

C425 (CuZn9.5Sn2)

Composition

Cu* (%)	Fe (%)	Pb (%)	P (%)	Sn (%)	Zn (%)
87.0-90.0	0.05 max	0.05 max	0.35 max	1.5-3.0	rem

*) Cu + sum of named elements min 99.7 %

Physical Properties

Temper	Melting point (liquidus)	Density	Specific heat cap. at 68 F (20 °C)	Electrical cond. Nom in black	Thermal cond. at 68 F (20 °C)	Mod. of elasticity	Coef. of therm.exp at 68 F (20 °C)
	°F °C						
All	1890	0.316	0.09	28	69	16	10.2
	1032	8.75	0.38	28	119	110	18.4

Mechanical Properties

At max 0.040" (1 mm)

Temper	R _{p0.2} Yield strength ksi N/mm ²	R _m Tensile strength ksi N/mm ²	A ₅₀ Elongation 2" %	Hardness for reference HR30T HV	Min bend ratio 90°		Min bend ratio 180°	
					GW	BW	GW	BW
Soft	17 117	41-47 283-324	48		0.0	0.0	0.0	0.0
H02 (1/2H)	56 386	57-69 393-476	20	68 130	0.0	0.0	0.0	0.5
H04 (H)	74 510	70-82 483-566	6	73 155	0.0	1.0	0.5	2.0
H06 (EH)	80 552	76-88 524-607	4	74 165	0.0	1.0	0.5	2.5
H08 (SH)	86 593	84-94 579-648	3	76 175	1.0	2.0	2.5	
H10 (ES)	min 88 min 607	min 92 min 635	2	76 185				

Other tempers are available upon request.

Data for information only and not for use as purchase specification.

Yield strength, Elongation and Hardness are typical values for each temper.

Stress relaxation resistance

Typical temperature for min 70 % remaining stress after 3000 h: 125 °C

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Alloy attributes

AMBRONZE - 425 alloy with nominal composition of 88.5% copper, 2% tin and 9.5% zinc, one of the family of tin brasses. 425 combines the strength and ductility of Cartridge Brass, 260 with spring properties, corrosion resistance and wear resistance approaching that of 5 % Phosphor Bronze, 510. 425 is the most widely used of the tin brasses, finding extensive use as current-carrying contacts, terminals, springs and connectors in the transportation field, especially automotive, as well as in electronic and electrical wiring devices. The alloy fills an important gap in properties between 260 and 510 and is utilized where an engineer previously had to over-design with 510 or under-design with 260. Where cost is an important factor, 425 is the least expensive of the high performance copper base spring alloys. The very high resistance to both dezincification and stress-corrosion cracking together with excellent resistance against corrosion and stress relaxation permits the use of this alloy under severe and exacting service conditions.

High ductility
Good spring properties
Good electrical and thermal conductivity
Excellent stress relaxation resistance
Good wear resistance

Typical applications

Electrical contacts, springs, and switches. Terminals, connectors, fuse clips, pen clips, weatherstrip, thermostat element cups.

Design limitations

Applicable specifications

ASTM B591, B888