

C51000 (Phosphor Bronze, 5% A)

US EPA Registered Antimicrobial

Chemical Composition

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

	Cu	Fe	Pb	P	Sn	Zn
Min./Max.	Rem.	10	0.05	0.03-0.35	4.2-5.8	0.30
Nominal	94.8	-	-	.20	5.0	-

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

Mechanical Properties (measured at room temperature, 68 F (20 C))

Temper	Section Size	Cold Work	Typ/Min	Temp	Tensile Strength	Yield Strength			Rockwell Hardness	Vickers Hard.	Brinell Hard.	Shear Strength	Fatigue Strength*	Izod Impact Strength
						(0.5% ext. under load)	(0.2% offset)	(0.05% offset)						
	in. mm.	%	F C	ksi MPa	ksi MPa	ksi MPa	ksi MPa	% B CF 30T500	5003000ksi	MPa	ksi MPa	ksi MPa	ft-lb J	
Flat Products														
M20	0.0	0	TYP	68	50	-	-	-	-	-	-	-	-	0.0
	0.0			20	345	-	-	-	-	-	-	-	-	0.0
OS015	0.04	0	TYP	68	53	22	-	5034-	79-	-	-	-	-	0.0
	1			20	365	152	-	5034-	79-	-	-	-	-	0.0
Wire														
H08	0.08	84	TYP	68	140	-	-	2 -	-	-	-	-	-	0.0
	2			20	965	-	-	2 -	-	-	-	-	-	0.0
H01	0.08	0	TYP	68	68	60	-	24-	-	-	-	-	-	0.0
	2			20	469	414	-	24-	-	-	-	-	-	0.0
Flat Products														
HR08	0.0	0	TYP	68	103	-	93	9 -	-	-	-	-	-	0.0
	0.0			20	710	-	641	9 -	-	-	-	-	-	0.0
O61	0.0	0	SMIN	68	46	-	13	47-	-	-	-	-	-	0.0
	0.0			20	315	-	90	47-	-	-	-	-	-	0.0
OS035	0.04	0	TYP	68	49	20	-	5828-	75-	-	-	-	-	0.0
	1			20	338	138	-	5828-	75-	-	-	-	-	0.0
H06	0.04	0	TYP	68	96	-	92	3 93-	78 -	-	-	-	-	0.0
	1			20	662	-	634	3 93-	78 -	-	-	-	-	0.0
H01	0.0	0	SMIN	68	49	-	20	24-	-	-	-	-	-	0.0
	0.0			20	340	-	140	24-	-	-	-	-	-	0.0
H04	0.04	0	TYP	68	84	-	80	7 87-	75 -	-	-	-	25	0.0
	1			20	579	-	552	7 87-	75 -	-	-	-	172	0.0
HR06	0.0	0	TYP	68	96	-	86	11-	-	-	-	-	-	0.0
	0.0			20	662	-	593	11-	-	-	-	-	-	0.0
HR02	0.0	0	TYP	68	66	-	54	28-	-	-	-	-	-	0.0
	0.0			20	455	-	372	28-	-	-	-	-	-	0.0
H08	0.04	0	TYP	68	103	-	99	3 95-	79 -	-	-	-	22	0.0
	1			20	710	-	683	3 95-	79 -	-	-	-	152	0.0
HR04	0.0	0	TYP	68	84	-	74	14-	-	-	-	-	-	0.0
	0.0			20	579	-	510	14-	-	-	-	-	-	0.0
Rod														
H02	0.5	20	TYP	68	75	65	-	2580-	-	-	-	-	-	0.0
	12.7			20	517	448	-	2580-	-	-	-	-	-	0.0
H02	1	20	TYP	68	70	58	-	2578-	-	-	-	-	-	0.0
	25.4			20	483	400	-	2578-	-	-	-	-	-	0.0
Wire														
H04	0.08	0	TYP	68	110	-	-	3 -	-	-	-	27	0.0	
	2			20	758	-	-	3 -	-	-	-	186	0.0	
OS035	0.08	0	TYP	68	50	20	-	58-	-	-	-	-	0.0	
	2			20	345	138	-	58-	-	-	-	-	0.0	
Flat Products														
OS050	0.04	0	TYP	68	47	19	-	6426-	73-	-	-	-	-	0.0
	1			20	324	131	-	6426-	73-	-	-	-	-	0.0
Wire														
H06	0.08	75	TYP	68	130	-	-	3 -	-	-	-	30	0.0	
	2			20	896	-	-	3 -	-	-	-	207	0.0	
H02	0.08	0	TYP	68	85	80	-	8 -	-	-	-	-	0.0	
	2			20	586	552	-	8 -	-	-	-	-	0.0	
Flat Products														
O60	0.0	0	TYP	68	50	-	-	-	40-	-	-	-	-	0.0
	0.0			20	345	-	-	-	40-	-	-	-	-	0.0
H02	0.0	0	TYP	68	66	-	54	2478-	69 -	-	-	-	-	0.0

	0.0		20	455	-	372	-	2478	-	69	-	-	-	-	0.0
OS025	0.04	0	TYP	68	50	21	-	5230	-	77	-	-	-	-	0.0
	1			20	345	145	-	5230	-	77	-	-	-	-	0.0
H10	0.04	0	TYP	68	107	-	103	-	2	97	-	80	-	-	0.0
	1			20	738	-	710	-	2	97	-	80	-	-	0.0

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

Physical Properties

<="" b="">	US Customary
Melting Point - Liquidus	1920 F
Melting Point - Solidus	1750 F
Density	0.320 lb/in ³ at 68 F
Specific Gravity	8.860
Electrical Resistivity	69.10 ohms-cmil/ft @ 68 F
Electrical Conductivity*	15 %IACS @ 68 F
Thermal Conductivity	40 Btu · ft/(hr · ft ² · °F) at 68 F
Coefficient of Thermal Expansion	$9.90 \cdot 10^{-6}$ per °F (68-572 F)
Specific Heat Capacity	0.090 Btu/lb/°F at 68 F
Modulus of Elasticity in Tension	16000 ksi
Modulus of Rigidity	6000 ksi

*Determined on an alloy containing 5% tin and .2% phosphorus. This value will vary with the composition.