



lebronze alloys



Lebronze alloys' offer of rods
in specialty alloys

Trade name	ISO/DIN material definition	Other material definition	Key properties	Typical applications
Leaded brass				
58H	CuZn40Pb2	C38000 CW617N	Excellent machinability and hot deformation	Machined parts, general use
58D	CuZn39Pb3	C38500 CW614N	Free machining material for general use, good for turning, drilling and milling	Small mechanical components, electrical industry, writing implements
60M	CuZn38Pb2	C37700 CW608N	Good combination of machinability and cold formability	Any parts made by a combination of machining and a light cold deformation
60AM	CuZn38Pb2	C35300 CW608N	Optimal combination of machinability, cold formability and mechanical properties, plus good hot working properties. Suited for bending, riveting and upsetting. This version is amagnetic	
61D	CuZn36Pb3	C36000 CW603N	Free machining material with satisfactory cold formability, and good hot working properties	
62B	CuZn36Pb1	C35300 CW600N	Recommended for crimping	Connectors
Unleaded brass				
EnviB10	CuZn40	C28000 CW509L	Pb content <1000 ppm, excellent hot formability, good cold formability, good machinability	Machined parts for optical and electronic industry, RoHS compliant
EnviB58	CuZn42	CW510L	Pb content <1000 ppm, excellent hot formability, good machinability	
EnviB1	CuZn40	Proprietary	Pb content <90 ppm, excellent hot formability, good cold formability, good machinability	Machined parts for optical and electronic industry, CPSIA compliant
EnviB158	CuZn42	Proprietary	Pb content <90 ppm, excellent hot formability, good machinability	Parts for optical and electronic industry, CPSIA compliant
E60F	CuZn40	C28000 CW509L	Pb content <90 ppm, good hot formability, fair cold workability, fair machinability, good for welding and brazing	Forged parts, structural parts
E63F5	CuZn36	C27200 CW507L	High purity brass with excellent cold formability and crimpability	Fasteners (screws and rivets), zip fasteners, jewellery industry, arts and crafts
E85	CuZn15	C23000 C23400 CW502L	Excellent cold formability and crimpability, golden color	Cold headed parts, electrical components, electronic industry, jewellery, arts and crafts
E95	CuZn5	C21000 CW500L	Excellent cold formability and crimpability	Electrical industry, jewellery and watch industries, arts and crafts, plating and enameling applications, cold formed parts
Nickel-silver and Nickel alloys				
NM2	CuNi7Zn39Pb3Mn2	CW400J	Excellent machinability and hot deformation, high mechanical properties, grey, slightly yellow color	Ball point pen tips, precision machined parts for the electrical, optical and watch industries
NM6	CuNi12Zn37Mn6Pb2	C79860 CW407J	Combination of high strength with good cold forming properties and machinability	Ball point pen tips, precision machined parts for the electrical, optical and watch industries
NM436	CuNi11Zn38Mn6Pb2	Proprietary	LBA's specific formulation for demanding applications	Ball point pen tips, precision machined parts for the electrical, optical and watch industries
NICLAL 1800	CuNi18Zn19Pb1	C76300 CW408J	Great free machining ability, corrosion resistance, cold formability, strong mechanical characteristics, ability to withstand high temperatures (welding, brazing), grey color	Parts subject to high stress, high quality fasteners, spectacle frames and hinges, jewellery
NICLAL 1200	CuNi12Zn26Pb1	C79200 CW404J	Good formability, corrosion resistance and tarnish-resistance, nice silvery color	Lock pins, music instruments precision parts, medical equipment, jewellery
EnviN1	CuNi12Mn5	Proprietary	Pb content < 90 ppm, good hot formability, fair cold workability, good machinability, strong mechanical characteristics	Components of writing instruments, fiber optic connectors, high safety locks, eyewear
NICLAL 180	CuNi18Zn20	C76400 CW409J	Good resistance to corrosion in organic, marine and alkaline environments, excellent cold formability, limited hot formability, silvery color	Connectors, relay springs, spectacle frames, watch components
NICLAL 400	Ni65Cu32MnFe1,5	Astm B164 n°4400	Good resistance to chemical corrosion	Parts in contact with chemical reactions involving chlorine or fluorine
NICKEL 201	Ni99 LC	Astm B162 n°2201		

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Specialty / high resistance brasses and bronzes				
SMBKM	CuZn35Ni3Mn2AlPb	CW710R	Good chemical, atmospheric & marine corrosion resistance	Machines, marine equipment
SM58	CuZn37Mn3Al2PbSi	CW713R	Silicon enhances wear and tear resistance.	Gearbox parts, bearings, cylinders, valve and shift guides, pump parts.
LBU	CuZn39Pb2	C37700 CW612N	Leaded brass with specific control of metallurgical quality	Applications with specific quality control requirements
ZA9 HT31	CuZn19Al6	NFL14707	Wrought beta brass aerospace alloy, with high mechanical properties, good anti-friction properties, resistance to oxidation	Rings (friction-guidance) for landing gears
HT37		C67300	Free machining brass containing manganese and silicon to enhance wear resistance. The alloy is used in applications requiring good wear resistance properties, typically in the automotive and hydraulic industries	Bearing applications, bushings, gears, valve guides, shaft and cylinder guides, speed reducer gears, axial piston pump components
MB5		C67500	American manganese bronze alloy with moderate strength coupled with good corrosion resistance	Automotive: Clutch discs, pump rods and shafting. Marine: Valve stems and bodies, shafting, general hardware. General engineering: Fasteners, hydraulic parts
High strength high conductivity copper alloys				
CRM16	CuCr1Zr	C18150 CW106C	High conductivity, good cold formability, weldable by electron beam	Welding consumables and parts, parts of electric asynchronous engines, connectors
Zr16X	CuZr	C15000 CW120C	Transformable by forging or extrusion and drawing, suitable for hot and cold working, suitable for hard and soft brazing	Welding consumables
CRM15	CuCr1	C18200 CW105C	High conductivity, good mechanical properties, high cold formability (bending, punching, drawing), weldable by electron beam, good annealing properties	Welding consumables and parts, parts for electric asynchronous motors, connectors
CuNiSi, Silicon bronze				
NS5	CuNi2Si	C18000 C64700 CW111C	High mechanical properties, good electrical and thermic conductivity, good friction properties	Railway catenary parts (die-forged and machined), bearings, parts for electric asynchronous motors, plunger tips for metal injection
NS6	CuNi3Si	C18000 C64700 CW111C	High mechanical properties, very good electrical and thermic conductivity, suited for extrusion, forging or die stamping, cold forming in quenched condition	Plunger tips for die casting machines, parts for resistance welding, inserts for plastic injection moulds
Siclanic S	CuNi3Si	C18000 C64700 CW111C	High mechanical properties, good electrical and thermal conductivity, good friction properties, strong wearing and corrosion resistance	Connectors, railway catenary parts (die-forged and machined), bearings
Si45Z X226	CuSi3Fe2Zn3	C65620, AMS4616	Good anti-friction properties, suitable for cold forming, suitable for welding, suitable for hard and soft brazing	Bearing cages, rotor bars for engines, valve guides
Low Be copper alloys, and substitutes to CuBe				
CB4	CuCo2Be	C17500 CW104C	Very strong mechanical properties, good electrical properties, good anti-friction properties	Plungers for die casting, resistance welding of thick plates or stainless steel, heads of pistons for diesel engine, dies for continuous casting ingot short circuit rings for squirrel cage motors
NB4	CuNi2Be	C17510 CW110C		
Declafor 1015	CuNi7.5Sn5Te	Proprietary	Very strong mechanical properties, very good machinability, good electrical properties, ecological: Be-free and Pb-free	Connectors, precision mechanical & electrical parts
Hardial®	CuNi15Sn8	C72900 AMS4596 AMS4597	Very strong mechanical properties, excellent machinability, corrosion resistance, non-magnetic, ecological: Be-free and Pb-free	Aerospace and Oil & Gas parts operating under extreme conditions

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Copper-nickel / CuNi				
Navinic 30	CuNi30Mn1Fe	C71500 CW354H	Strong mechanical properties, weldable, sea-water corrosion resistant, saline mist resistant	Technical parts in contact with sea water
Navinic 10	CuNi10Fe1Mn	C70600 CW352H	Strong mechanical properties, weldable, sea-water corrosion resistant, saline mist resistant	Technical parts in contact with sea water
K5 X316	CuNi14Al3 CuNi14Al2	NFL14702	Very high mechanical properties, very good resistance to sea-water corrosion and to oxidation, good impact and fatigue resistance, no sparks on impact, strictly amagnetic	Parts for marine industry, aerospace industry and electrical industry
K7 X313	CuNi14Al3Fe1	2.1504	Very high mechanical properties, very good resistance to sea-water corrosion and to oxidation, good impact and fatigue resistance, no sparks on impact, strictly amagnetic	Parts for marine industry, aerospace industry and electrical industry
Constantan ARCAP AP4	Cu53.5Ni45	Proprietary	Very high mechanical properties and corrosion resistance, suitable for cryogenic applications, strictly amagnetic, machinable	Mechanical parts in very demanding environments
Wrought aluminium bronze / CuAl				
NC4 CA18	CuAl10Ni5Fe4	C63000 C63200 CW307G AMS4640	Suitable mechanical properties, sea-water corrosion resistant, saline mist resistant, oxidation resistant	Aerospace industry: rings, bushings and bearings for landing gears Marine industry: distributor bodies, screws, forged parts
NC2 CA21	CuAl9Ni5Fe4	C63000 C63200 CW307G NES833	Suitable mechanical properties, sea-water corrosion resistant, saline mist resistant, oxidation resistant	Marine industry: exchanger plates, fast evacuation pipes, slippers for hydraulic pump, marine trees, screws, forged parts
CA104 CA1	CuAl10Ni5Fe4	BSB23 DTD197A	Suitable mechanical properties, sea-water and saline mist corrosion resistant, oxidation resistant	Aerospace industry: rings, bushings and bearings for landing gears Marine industry: distributor bodies, screws, forged parts
NCS CA2 AMS4590	CuAl11Ni5Fe5	C63020 CW308G AMS4590	High mechanical properties, oxidation resistant, saline mist corrosion resistant	Aerospace industry: rings, bushings and bearings for landing gears, mechanical parts Hydraulic industry: pump blocks
CA10	CuAl7Si2	C64200 AMS4631C AMS4634 CW302G	Silicon aluminium bronze alloy with good corrosion resistance and machining properties coupled with low magnetic permeability	Cryogenic fittings, electrical connectors, rods and couplings, food industry, bolts, valves.
Cast aluminum bronze / CuAl				
NC4 AB28	CuAl10Ni5Fe4	C95510 AMS4880	Suitable mechanical properties, sea-water corrosion resistant, saline mist resistant, oxidation resistant	Aerospace industry: rings, bushings and bearings for landing gears
NCS AB29	CuAl11Ni5Fe5	C95520 AMS4881	High mechanical properties, oxidation resistant, saline mist corrosion resistant	Aerospace industry: rings, bushings and bearings for landing gears
Phosphor bronze				
PB20	CuSn5	PB102	Copper-tin-phosphorus alloy containing 5% tin and a small amount of phosphorus. Cold worked condition, moderate strength combined with good bearing and corrosion resistant properties	Offshore & Marine: hardware & fasteners. Power: electrical springs and contacts. Other: pump & valve spindles, fasteners, sleeve bushings, springs, shafts, flanges, architectural and decorative components, lock washers, spring washers and masonry fixings
Specialty free machining (Decolletage) and connector material *				
C97(C98)	CuNiPb1P	C19160 (C19140)	Free machining heat-treated leaded nickel copper, high mechanical strength and electrical conductivity	Connectors, spring contacts
C99	CuPb1P/B	C18700 CW113C	Free machining copper with high electrical conductivity	Electrical and electronic contacts, screws, for high performance relaxation
BZ4 GM44	CuSn4Pb4Zn4	C54400 CW456K AMS4520	Free machining bronze with good cold formability	Screws, springs, wire cloth, plug connections, shafts, thrust washers and valve parts
BP5	CuSn5Pb1	C53400 CW458K	Free machining bronze with good cold formability	Screws, bolts, nuts, plug pins, conductors for high electrical loading, wire cloth
ARCAP AP1D	CuNi24Zn15Pb1	Proprietary C76390	High mechanical properties, amagnetic, corrosion resistant	High performance precision mechanical parts, high end screws, optical fibre connectors

* many of our other alloys, like leaded brass, are suitable for free machining and can be used in connector applications.
All trade names are registered by Lebronze alloys.

An unmatched range of high performance materials

This brochure gives a first glimpse on the range of materials that Lebronze alloys elaborates in rounds, profiles and hollow rods.

Our alloys come in commercially standard dimensions and metallurgical tempers.

LBA markets products comply with the norms relevant for your applications. Additionally, LBA products can match specific or more stringent requirements, for instance regarding the chemical composition, the grain structure, the UT testing, or certain specific customer specifications.

Many of the alloys presented here are also available as wire, strips, plates and blanks.

For a complete list of our more than 300 alloys, please see our other brochures or contact your Lebronze alloys representative : you'll find the one that meets your requirements.

The Group's commitment is to find appropriate and optimized solutions for every sector's requirements.

UT Capabilities:

SNT and PCN Level 2 Ultrasonic Engineers
Def Standard 02-729 Part 5
BAE System Marine 02/05
T9074-As-GIB-010/271
SAE AMS STD 2154A Class A, B or C
API 6A PSL3
Aker PS-101 10000096483-PDC-000
Sub-contract manual or immersion testing

DPI Capabilities:

Sub-contract colour contrast or fluorescent DPI

Approvals:

AS 9100 rev D
ISO 9001:2015
Airbus
Agusta Westland
BAE Systems Marine
BAE Systems (MAI)
Bombardier EMCM-001
Boeing (Long Beach) DMS 2201
Federal Supply Code – NCage K0029
Hawker Beechcraft
Naval Group
Rolls-Royce (Aerospace)
Safran
Spirit Aerosystems
Triumph Actuation Systems
Voest Alpine

**Do you want to know more,
talk about a project with us or make a request?**

contact@lebronze-alloys.com
www.lebronze-alloys.com

Group Sales Director: J.Furstoss
jfurstoss@lebronze-alloys.com

High performance bars & specials Director of Sales: C. de Laforcade
cdelaforcade@lebronze-alloys.com

Rods & wire Director of Sales: M. Urbas
m.urbas@lebronze-alloys.de

Uba

lebronze alloys

Lebronze alloys Group was born from the integration of different companies specializing in development and production of technical high performance alloys components : copper alloys, nickel alloys, but also aluminium alloys, specialty steels, stainless steels, titanium and nickel superalloys.

Thanks to a multidisciplinary know-how, the Group provides innovative solutions to all major industries such as Aerospace, Power, E-mobility, Oil & Gas, Railway but also in sectors manufacturing smaller equipment and products.

Our 14 production facilities and 1,300 employees manage a unique range of metal processing technologies: continuous and semi-continuous casting, sand casting, die precision chill casting, centrifugal casting, extrusion, ring rolling, hot and cold rolling, drawing, open-die forging, hot stamping, closed-die forging, cold forming, machining, non-destructive testing, etc.

The Group's commitment is to find appropriate and optimized solutions for every sector's requirements.



LT Lebronze Tuffaloy
North America

● Greer, SC

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- Bornel
- Breteuil
- Custines
- Dangu
- Sélestat
- Suippes
- Taverny
- Pescheria Borromeo (IT)

Uba
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- Lüdenscheid
- Siegen

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- Wolverhampton
- Ipswich

SWLI

● Xi'an, China

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- Rydzyna

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- Dongguan
- Suzhou