

**CDA636****Chemical Composition**

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

	Cu ⁽¹⁾	Al	As	Fe	Pb	Ni ⁽²⁾	Si	Sn	Zn
Min. /Max.	Rem.	3.0-4.0	.15	.15	.05	.15	.7-1.3	.20	.50
Nominal	95.5	3.5	-	-	-	-	1.0	-	-

(1) Cu value includes Ag.

(2) Ni value includes Co.

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

Applicable Specifications

No information available.

Common Fabrication Processes

Cold heading

Fabrication Properties

Joining Technique	Suitability
Soldering	Not Recommended
Brazing	Not Recommended
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair
Spot Weld	Fair
Seam Weld	Fair
Butt Weld	Fair
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Fair
Machinability Rating	40

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Hot Works Minimum	1400	761
Hot Works Maximum	1600	872

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		5003000ksi MPa	ksi MPa		ft-lb J
Rod													
O61	0.0	0	TYP68	60	-	-	-	64-	---	-	-	-	0.0
	0.0		20	414	-	-	-	64-	---	-	-	-	0.0
Wire													
H01	0.488	21	TYP68	84	-	-	-	2984-	---	-	-	-	0.0
	12.4		20	579	-	-	-	2984-	---	-	-	-	0.0
Rod													
H01	0.0	0	TYP68	74	-	-	-	31-	---	-	-	-	0.0
	0.0		20	510	-	-	-	31-	---	-	-	-	0.0
Wire													
H00	0.422	7	TYP68	68	-	-	-	5271-	---	-	-	-	0.0
	10.7		20	469	-	-	-	5271-	---	-	-	-	0.0
O61	0.392	0	TYP68	60	-	-	-	67-	---	-	-	-	0.0
	10		20	414	-	-	-	67-	---	-	-	-	0.0

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

**Physical Properties**

	US Customary	Metric
Melting Point - Liquidus	1890 F	1032 C
Density	0.301 lb/in ³ at 68 F	8.33 gm/cm ³ @ 20 C
Specific Gravity	8.330	8.33
Electrical Resistivity	86.40 ohms-cmil/ft @ 68 F	14.36 microhm-cm @ 20 C
Electrical Conductivity	12 %IACS @ 68 F	0.07 MegaSiemens/cm @ 20 C
Thermal Conductivity	33 Btu · ft/(hr · ft ² · °F) at 68 F	57.1 W/m · °K at 20 C
Coefficient of Thermal Expansion	$9.40 \cdot 10^{-6}$ per °F (68-572 F)	$16.9 \cdot 10^{-6}$ per °C (20-300 C)
Modulus of Elasticity in Tension	16000 ksi	110000 MPa

Tempers Most Commonly Used

Other	
ROD	H01, O60
WIRE	H00, H01, O60

Typical Uses**Electrical**

Components for Pole Line Hardware, Cold Headed Nuts, Cable Connectors

Fasteners

Bolts, Screw Machine Products

Industrial

Valve Components, Nuclear Power Service

Casting Characteristics

No casting characteristics available for this alloy.