thermal Expansion	11 · 10 ⁻⁶ per °F (68-572 F)	19.0 · 10 ⁻⁶ per °C (20-300 C)
Modulus of Elasticity in Tension	17000 ksi	117200 MPa

Temper Most Commonly Used

Other	
BAR	H50
FORGST	
ROD	H50



Typical Uses

Fasteners

Fasteners, Lead Screw Nuts

Industrial

Clutch Bearings, Shaft Bushings, Propeller Shafts, Sleeve Bearings, Thrust Bearings, Pump Parts, Seal Rings, Spindles, Idler Pins, Drive Shafts, Piston Heads, Bearings, Bushings, Bearings, Pins, Wear Plates, Gears and Cams

Marine

Hardware, Valve Seats

Other

Connecting Rods

Casting Characteristics

No casting characteristics available for this alloy.