



CuAl10Ni5Fe4-C

Nickel-Aluminum Bronze

Brand Name

CUPRAL 4

Standardization:

DIN EN 1982 / CC333G / C6301

ALLOY DESCRIPTION

CuAl10Ni5Fe4-C is the highest performance alloy of the KUPRAL series. Thanks to its special structure with nickel and iron additives, it offers superior mechanical strength, wear resistance and corrosion resistance. It provides exceptional resistance to destructive effects such as cavitation, erosion and chemical corrosion. It operates safely under high pressure and heavy load in the most challenging conditions of sea water and aggressive environments. It is designed for critical applications in the maritime, defense, aviation and energy sectors.

CHEMICAL COMPOSITION (% WEIGHT)

Cu (%)	Al (%)	Ni (%)	Fe (%)	Mn (%)	Zn (%)
Remainder	9.0-11.0	4.0-6.0	3.0-5.0	max. 1.5	max. 0.5

MECHANICAL PROPERTIES (MIN.)

Tensile Strength (R_m)	min. 640 [N/mm²]
Yield Strength ($R_{p0.2}$)	min. 270 [N/mm²]
Elongation (A_5)	min. 12 [%]
Hardness (HBW)	min. 180 [HB]

PHYSICAL PROPERTIES

Density	7.50 [kg/dm³]
Melting Temperature	1010 – 1060 [°C]
Elk. Conductivity	5 – 7 [MS/m]
Elasticity Modulus	125 [kN/mm²]

CASTING METHODS

GS	sand casting
GM	Permanent mold casting
GZ	Centrifugal casting
GC	continuous casting

AREAS OF APPLICATION

Ship Propeller and Marine Equipment

Heavy Load Bearing and Bushing Systems

Pump and Valve Components

Gear and Worm Screw Mechanisms

Aviation Landing Gear Parts

MACHINABILITY & CHARACTERISTICS

The addition of nickel stabilizes the microstructure, providing excellent mechanical properties both at room temperature and at high temperatures. It offers the highest level of resistance of the series against the combination of cavitation and erosion-corrosion. It works safely for many years in the most critical applications of the offshore, maritime, defense and energy sectors. Its machinability is moderate; The use of hard carbide tools and ample cooling is recommended.

The technical information specified in this document reflects the standard reference values of international EN and DIN norms. Deviations may be observed depending on final production conditions.

CORUM BRONZE

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