Technical Data Sheet

TON 40

Chemical Composition

Aluminum	Iron	Manganese	Cobalt	Copper
15.0 %	5.3 %	≤2.0 %	≤2.0 %	Rem.

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

Matters Needing Attention

Due to its very low toughness and impact resistance, TON 40 is not suitable for structural parts or other applications that vibration load or high stress is involved. Appropriate measures should be taken for various machining to avoid possible brittle failures.

Mechanical and Physical Properties

Properties (1)	Metric	US Customary
Brinell Hardness	370 HB	370 HB
Compressive Strength	1540 MPa	223 ksi
Yield Strength(2)	714 MPa	104 ksi
Elongation	0.2 %	0.2 %
Density	6.93 g/cm^3	0.250 lb/in^3
Electrical Conductivity	8 %IACS	4.6 Ms/m
Thermal Conductivity	34 W/m·K	19.6 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) Compressive yield strength set at 0.1% strain.

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

Material properties

Extremely High Hardness, Excellent Compressive Strength, Anti-Friction, Galling Resistance, Excellent Wear Resistance, Good Corrosion Resistance

Typical Uses

Blank Holders, Dies and Punches used for Stainless Steel Deep Drawing.

Forming Rolls used for Stainless Steel, Titanium Welded Tube Forming.

Fabrication Properties

Machinability Rating: ≤20% (Free-Cutting Brass, C36000 is defined as 100%). Cemented carbide cutting tool should be used for various machining.

Workability: Capacity for Being Hot Formed (Fair), Capacity for Being Cold Worked (Not Recommended).

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