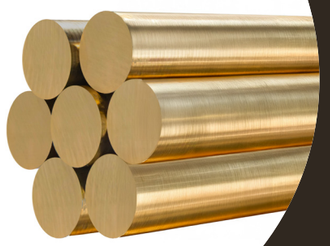
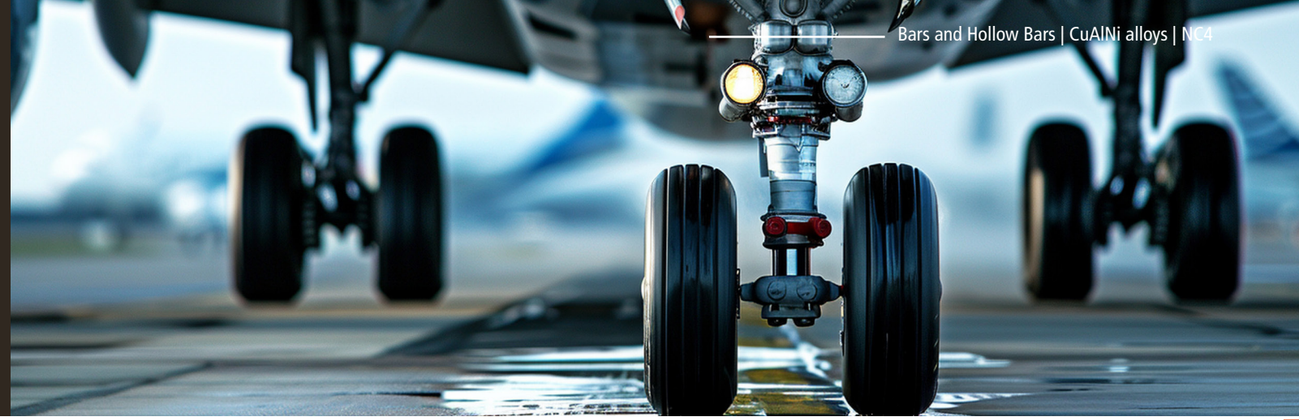


NC4

$CuAl_{10}Ni_5Fe_4$

29 63.546	13 26.981	28 58.6934	26 55.845
Cu copper	Al aluminum	Ni nickel	Fe iron

NC4 is a nickel-aluminum-bronze ($CuAl_{10}Ni_5Fe_4$) alloy designed for Aerospace and Marine applications. It offers a good combination of properties, such as high hardness, tensile strengh and corrosion resistance (sea-water, saline mist, and oxidation).



Bars and Hollow Bars | CuAlNi alloys | NC4

MATERIAL DESIGNATION

ISO	UNS	Other designations	Aerospace specifications	Other standards
CuAl10Ni5Fe4	C63000	CW307G 2.0966	AMS 4640 NFL 14-705	ASTM B124, ASTM B150 ASTM B171, NFA 51 116 EN 12420, EN 12163 EN 12165, EN 12167

CHEMICAL COMPOSITION (WEIGHT%)

Cu	Al	Ni	Fe	Mn
Balance	10%	5%	4%	0.5%

PHYSICAL PROPERTIES

General properties		
Density at 20 °C (68 °F)	7.6 g/cm³	0.25 lb/in³
Thermal conductivity	40 W/m.°C	23 BTU/(h.ft.°F)
Coefficient of thermal expansion from 20 to 300 °C (68 °C to 572 °F)	16 x 10^{-6}/°C	8.89 µin/in °F
Young's modulus	125 GPa	18 130 ksi
Relative magnetic permeability	1.5	
Electrical properties		
Resistivity at 20 °C (68 °F)	22 µΩ.cm	132.34 Ω. circ mil/ft
Electrical conductivity	8 %IACS	

TYPICAL APPLICATIONS

Aerospace industry

Rings

Bushings and bearings for landing gears

Marine and Defence industries

Distributor bodies

Screws

Forged parts

COMPATIBLE DOWNSTREAM PROCESS

Extrusion, forging, or die stamping

Hot forming

Arc, MIG and TIG welding

Machinability index: 30% of free-cutting brass

KEY FEATURES

Suitable mechanical properties

Sea-water corrosion resistant

Saline mist resistant

Oxidation resistant

MECHANICAL PROPERTIES

Size	Temper	Yield Strength 0.5% E.U.L MPa (ksi)	Tensile Strength MPa (ksi)	Elongation (%)	Hardness (HB)
For other dimensions and shapes, mechanical properties on demand					
Bars					
9.5 ≤ Ø ≤ 25.4 mm (0.375 ≤ Ø ≤ 1 in.)	HR50	≥ 469 (≥ 68)	≥ 760 (≥ 110)	≥ 10	201 - 248
25.4 < Ø ≤ 50.8 mm (1 < Ø ≤ 2 in.)	HR50	≥ 413 (≥ 60)	≥ 760 (≥ 110)	≥ 10	201 - 248
50.8 < Ø ≤ 76.2 mm (2 < Ø ≤ 3 in.)	HR50	≥ 379 (≥ 55)	≥ 723 (≥ 105)	≥ 10	187 - 241
76.2 < Ø ≤ 254 mm (3 < Ø ≤ 10 in.)	HR50, TQ50	≥ 345 (≥ 50)	≥ 689 (≥ 100)	≥ 10	187 - 241
9.5 ≤ Ø ≤ 280 mm (0.375 ≤ Ø ≤ 11 in.)	M	≥ 320* (≥ 46)*	≥ 690 (≥ 100)	≥ 13	≥ 180
Hollow bars					
OD ≥ 50 mm (OD ≥ 2 in.) Thickness ≥ 10 mm (≥ 0.4 in.)	HR50, TQ50	≥ 345 (≥ 50)	≥ 689 (≥ 100)	≥ 10	≥ 190
50 ≤ OD ≤ 280 mm (2 ≤ OD ≤ 11 in.)	M	≥ 320* (≥ 46)*	≥ 690 (≥ 100)	≥ 13	≥ 180

**0.2% offset*

OTHER AVAILABLE FORMS

Plates, billets, strips, sheets, rods, wires, standard & complex profiles, machined blanks and parts

Disclaimer : Data for information only, non-contractual / Dimensions outside these ranges on request