

OVERVIEW

MEI-59 (Forging Brass) is the most widely used alloy for machining operations with excellent hot working and forging properties (machinability rating 80%). Cold forming is only possible to a limited extent. Ideal for precision mechanical components and screw-machined parts.

CHEMICAL COMPOSITION (wt. %)		ALLOY DESIGNATIONS		COIL / SHEET SPECIFICATIONS	
Element	Composition (%)	Standard	Designation	Specification	Range
Cu	58.00 – 62.00	IS	IS 319	Thickness (mm)	0.04 – 3.0
Pb	1.0 – 2.0	JIS	C3771	Width (mm)	6.00 – 406
Ni	≤0.30	ISO	CuZn39Pb2	Inner Dia. (mm)	100/150/200/300/400/500
Fe	≤0.20	ASTM	C37700	Coil Wt. (kg/mm)	1.0 – 4.0
Zn	Rem.	BS	CZ120	Sheet Length (m)	0.50 – 4.00

MECHANICAL PROPERTIES — typical values at 20°C

Temper	HV	Tensile MPa	Elong. %
1/2 Hard	110–140	≥420	10
Hard	140–165	≥490	5
Extra Hard	165–190	≥525	3

PHYSICAL PROPERTIES — annealed temper at 20°C

Density (g/cm³)	Elec. Conductivity (% IACS)	Thermal Conductivity (W/m·K)	Modulus of Elasticity (GPa)	Specific Heat (J/kg·K)
8.45	24	117	102	377

FABRICATION PROPERTIES

Fabrication Property	Rating	Fabrication Property	Rating
Capacity for Cold Working	Fair	Soft Soldering	Fair
Machinability	Excellent	Resistance Welding	Fair
Electroplating	Excellent	Gas Shielded Arc Welding	Less suitable
Hot Dip Tinning	Excellent	Laser Welding	Fair

CORROSION RESISTANCE

MEI-59 has good resistance to water, water vapor, different saline solutions, many organic liquids, land, sea and industrial atmosphere. Dezincification can occur under certain conditions. Tendency to stress corrosion cracking under stress with amine/ammonia salts; heat treatment can help prevent this.

TYPICAL APPLICATIONS

• Keys and precision lock components	• Precision mechanical components
• Watch and clock parts	• Milled and screw machine parts