Alloy XP5

Low Ox Copper

Chemical Composition

	Wt.%
(1) (2) Copper	99.95 min
Phosphorous	.001 - .005

(1) Cu value includes Ag
(2) Includes P.

Physical Properties

Temper #	Temper Name	Tensile Strength	0.2% Off. Y.S. (ref.)	% El. (ref.)
H00	1/8 Hard	32 - 40	22 - 37	20 - 40
H01	1/4 Hard	34 - 42	26 - 39	13 - 33
H02	1/2 Hard	37 - 46	30 - 44	8 - 32
H03	3/4 Hard	41 - 50	36 - 48	6 - 22
H04	Hard	43 - 52	39 - 50	3 - 16
H06	Extra Hard	47 - 56	44 - 53	2 - 11
H08	Spring	50 - 58	48 - 57	2 - 4
H10	Extra Spring	52 Min.	50 Min.	3 Max.

Temper #	Temper Name	Grain Size Min.	Grain Size Max.	U.T.S. (ref.)	% El. (ref.)
O60	Soft Anneal	A	None	25-38	20 - 42
OS025	Deep-Draw Anneal	A	0.050 mm	---	---

A Although no minimum grain size is required, this material must be fully recrystalized

Physical Characteristics

Physical Characteristic	English Units	C. G. S. Units
Melting Point (liquidus)	1981 F	1083 C
Melting Point (solidus)	1981 F	1083 C
Density	0.323 lb./cu. in @ 68 F	8.94 gm./cm^2 @ 20 C
Specific Gravity	8.94	8.94
Coefficient of Thermal Expansion	0.0000098 per ^{o}F from 68 F to 572 F	0.0000177 per ^{o}C from 20 C to 300 C
Thermal Conductivity	223 Btu/ft.^{2}/ft/hr/^{o}F @ 68 F	0.923 cal./cm.^{2}/cm/sec./^{o}C @ 20 c
Electrical Resistivity (annealed)	10.5 Ohms (circ. mil./ft.) @ 68 F	1.75 Microhm-cm @ 20 C
Electrical Conductivity (annealed)	99% IACS @ 68 F	0.579 Megmho-cm @ 20 C
Thermal Capacity (specific heat)	0.092 Btu/lb. ^{o}F @ 68 F	0.092 cal/gm./^{o}C @ 20 c
Modulus of Elasticity (tension)	17,000 ksi	12,000 Kg/mm^2
Modulus of Rigidity	6,400 ksi	4,500 Kg/mm^2

Typical Uses

Clad Products, Terminals, Wave Guides, Electrical Conductors. Excellent weldability compared to C110. Alloy XP5 is designed specifically for TIG and high frequency resistance welding. Alloy XP5 also exhibits improved bend formability for stampings, connectors, relays, drawn parts, buss bars, and electrical lead-frames where ETP C110 is marginal or fails to make tight bends and forms. XP5 is easily plated and has excellent solderability – equal to that of pure copper and OFHC copper.
Alloy XP5 can be produced in accordance with DIN Specification for SE-Cu 103 upon request.