



CuAl10Fe5Ni5-C

Aluminum Bronze

Brand Name

CUPRAL 5

Standardization:

DIN EN 1982 / CC335G / C95800

ALLOY DESCRIPTION

CuAl10Fe5Ni5-C is an alloy belonging to the highest performance class of aluminum bronzes, strengthened with iron and nickel additives. The addition of nickel stabilizes the microstructure, providing excellent mechanical properties both at high temperatures and under dynamic loads. This alloy, which has extraordinary resistance to destructive corrosion types such as pitting, fretting corrosion and erosion, is a favorite in critical sectors such as maritime, petrochemical and defense industries.

CHEMICAL COMPOSITION (% WEIGHT)

Cu (%)	Al (%)	Fe (%)	Ni (%)	Mn (%)	Zn (%)
Remainder	8.5-11.0	4.0-6.0	4.0-6.0	max. 1.5	max. 0.5

MECHANICAL PROPERTIES (MIN.)

Tensile Strength (R_m)	650 - 750 [N/mm²]
Yield Strength ($R_{p0.2}$)	280 - 380 [N/mm²]
Elongation (A_5)	min. 10 - 15 [%]
Hardness (HBW)	min. 160 - 190 [HB]

PHYSICAL PROPERTIES

Density	7.60 [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

Sea Water Pump Parts

Ship Propeller and Axles

High Pressure Valve Bodies

Petrochemical Equipment

Defense Industry Components

MACHINABILITY & CHARACTERISTICS

Offering the highest mechanical properties among nickel aluminum bronzes, this alloy stands out with its superior performance especially against the erosion-corrosion combination. Thanks to its high temperature resistance and excellent fatigue strength, it is a reliable material under continuous operating conditions. Its machinability is moderate; The use of hard cutting tools and adequate 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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