

NICKEL ALUMINUM BRONZE (C63020)

TYPICAL USES

C63020 AMS 4590 Nickel Aluminum Bronze is an extra high strength nickel aluminum bronze alloy. This alloy is heat treated and martensitic. C63020 is the strongest in the Nickel Aluminum Bronze family and sometimes can be a substitute for Beryllium Copper. Originally developed for aircraft components in retractable landing assemblies, this alloy is ideal for applications involving very heavy loads, extreme abrasive wear, corrosion service, friction, deformation, and high temperatures.



CONTACT US

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TYPICAL USES

Product Category	Product	Reason
Industrial	Bearings	Corrosion Resistance, Resistant to Abrasive Wear, Resistant to Adhesive Wear Toughness, Heavy Load Strength
	Bushings	Corrosion Resistance, Heavy Load Strength, Resistance to Abrasive Wear, Resistance to Adhesive Wear
	Forming Dies for Roll Bearings	Heavy Duty, High Mechanical Loading, High Strength
	Hydraulic Bushings for Earth Moving Equipment	Corrosion Resistance, Resistant to Abrasive Wear, Impact Resistant, High Strength
	Valve Balls	Cavitation Corrosion Resistance, Erosion Corrosion Resistance, Pitting Corrosion Resistance, Resistance to Corrosion by a broad variety of Corrosive Media, Retains Surface Finish, Wear Resistance
	Valve Parts - Cryogenic	Corrosion Resistance, High Strength

CHEMICAL PROPERTIES

Elements										
	Cu(1,2)	Pb	Sn	Zn	Fe	Ni(3)	Al	Co	Cr	Mn
Min (%)	74.5				4.0	4.2	10.0			
Max (%)		0.03	0.25	0.30	5.5	6.0	11.0	0.20	0.05	1.5

(1) Cu + Sum of Named Elements 99.5% min.(2) Cu value includes Ag.(3) Ni value includes Co.

FABRICATION PROPERTIES

Machining Technique	Suitability
Soldering	Not Recommended
Brazing	Fair
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Good
Coated Metal Arc Welding	Good
Spot Weld	Good
Seam Weld	Good
Butt Weld	Good
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Good
Forgeability Rating	75
Machinability Rating	30

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