C314 Brass - C31400 (Leaded Commercial Bronze)

Overview

C314 Brass, also known as Leaded Commercial Bronze (C31400), combines the natural corrosion resistance of C22000 with the machinability typical of leaded brasses. It is an alpha brass nominally composed of 89% copper, 9% zinc, and approximately 2% lead to impart free-cutting characteristics. The relatively low zinc content provides excellent corrosion resistance in potable water applications.

Chemical Composition

Element	Content (%)
Copper (Cu)	87.5 - 90.5
Zinc (Zn)	8.0 - 11.0
Lead (Pb)	1.3 - 2.5
Iron (Fe)	≤ 0.10

Key Properties

- Machinability Rating: 80%
- Superior electrical and thermal conductivity
- Excellent corrosion resistance in potable water
- Resistance to stress corrosion cracking
- Pleasing golden color matching C22000 hardware
- Good cold working capacity
- Poor hot forming capacity

Fabrication

- Annealing temperature: 427-649°C (800-1200°F)
- Suitable for brazing, butt welding, and soldering
- Most welding processes not recommended

Applications

- Door knobs and builders hardware
- Electrical connectors for wire and cable
- Electrical plug-type connectors
- Fasteners: nuts and screws
- Pickling equipment: crates, fixtures, racks

- Screw machine parts
- Pole line hardware

Standards

- UNS: C31400
- ASTM: B140/B140M
- ISO: CuZn9Pb2