

K7

High Strength Copper Nickel Aluminum Alloys



lebronze alloys

Aerospace Applications

K7 is a wrought copper nickel aluminum alloy **CuNi14Al3Fe1** designed for high strength and high reliability applications. It is non-magnetic and resists mechanical wear, galling and marine corrosion.

It is easily machined into complex components whilst being **environmentally friendly being both lead and beryllium free**.

K7 is used within the aerospace industry thanks to its **outstanding physical and mechanical properties in many varied components**.

Lebronze alloys has developed a full range of Copper Nickel Aluminum matching the Aerospace industry stringent requirements.

K7 Properties and Benefits

K7 Key Features & Benefits

- High mechanical properties
- High ductility
- Outstanding resistance to corrosion & erosion
- Excellent wear and galling resistance
- Good machinability
- Good thermal properties
- Good impact resistance
- No sparks on impact
- Strictly non-magnetic
- Stable performance at both elevated and sub-zero temperatures -193 °F up to 572°F
- Dimensional stability

Lebronze Alloys manufacturing process for K7 is fully integrated: internal processes include casting, hot and cold working, heat treatment and non-destructive testing. Being fully integrated ensures reactivity and complete traceability.

K7 manufacturing is qualified within the quality system of most rigorous aerospace companies: high level of quality controls and supply chain reliability.

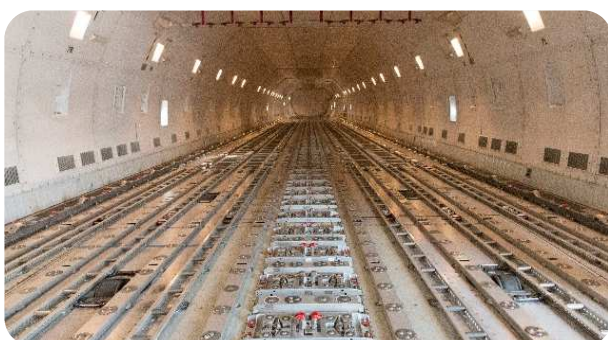
K7 Physical Properties

Electrical Conductivity at 68°F (20°C)	10	% IACS
Thermal Conductivity at 68°F to 392°F (20°C to 200 °C)	41 (71)	Btu/sq ft hr/°F (W/m°C)
Coefficient of Thermal Expansion at 68°F to 392°F (20°C to 200 °C)	16.1x10 ⁻⁶ (16 x10 ⁻⁶)	Per °F (Per °C)
Density	0.322 (8.5)	lb/in ³ (g/cm ³)

K7 Key Applications in Aerospace

K7 is mainly used in Aerospace, in heavily stressed airframe components.

K7 demonstrates an outstanding resistance to metal-to-metal wear, thus **being suited for landing gear bushings and bearing bushings**.



K7 is also used in many other systems, such as **cargo system bushings, plane doors, actuating sleeves, control surface components**, on many mechanical and electromechanical components.

Its **wear, corrosion, temperature and pressure resistance** allow K7 to be ideal for the manufacturing of long-lasting parts with optimized TCO.

K7 other Applications

K7 is also be used on **helicopters, for flap systems and bushings.**

Its characteristics **allow K7 to be used without any, or with limited lubrication.**



K7 Products Portfolio

K7 is manufactured according to LN 9468 and WL 2.1504.
All products can be ultrasonic tested at LBA upon customer request.

The following table indicates K7 products available for the Aerospace industry.

K7 Mechanical Properties						
LBA	Minimum Yield Strength	Minimum UTS	Minimum Elongation	Minimum Hardness	Available forms	Available sizes
Designation	0.2% offset		5.65 $\sqrt{S_0}$			Inches (mm)
	Ksi (MPa)	Ksi (MPa)	(%)	(HB)		
K7	93 (640)	113 (780)	10	≥ 230	Rounds, Discs, Rings, Forged Blanks, Machined parts	0.60" (15.00) < \varnothing \leq 2.00" (50.00)
K7	86 (590)	113 (780)	10	≥ 225	Rounds, Discs, Rings, Forged Blanks, Machined parts	$\varnothing > 2.00"$ (50.00)

*Measurements made in laboratory conditions. Non contractual.
Please note: all information contained in this document is for guidance only.*

Lebronze alloys was born from the integration of companies specialized in the production of copper alloys, copper, nickel alloys, aluminum, special steel, stainless steel, titanium and super alloys.

Thanks to its multidisciplinary know-how, the Group provides innovative solutions to all major industries such as Aerospace, Oil & Gas, Energy, Off-highway Mining and Railways, but is also present in sectors that manufacture personal equipment.

Our 14 production sites and 1,300 employees master a unique range of metal processing technologies: continuous and semi-continuous casting, sand casting, chill casting (manual, mechanized, robotic), centrifugal casting, extrusion, ring rolling, hot and cold rolling, drawing, free forging, forging, die stamping, stamping, heat treatment, cold stamping, machining, non-destructive tests, etc.

Offering a solution that is suited and optimized to the needs of each industry is our Group's commitment.