

Technical Data Sheet

TON 20



Chemical Composition

Aluminum	Iron	Copper
10.8 %	3.5 %	Rem.

Note: Cu + Sum of Named Elements, 99.5% min.

Matters Needing Attention

Toughness decreases seriously if material is heated for long time at 370-565°C (700-1050°F). TON 20 should not be used for oxidizing acids conditions.

Mechanical and Physical Properties

Properties ⁽¹⁾	Metric	US Customary
Brinell Hardness	190 HB	190 HB
Tensile Strength	720 MPa	104 ksi
Yield Strength ⁽²⁾	320 MPa	46 ksi
Elongation	12 %	12 %
Density	7.45 g/cm ³	0.269 lb/in ³
Electrical Conductivity	12 %IACS	7 Ms/m
Thermal Conductivity	58 W/m·K	33.5 Btu/hr·ft·°F
Coefficient of ⁽³⁾ Thermal Expansion	16.2x10 ⁻⁶ /°C	9.0x10 ⁻⁶ /°F

(1) Typical values measured at room temperature, 20°C (68°F), unless otherwise stated.

(2) Offset yield strength set at 0.2% strain.

(3) Typical value measured at 20-300°C (68-572°F).

Material properties

High Strength, Good Ductility and Toughness, Excellent Corrosion Resistance and Wear Resistance.

Typical Uses

Injection Mold: Guide Bushings, Wear Plates, Slides, Side cores
Stamping Die: Slides, Bushings
Tube Bending: Wiper Dies
Steel Industry: Pressure Blocks, Large Hold Down Screws
Other: Valve Guides, Valve Seats, Valve Bodies, Valve Balls
Hydraulic Bushings
Pickling Hooks
Cams, Gears, Worm Gears
Support Bushings, Wear Plates
Nuts, Bolts, Tie Rods

Fabrication Properties

Machinability Rating: 50% (Free-Cutting Brass, C36000 is defined as 100%). Both high strength tool steel cutting tool and cemented carbide cutting tool can be used for various machining.

Forgeability Rating: 80% (Forging Brass, C37700 is defined as 100%).

Workability: Capacity for Being Hot Formed (Good), Capacity for Being Cold Worked (Poor).

Welding Suitability: Gas Shielded Arc Welding (Good), Brazing (Fair), Soldering (Not Recommended),

Oxyacetylene Welding (Not Recommended).