Chemical characteristics of the most common alloys

Simple brass

Alloy	Main components Cu min.	Cu max.	Zn	Pb	Impurities % (max.) Fe	Sum Others	Applications
CuZn 15	84,5	85,5	rest	0,02	0,02	0,02	Very deep drawing – Gold – Furniture – Jewelry
CuZn 30	69,5	70,5	rest	0,02	0,02	0,02	Very deep drawing – Cups – Electrical connections
CuZn 33	66,5	67,5	rest	0,02	0,02	0,02	Deep drawing – Cutting – Fitted
CuZn 36	63,0	65,5	rest	0,02	0,02	0,02	Printing – Shirt – Cold Deformation

Lead brass

Alloy	Main components Cu min.	Cu max.	Pb min.	Pb max.	Zn	Impurities % (max.) Fe	Sum Others	Applications
CuZn38 Pb2	59,5	62,5	1,0	3,0	rest	0,4	0,8	Pieces with good machinability and small cold forming.
CuZn39 Pb2	57,0	60,0	1,0	3,0	rest	0,6	0,8	Hot forged parts.
CuZn39 PB3	57,0	60,0	1,5	3,5	resto	0,6	0,8	Machined parts. High-speed lathes.

Simple brass

(due to the large dispersion from one manufacturer to another, the values are only indicative)

Denomination	Status	Thicknesses (mm)	Tensile strength (R) N/mm²	Elastic limit 0,2% N/mm²	Minimum elongation %		Hardness				Grain size micras	
							Vickers HV		Brinell HB			
			min.	max.	A5	A10	min.	max.	min.	max.	min.	max.
CuZn38 Pb2												
F41	Hard	–	min. 410	min. 240	23	20	110	140	100	130	–	–
CuZn39 Pb2												
F41	Hard	–	min. 430	min. 270	20	17	120	150	110	140	–	–
CuZn39 PB3												
F43	Hard	–	min. 430	min. 270	20	17	120	150	110	140	–	–

1 N/mm2 = 0,102 kg/mm2

A = Longitudinal elongation, expressed in % of initial length after rupture of the specimen.

Comparative table of the most common alloys

Alloy	Spain UNE	Italy UNÍ	Germany DIN	France AFNOR	United Kingdom BS	E.E.U.U. ASTM	International ISO
CuZn15	CuZn15	P-CuZn15	CuZn 15 2.0240	U-Z15 A. 53603	CZ 102	B36/B134 No. 230	CuZn 15 R 426
CuZn 30	CuZn 30	P-CuZn 30	CuZn 30	U-Z30	CZ 105 CZ 106	B19/B36/B134 No. 260	CuZn 30 R 426
CuZn 33	CuZn 33	P-CuZn 33	CuZn 33	U-Z33 A. 53603	CZ 107	B36/B134 No 268/No 270	CuZn 33 R 426
CuZn 36	CuZn 36	P-CuZn 36	CuZn 36 2.0320	U-Z36 A. 53603	CZ 108	B36/B134 No 272/No 274	CuZn 37 R 426

CuZn38 Pb2	CuZn38Pb2	P-CuZn35 Pb2	CuZn36 Pb1,5 2.0330	U-Z35 Pb2 A. 51105	CZ 119	B453 No. 353	CuZn36 Pb2 R 426
CuZn39 Pb2	CuZn39 Pb2	P-CuZn39 Pb2	CuZn39 Pb2 2.0380	U-Z39 Pb2 A. 51105	CZ 120 CZ 122	B124 No. 377	CuZn39 Pb2 R 426
CuZn39 Pb3	CuZn39 Pb3	P-CuZn40 Pb2	CuZn40 Pb3 20405	U-Z40 Pb3 A. 51105	CZ 121		CuZn39 Pb2 R 426