

CDA COPPER NO. C 155 00

SuperSilverCopper-155™

Composition—Percent

	Nominal	Minimum	Maximum
Copper (including silver)	—	99.75	—
Silver	—	.027 (8)*	.10 (30)*
Phosphorus	.06	.040	.080
Magnesium	.11	.08	.13

*1 Troy ounce per avoirdupois ton = 0.0034%

Typical Uses

ELECTRICAL: High-conductivity springs, electrical contacts, resistance welding electrodes, electrical fittings, clamps, connectors, terminals, electronic lead frames and other components

MECHANICAL: Diaphragms, washers

Common Fabrication Processes

Blanking, coining, drawing, etching, forming, bending, and stamping

Physical Properties

	English Units	C.G.S. Units
Melting Point (Liquidus)	1980°F.	1082°C.
Melting Point (Solidus)	1960°F	1071°C
Density	.322 lb./cu. in. @ 68°F.	8.91 gm./cu. cm. @ 20°C.
Specific Gravity	8.91	8.91
Coefficient of Thermal Expansion	.0000098 per °F. from 68°F. to 212°F.	.0000177 per °C. from 20°C. to 100°C.
Thermal Conductivity	200 Btu./sq. ft./ft./hr./°F. @ 68°F.	83 cal./sq. cm./cm./sec./°C. @ 20°C.
Electrical Resistivity (Annealed)	10.0 Ohms (circ. mil./ft.) @ 68°F.	1.83 Microhm-cm. @ 20°C.
Electrical Conductivity* (Annealed)	94% IACS @ 68°F.	.545 Megohm-cm. @ 20°C.
Thermal Capacity (Specific Heat)	.092 Btu./lb./°F. @ 68°F.	.092 cal./gm./°C. @ 20°C.
Modulus of Elasticity (Tension)	17,000,000 psi	12,000 Kg./sq. mm.
Modulus of Rigidity	6,400,000 psi	4,500 Kg./sq. mm.
Magnetic Permeability	Less than 1.002 gauss/oersted	

*Volume basis after precipitation heat treatment

Fabrication Properties

Capacity for being Cold Worked Excellent
 Capacity for being Hot Formed Excellent
 Hot Forgeability Rating (Forging Brass = 100) —
 Hot Working Temperature 1400-1600°F. or 750-875°C.
 Annealing Temperature 750-1000°F. or 400-540°C.
 Machinability Rating (Free Cutting Brass = 100) 20

Suitability for being joined by:

Soldering Excellent
 Brazing Excellent

For other methods of joining—consult our Technical Service Group.

Mechanical Properties

Form	Size Section	Temper (Nominal Yield Strength 1000 psi)	Tensile Strength psi	Yield Strength		Elongation in 2" %	Rockwell Hardness		Fatigue Strength	
				.5% Ext. psi	.2% Offset psi		15-T	30-T	psi	10 ⁶ Cycles
FLAT PRODUCTS	.015 in.	Soft	40,000	18,000	17,800	32	63	—	15,000	100
		35	45,000	35,000	34,800	25	74	50	—	—
		45	50,000	42,000	42,000	18	78	54	—	—
		50	50,000	46,000	45,800	10	80	57	—	—
		55	60,000	52,000	52,000	10	82	68	—	—
		60	60,000	57,000	57,000	6	84	72	21,500	100
		65	70,000	62,000	62,000	8	86	75	—	—
		70	70,000	67,000	67,000	3	87	78	21,500	100
		75	80,000	75,000	75,000	2	88	—	—	—

The values listed above represent reasonable approximations suitable for general engineering use. Due to commercial variations in composition and to manufacturing limitations, they should not be used for specification purposes. See applicable A.S.T.M. specification references.