

H59 Brass (Chinese Standard)

Overview

H59 brass is a type of ordinary brass alloy defined by the Chinese GB (Guobiao) standard. The 'H' stands for brass (Huang in Chinese), while '59' indicates approximately 59% copper content. H59 is categorized as duplex brass ($\alpha+\beta$ phase) and is one of the most economical brass grades. Despite its affordability, it demonstrates high strength and hardness, making it suitable for a wide range of industrial and decorative applications.

Chemical Composition

Element	Content (%)
Copper (Cu)	57.0 - 60.0
Zinc (Zn)	Balance (40-43)
Lead (Pb)	≤ 0.5
Iron (Fe)	≤ 0.3
Other Impurities	≤ 0.5

Mechanical Properties

- Tensile Strength: ~380 MPa
- Yield Strength: ~120 MPa
- High strength and hardness
- Good hot workability
- Fair cold workability
- Good electrical and thermal conductivity

Physical Characteristics

- Duplex ($\alpha+\beta$) brass structure
- Prone to medium-temperature brittleness (200-700°C)
- Adding trace cerium can eliminate medium temperature brittleness
- Good pressure processing capability in hot state
- General corrosion resistance

Applications

- Machine parts and welding components
- Hot stamping and hot rolling parts
- Electrical appliances and electronics
- Hardware, lighting fixtures, switches

- Battery contact pieces
- Decorative items: necklaces, bracelets, rings, watch straps
- Radiator parts, conduits, barometers

International Equivalents

- EN: CuZn40
- JIS: C2800
- ASTM: C28000
- Similar to Japanese C3604 brass rod