C36000 (Free-Cutting Brass)

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

	Cu	Fe	Pb	Zn
Min./Max.	60.0-63.0	.35	2.5-3.0	Rem.
Nominal	61.5	-	2.7	35.4

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 (0.5% ext. under load)	Yield Strength (0.2% offset)	Yield Strength (0.05% offset)	El	Rockwell Hardness			Vickens Hard.		Brinell Hard.		Shear Strength	Fatigue Strength*	Izod Impact Strength
	in.	%		F	ksi	ksi	ksi	ksi	%	B	CF	30T	500		500	3000	ksi	ksi	ft-lb
	mm.			C	MPa	MPa	MPa	MPa									MPa	MPa	J
Rod																			
H04	0.375	0	TYP	68	-	-	-	-	-	78	-	-	-		-	-	34	-	0.0
	12.7			20	-	-	-	-	-	78	-	-	-		-	-	234	-	0.0
H02	1.5	0	TYP	68	-	-	-	-	-	65	-	-	-		-	-	-	-	0.0
	38.1			20	-	-	-	-	-	65	-	-	-		-	-	-	-	0.0
H04	0.625	0	SMIN	68	65	30	-	-	6	-	-	-	-		-	-	-	-	0.0
	15.9			20	450	205	-	-	6	-	-	-	-		-	-	-	-	0.0
H02	3.0	0	SMIN	68	45	15	-	-	20	-	-	-	-		-	-	-	-	0.0
	76.2			20	310	105	-	-	20	-	-	-	-		-	-	-	-	0.0
O60	1.5	0	SMIN	68	44	18	-	-	20	-	-	-	-		-	-	-	-	0.0
	38.1			20	305	18	-	-	20	-	-	-	-		-	-	-	-	0.0
H02	0.75	0	MIN	68	-	-	-	-	-	70	-	-	-		-	-	-	-	0.0
	19.1			20	-	-	-	-	-	70	-	-	-		-	-	-	-	0.0
H02	<0.50	0	TYP	68	-	-	-	-	-	65	-	-	-		-	-	32	20	0.0
	12.7			20	-	-	-	-	-	65	-	-	-		-	-	221	138	0.0
Bar																			
H02	<0.50	0	SMIN	68	50	25	-	-	10	-	-	-	-		-	-	-	-	0.0
	<12.7			20	345	170	-	-	10	-	-	-	-		-	-	-	-	0.0
O60	1.5	0	SMIN	68	40	15	-	-	25	-	-	-	-		-	-	-	-	0.0
	38.1			20	275	105	-	-	25	-	-	-	-		-	-	-	-	0.0
Shapes																			
H01	0.5	11	TYP	68	56	45	-	-	20	62	-	-	-		-	-	33	-	0.0
	12.7			20	386	310	-	-	20	62	-	-	-		-	-	228	-	0.0
M30	0.5	0	TYP	68	49	18	-	-	50	-	68	-			-	-	30	-	0.0
	12.7			20	338	124	-	-	50	-	68	-			-	-	207	-	0.0
Rod																			
H02	1.5	0	SMIN	68	50	20	-	-	15	-	-	-	-		-	-	-	-	0.0
	38.1			20	345	140	-	-	15	-	-	-	-		-	-	-	-	0.0
O60	<1	0	SMIN	68	48	20	-	-	15	-	-	-	-		-	-	-	-	0.0
	<25.4			20	330	124	-	-	15	-	-	-	-		-	-	-	-	0.0
Bar																			
H02	1.5	0	TYP	68	-	-	-	-	-	60	-	-	-		-	-	-	-	0.0
	38.1			20	-	-	-	-	-	60	-	-	-		-	-	-	-	0.0
H02	<0.50	0	TYP	68	-	-	-	-	-	65	-	-	-		-	-	-	-	0.0
	<12.7			20	-	-	-	-	-	65	-	-	-		-	-	-	-	0.0
Rod																			
H02	4.5	0	SMIN	68	40	15	-	-	20	25	-	-	-		-	-	-	-	0.0
	114.3			20	275	105	-	-	20	25	-	-	-		-	-	-	-	0.0
H04	0.25	0	TYP	68	-	-	-	-	-	80	-	-	-		-	-	38	-	0.0
	6.35			20	-	-	-	-	-	80	-	-	-		-	-	262	-	0.0
Flat Products																			
H02	0.25	11	TYP	68	56	45	-	-	20	62	-	-	-		-	-	33	-	0.0
	4.76			20	386	310	-	-	20	62	-	-	-		-	-	228	-	0.0
Rod																			
H04	0.375	0	SMIN	68	70	35	-	-	4	-	-	-	-		-	-	-	-	0.0
	12.7			20	480	240	-	-	4	-	-	-	-		-	-	-	-	0.0
H02	0.75	0	SMIN	68	55	25	-	-	10	-	-	-	-		-	-	34	-	0.0
	19.1			20	380	170	-	-	10	-	-	-	-		-	-	234	-	0.0
H02	3.0	0	TYP	68	-	-	-	-	-	55	-	-	-		-	-	-	-	0.0
	76.2			20	-	-	-	-	-	55	-	-	-		-	-	-	-	0.0
Bar																			
O60	<1	0	SMIN	68	44	18	-	-	20	-	-	-	-		-	-	-	-	0.0
	<25.4			20	305	125	-	-	20	-	-	-	-		-	-	-	-	0.0
Rod																			
O60	<1	0	TYP	68	-	-	-	-	-	28	-	-	-		-	-	30	-	0.0

	<25.4			20	-	-	-	-	-	28	-	-	-	-	-	207	-	0.0
H04	0.25	0	SMIN	68	80	45	-	-	-	-	-	-	-	-	-	-	-	0.0
	6.35			20	550	310	-	-	-	-	-	-	-	-	-	-	-	0.0
O60	2.5	0	SMIN	68	40	15	-	-	25	-	-	-	-	-	-	-	-	0.0
	63.5			20	40	15	-	-	25	-	-	-	-	-	-	-	-	0.0
H02	<0.50	0	TYP	68	57	25	-	-	7	-	-	-	-	-	-	-	-	0.0
	12.7			20	395	170	-	-	7	-	-	-	-	-	-	-	-	0.0
Bar																		
H02	3	0	SMIN	68	40	15	-	-	20	-	-	-	-	-	-	-	-	0.0
	76.2			20	275	105	-	-	20	-	-	-	-	-	-	-	-	0.0
H02	1.5	0	SMIN	68	45	17	-	-	15	-	-	-	-	-	-	-	-	0.0
	38.1			20	310	115	-	-	15	-	-	-	-	-	-	-	-	0.0
O60	1.5	0	TYP	68	-	-	-	-	-	22	-	-	-	-	-	-	-	0.0
	38.1			20	-	-	-	-	-	22	-	-	-	-	-	-	-	0.0

*Fatigue Strength: 100 x 10^6 cycles, unless indicated as [N]X 10^6.

Physical Properties

<="" b="">	US Customary
Melting Point - Liquidus	1650 F
Melting Point - Solidus	1630 F
Density	0.307 lb/in^3 at 68 F
Specific Gravity	8.500
Electrical Resistivity	39.90 ohms-cmil/ft @ 68 F
Electrical Conductivity	26 %IACS @ 68 F
Thermal Conductivity	67 Btu · ft/(hr · ft2·^{o}F)at 68F
Coefficient of Thermal Expansion	11.40 ·10^{-6} per ^{o}F (68-572 F)
Specific Heat Capacity	0.090 Btu/lb/^{o}F at 68 F
Modulas of Elasticity in Tension	14000 ksi
Modulus of Rigidity	5300 ksi