

COPPER POWDERS

Grade	Apparent Density (g/cm ³)	Cu (% Min)	H ₂ Loss (% Max)	Screen Analysis				
				+100	+150	+200	+325	-325
IRREGULAR								
Cu31	2.80 - 3.20	99.3	0.3	10 Min	80 Max	Rem	Rem	3 Max
Cu155	2.55 - 2.75	99.3	0.3	Tr	1 Max	15 Max	Rem	55 - 65
Cu271	2.55 - 2.75	99.3	0.3	0.8 Max	35 Max	70 Max	Rem	5 Max
Cu273	2.50 - 2.80	99.3	0.3	1 Max	20 Max	25 Max	40 Max	30 - 45
Cu274	2.60 - 2.80	99.3	0.3	0.6 Max	20 Max	25 Max	Rem	38 - 45
Cu275	2.55 - 2.75	99.3	0.3	0.5 Max	10 Max	20 Max	Rem	42 - 55
Cu278	2.60 - 2.80	99.3	0.3	Tr	1 Max	5 Max	Rem	75 Min
Cu279	2.60 - 2.80	99.3	0.3	Tr	1 Max	3 Max	Balance	90 Min
M1000	2.10 - 2.50	98.5	0.7	0.5 Max	9 Max	15 Max	30 Max	60 - 70
M1085	2.10 - 2.50	98.5	0.7	Tr	5 Max	Rem	Rem	85 Min
1700-FPM	2.5	99.3	0.20	Tr	5 Max	Rem	Rem	85 Min
1900-F	1.8	98.75	0.30	Tr	5 Max	Rem	Rem	85 Min
CC-140	3.5 - 4.5	99.00	0.20	Tr	5 Max	Rem	Rem	85 Min
SPHERICAL								
C-110	4.50 - 5.50	99.2	0.7	2 Max	-	10 - 20	25 - 35	50 - 60
C-118	4.50 - 5.50	99.2	0.7	Tr	-	Tr	Rem	80 Min
C-112	4.50 - 5.50	99.2	0.7	-	-	1 Max	Rem	95 Min

COPPER ALLOY POWDERS

Grade	Apparent Density (g/cm ³)	Cu (% Min)	Sn %	H ₂ Loss (% Max)	Screen Analysis				
					+100	+150	+200	+325	-325
IRREGULAR									
M2000	2.90 - 3.50	98.9	1	0.5	-	5 Max	Rem	Rem	45 - 60
M3000	2.80 - 3.50	90.5	9	0.5	5 Max	20 Max	25 Max	30 Max	25 - 40

PREMIX BRONZE

Grade	Dimensional Change Range %*	MPIF Std. 35	Grade	Composition	AD g/cm ³	Green Den. g/cm ³	*DC %	Sint Den. g/cm ³	TRS psi	UTS psi
≈	-0.5 To +0.5	CT-1000	HD-1000	90/10 (Cu/Sn)	3.6	7.2	0.0	7.2	50,000	--
MG (Series 1 & 2)	+0.5 To +1.5	CT-1000	HD-2000	89/9/2 (Cu/Sn/Zn)	3.4	7.5	-2.5	8.2	100,000	40,000
HG (Series 1 & 2)	+1.5 To +2.5	CT-1000								
GRAPHITED (Series L, M & H)	+0.5 To +2.5	CTG-1001								

*Sintered at 1560°F (849°C) for 30 minutes in DA Atmosphere

TIN POWDER

Grade	Purity, %	AD g/cm ³ (typical)	-325 Mesh, %
-325 Tin Powder	99.9 Min.	3.65	90 Min.
-145 Tin Powder	99.9 Min.	3.95	65 - 75

*Sintering Conditions: MPIF transverse bars, compacted to 6.3 g/cm³ density; sintered for 12 minutes at 1530°F (832°C) in DA atmosphere

COPPER POWDERS



Titan Metal Powders, Inc. offers a wide variety of Copper, Brass, Premix and Pre-Alloy Bronze Powders, Nickel/Silver, and Oxide Reduced Copper Powders. We offer standard and custom grades with compositions and properties that are designed to meet customer specifications requirements. We produce specifically designed powders for infiltration, carbon brushes, brazing pastes, friction applications, Bronze filters, PTFE, Bronze bearings, artistic plastic fillers, and frangible projectiles and a wide variety of metallurgical and chemical applications. These non-ferrous metal powders are characterized by excellent compressibility and green strength at moderate compacting pressures. Also, selective properties may be obtained over a wide range of sintering temperatures. Titan Metal Powders has innovative research and development services to assist in your technical requirements.

301 Lilac Lane, Cinnaminson, NJ 08077
Tel: 800.435.4644 • Tel: 856.735.2220
Fax: 856.829.2783

COPPER ALLOY (P/M) POWDERS

Typical Composition, (%)										Typical Sintered Properties +				
Grade	Cu	Zn	Other	Mesh Nominal	Apparent Density (g/cm ³)	Green Density (g/cm ³)	Green Strength (psi)	Sinter Temperatures (°F)	Sinter Density (g/cm ³)	Hardness (Rh)	DC, (%)	TRS, (psi)	UTS, (psi)	Elongation (%)
BRASS (UN-LEADED)										BRASS (UN-LEADED)				
B-133	90.0	10.0	-	-60	3.0 - 3.2	7.8	1,650	1,500 - 1,700	8.00	76	-0.40	62,000	28,500	20
B-110*	85.0	15.0	-	-60	2.9 - 3.1	7.6	1,500	1,500 - 1,600	7.90	76	-1.00	62,000	29,000	20
B-167	80.0	20.0	-	-60	3.1 - 3.3	7.6	1,300	1,500 - 1,700	8.00	80	-1.35	64,000	28,500	20
B-130	70.0	30.0	-	-60	2.8 - 3.0	7.3	1,050	1,500 - 1,650	7.90	88	-2.40	75,000	32,500	19
BRASS (UN-LEADED)										BRASS (UN-LEADED)				
B-174	64.0	34.5	1.5 Pb	-60	2.8 - 3.0	7.25	1,250	1,500 - 1,600	7.80	86	-2.85	65,000	34,000	22
B-115*	68.5	30.0	1.5 Pb	-60	2.9 - 3.1	7.3	1,820	1,400 - 1,600	7.80	81	-1.80	58,000	29,000	180
B-129*	78.5	20.0	1.5 Pb	-60	2.9 - 3.1	7.6	1,680	1,500 - 1,700	8.10	80	-1.55	66,000	30,500	18
B-150*	89.0	9.5	1.5 Pb	-100	2.9 - 3.1	7.9	1,280	1,500 - 1,700	8.10	69	-0.50	56,000	27,000	22
B-161*	89.0	9.5	1.5 Pb	-60	2.9 - 3.1	7.9	1,280	1,500 - 1,700	8.10	69	-0.50	56,000	27,000	22
NICKEL / SILVER										NICKEL / SILVER				
C-300*	64.0	18.0	18.0Ni	-100	3.0 - 3.2	7.5	880	1,600 - 1,800	7.80	88	1.05	62,800	34,000	12
SPECIAL PURPOSE										SPECIAL PURPOSE				
C-140	97.0	3.0	-	-60	3.6 max.	7.9	1,000 min	Premix Cu	-	-	-	-	-	-
C-142	97.0	3.0	-	-140	3.6 max.	7.9	1,000 min	Premix Cu	-	-	-	-	-	-
C-145	97.0	3.0	-	-60	3.3 max.	7.9	2,000 min	Premix Cu	-	-	-	-	-	-
B-413	89.0	2.0	9.0 Sn	-60	3.3 - 3.6	7.4	1,500	1,550	7.80	87	-1.60	78,000	32,000	22
INFILTRATING POWDERS														
C128L	92.0	7.00	1.0 Fe	-60	2.7 - 3.2	7.8	1,000 min	Min. Residue						
XF-2	94.0	1.50	2.0 Fe	-60	3.3 - 3.6	7.6	1,000 min	Non-Residue						
XF-5	92.0	1.50	2.0 Fe	-60	3.3 - 3.8	7.6	1,000 min	Residue Type						

*Produced with consistent quality to meet the rigid requirements for sintered brass compacts covered by MPlF Standard No. 35.

+Transverse rupture bars and tensile bars were compacted according to MPlF standards and sintered in a covered boat in a dissociated ammonia atmosphere with a dew point of -30oF.

General Notes: All sintered properties data shown are those of test compacts briquetted at 30 TSI.

General data related to other briquetting pressures and sintering temperatures are available in graphical form for specific powder grades/Apparent density data shown are for as-atomized, non-lubricated powders; therefore, compensation should be made for the increase of apparent density that normally occurs on blending with lubricants.

PRE-ALLOYED BRONZE POWDERS

Grade	Typical Compositions (%)			Typical Mesh	Apparent Density, (g/cm ³)	Typical Applications
	Cu	Sn	Other			
B-401	90.0	10.0	-	-100	4.3 - 4.8	Bronze Pre-Blends & Plastic Fillers
B-406	90.0	10.0	-	-200	4.2 - 4.5	Plastic Fillers
B-409	90.0	10.0	-	-325	4.2 - 4.5	Plastic Fillers
B-404	93.5	5.0	-	-100	3.7 - 4.2	Plastic Fillers
B-412†				-200	3.5 - 4.0	PTFE Applications
B-414†				-325	3.5 - 4.0	PTFE Applications

†Patented Alloy No. 4,169,730