

**CDA485 (Naval Brass, High Leaded)****Chemical Composition**

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

	Cu	Fe	Pb	Sn	Zn
Min. /Max.	59.0-62.0	.10	1.3-2.2	.50-1.0	Rem.
Nominal	60.5	-	1.8	.7	37.5

Note: Cu + Sum of Named Elements, 99.6% min.

Applicable Specifications

Product	Specification
Bar	ASTM B21 FEDERAL QQ-B-639
Bar, Forging	ASTM B124
Forgings, Die	ASTM B283
Plate	FEDERAL QQ-B-639
Rod	ASTM B21
Rod, Forging	ASTM B124
Shapes	ASTM B21
Shapes, Forging	ASTM B124
Sheet	FEDERAL QQ-B-639
Strip	FEDERAL QQ-B-639

Common Fabrication Processes

Hot Forging and Pressing, Machining

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Spot Weld	Not Recommended
Seam Weld	Not Recommended
Butt Weld	Fair
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Good
Forgeability Rating	90
Machinability Rating	70

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Annealing Minimum	800	427
Annealing Maximum	1100	594
Annealing Time		
Hot Works Minimum	1200	649
Hot Works Maximum	1400	761



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. mm.	%	F C	ksi MPa	ksi MPa	ksi MPa	ksi MPa	% B CF30T500			ksi MPa	ksi MPa	ft-lb J
Rod													
O60	1	0	TYP68	57	25	-	-	4055	- - -	-	36	-	0.0
	25.4		20	393	172	-	-	4055	- - -	-	248	-	0.0
H01	1	8	TYP68	69	46	-	-	2078	- - -	-	39	-	0.0
	25.4		20	476	317	-	-	2078	- - -	-	269	-	0.0
H02	1	20	TYP68	75	53	-	-	1582	- - -	-	40	-	0.0
	25.4		20	517	365	-	-	1582	- - -	-	276	-	0.0

*Fatigue Strength: 100×10^6 cycles, unless indicated as [N] $\times 10^6$.

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1650 F	899 C
Melting Point - Solidus	1630 F	888 C
Density	0.305 lb/in ³ at 68 F	8.44 gm/cm ³ @ 20 C
Specific Gravity	8.440	8.44
Electrical Resistivity	39.90 ohms-cmil/ft @ 68 F	6.63 microhm-cm @ 20 C
Electrical Conductivity	26 %IACS @ 68 F	0.152 MegaSiemens/cm @ 20 C
Thermal Conductivity	67 Btu · ft/(hr · ft ² · °F) at 68F	116.0 W/m · °K at 20 C
Coefficient of Thermal Expansion	$11.80 \cdot 10^{-6}$ per °F (68-572 F)	$21.2 \cdot 10^{-6}$ per °C (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/°F at 68 F	377.1 J/kg · °K at 293 K
Modulus of Elasticity in Tension	15000 ksi	103400 MPa
Modulus of Rigidity	5600 ksi	38610 MPa

Temper Most Commonly Used

Flat Products	
BAR, DRAWN	H01, H02, O60

Other	
ROD	H01, H02, O60
SHAPES	H01, OTHER

Typical Uses

Fasteners

Fasteners

Industrial

Screw Machine Parts, Light Bearings, Valve Stems, Gears

Marine

Marine Hardware, Seawater Valve Stems

Casting Characteristics

No casting characteristics available for this alloy.