

PRODUCT
CATALOG
Strips & Sheets

24

Uba
lebronze alloys



About Lebronze alloys

Lebronze alloys is a world leader in the **development** and **fully integrated production** of **high-performance copper and nickel alloys**.

Thanks to a multidisciplinary know-how, the Group provides **innovative solutions to all major industries** such as Aeronautics, Electronics, Space, Automotive, Energy, among others.

Our 6 production facilities and 750 employees manage a **unique range of metal processing technologies**: continuous and semi-continuous casting, extrusion, 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 while optimizing the environmental impact of our products**.

High
performance
copper and nickel
alloys

Fully
integrated
production
process

Optimized
environmental
impact of our
products

KEY FIGURES

- 6 production sites
- 3 service centers
- 750 employees
- 200 + alloys produced
- 288 M€ turnover

History of the Group

2006

The DUMONT family, some private investors as well as some key managers, take over "Le Bronze Industriel", a company founded in France in 1934 specializing in copper alloys production. This change of ownerships, with Michel DUMONT as active Chairman, marked a new period of strategic growth for the company.

2012-2016

Period of massive external growth for the company. Several major acquisitions are made such as Inoforges, Swissmetal Lüdenscheid and CLAL. These acquisitions consolidated our metallurgical expertise through a sharing of experience.

2016

Le Bronze Industriel officially becomes Lebronze alloys. It has been 10 years since the buyout and the Group has now tripled its sales.

2020

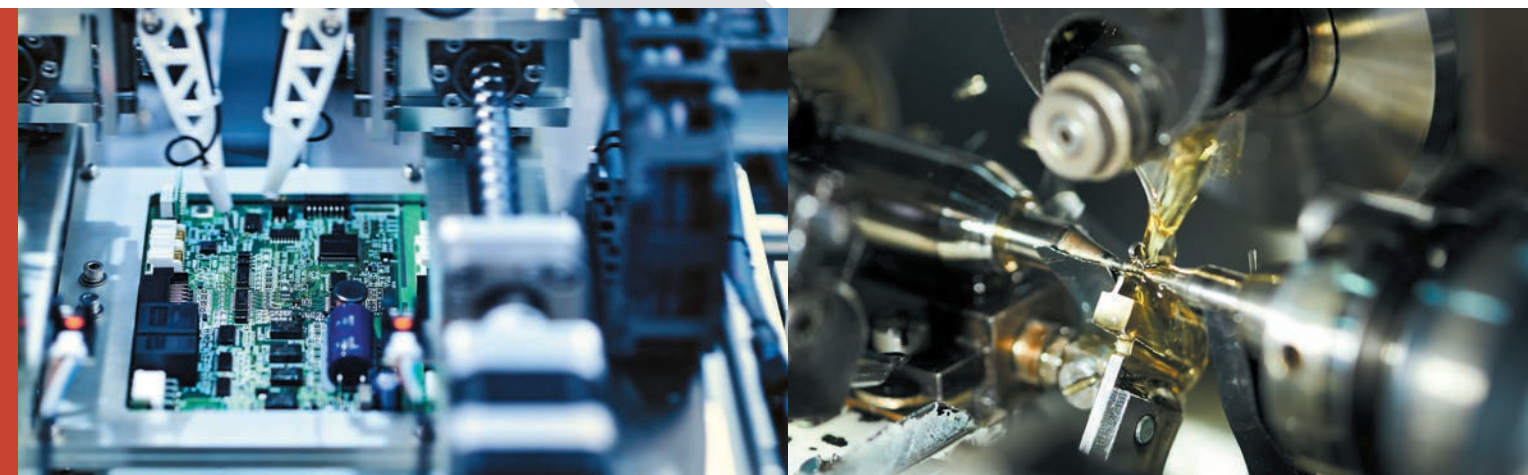
Opening of our first service center in Europe at Aldridge (UK). This service center joins an already well-established network of distributor partners around the globe and enables us to provide a greater responsiveness to our customers' needs.

2022

Marks the end of a 2-years industrial repositioning allowing the Group to focus on high added value materials.

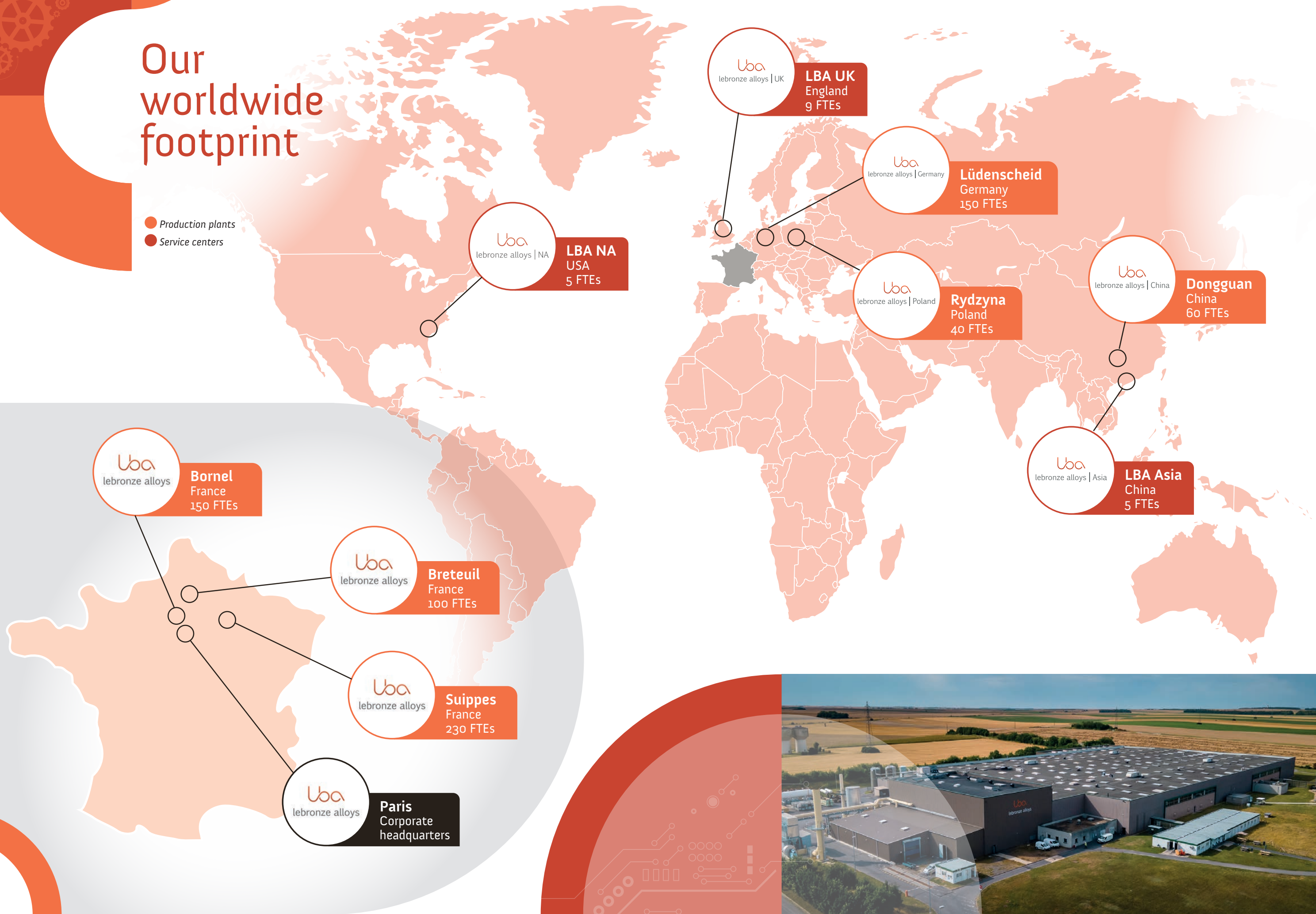
2023

The Group counts over 750 employees, 6 production sites and 3 service centers around the world and generates 288 M€ of sales.



Our worldwide footprint

- Production plants
- Service centers



Product range at a glance

Lebronze alloys offers **more than 200 copper-based and nickel-based alloys** with unique properties which meet the most complex requirements. We supply these alloys in different forms :



Billets



Bars



Hollow bars



Strips



Sheets



Rods



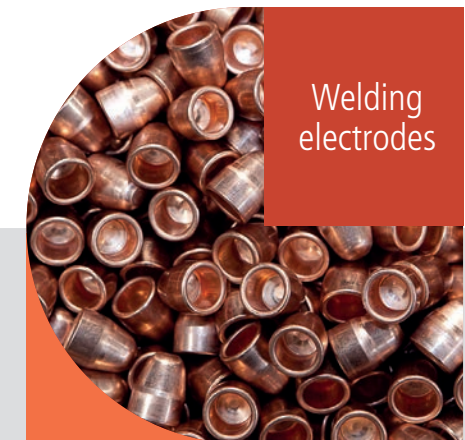
Wires



Standard & complex profiles



Plates



Welding electrodes



Marine tubes & fitting



Machined blanks and parts

A fully integrated production process

One of the Group's major strengths relies in its **fully integrated production process**, from smelting to machining and recycling.

This particularity guarantees a traceability, optimization and strict control of the final properties of our materials so they can suit to the most stringent requirements.

Melting & Casting

- Continuous wire casting
- Continuous bar casting
- Semi-continuous casting

Hot forming

- Extrusion
- Hot rolling
- Free forging
- Hot stamping

Cold forming

- Cold rolling
- Drawing straightening
- Cold stamping
- Heat treatments

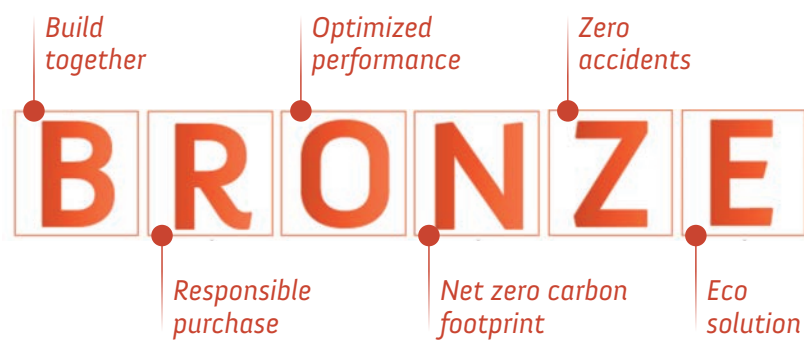
Finishing

- Machining
- Servicing
- Scrap recovery

Our sustainable development policy

To ensure the sustainability of our business, it is essential to strike the **right balance between economic performance, social impact and environmental impact**.

This balance within the Group is structured around our **6 "Bronze" pillars**. Each pillar is broken down into actions and indicators that enable us to be part of a dynamic of continuous progress and sustainability.



Build together: this pillar covers social initiatives that have a positive impact on gender, sex and age equality, as well as projects that improve the well-being of our teams at work.

Responsible purchase: purchases represent more than 50% of Group sales. It is therefore essential that we implement a responsible purchasing policy and tighten up our requirements of our suppliers.

Optimised performance: the Company's economic, industrial and environmental performance is a key factor in meeting the expectations of our relevant stakeholders.

Net zero carbon footprint: taking into account the major challenge of decarbonation, we have decided to make this a specific pillar and to build a path that meets the transformation of the Climate Act and the Paris Agreement.

Zero accidents: our processes require constant vigilance. We are taking action to anticipate and reduce the risk of accidents as far as possible.

Eco solution: by working in collaboration with our customers and bringing innovations to the market, we are contributing to a more sustainable approach by improving the life cycle of products.

Quality

Lebronze alloys develops for all its activities a formally recognized quality management system which allow to:

- guarantee the traceability of our products, from raw material to the product delivered
- certify our products properties
- control our delivery times

Our state-of-the-art quality checks equipment include:

- **Metallurgical tests** such as traction, resilience, hardness, bending and others
- **Non destructive tests** such as Magnetic Particle Inspection (MPI), ultrasonic contact testing, liquid penetrant Inspection and others
- **Metrology, geometry and surface tests** such as surface metrology, global DEA, profile projectors and others



Our certifications

All our certificates can be consulted on our website

Aerospace certifications



Certified site: Suippes



Heat treating



Certified service center:
Lebronze alloys UK

General certifications



Certified sites: Bornel, Breteuil, Lüdenscheld, Suippes, Rydzyna.



Certified sites: Breteuil, Suippes, Rydzyna.



Certified sites: Lüdenscheld and Suippes.

CuZnNi alloys

Unleaded nickel silver alloys

Formability and solderability

Our Group offers a wide range of nickel silver alloys **used for various applications**. These alloys exhibit high deep drawing formability and excellent solderability.

PRODUCT PORTFOLIO

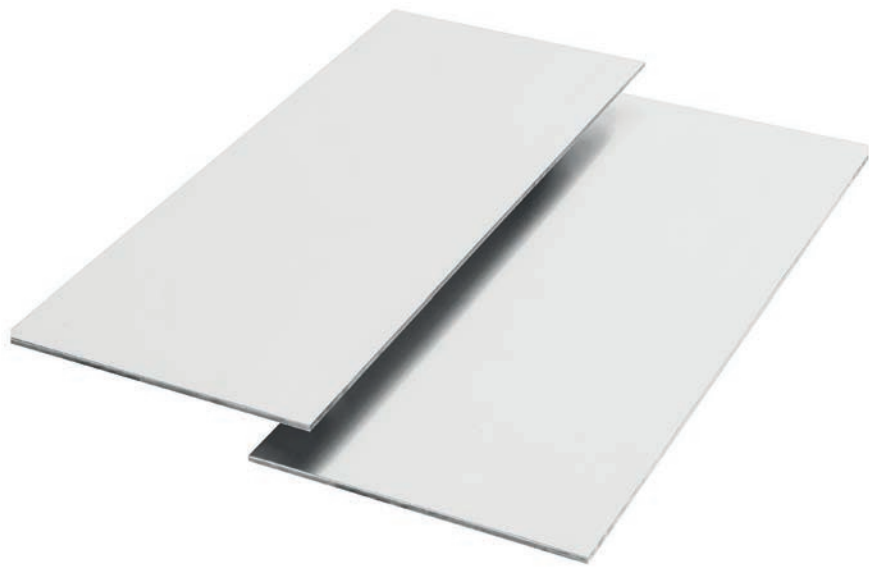
Alloy	ISO	UNS
Nical® 101*	CuNi ₁₀ Zn ₂₈	NA
Nical® 120	CuNi ₁₂ Zn ₂₄	C75700
Nical® 150*	CuNi ₁₅ Zn ₂₃	NA
Nical® 180	CuNi ₁₈ Zn ₂₁	NA
Nical® 180A*	CuNi ₁₈ Zn ₁₇	C75200
Nical® 181*	CuNi ₁₈ Zn ₂₇	C77000
Strong 400*	CuNi ₃₇ Zn ₁₂	NA
Nical® 450*	CuNi ₄₅ Zn ₂₃	NA

**For those alloys, technical data is on demand*

STANDARD CAPABILITY

Format	Thickness	Width	Length
Strips	0.08 - 3.5 mm	3 - 380 mm	NA
Sheets	0.25 - 3.5 mm	20 - 380 mm*	500 - 3000 mm*

**Dimensions outside this range on request*



ESG Performance

We aim to offer our Customers products with the leading grade of environmental footprint. To achieve this, we make major investments in innovative processes aiming to optimize energy and water consumption and increasing the use of recycled raw materials. More specifically, we have developed state-of-the-art recycling know-how based on specialized purchasers for sourcing end of life materials to be processed in our Group Upcycling Workshop. Another key aspect of our ESG strategy is to offer substitutes for alloys that are not REACH and RoHS compliant.

- Our CuZnNi alloys are :
- RoHS and REACH compliant
 - Mainly produced from recycled raw materials

REACH
compliant

RoHS
compliant

Markets and applications

Luxury

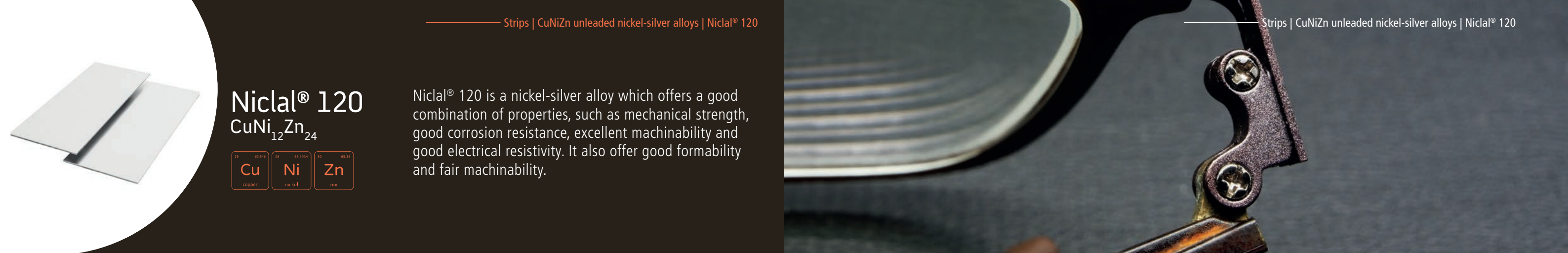


- Watch micro-components
- Spectacle components

Electronics



- Contacts
- Connectors



Niclal® 120

CuNi₁₂Zn₂₄



Niclal® 120 is a nickel-silver alloy which offers a good combination of properties, such as mechanical strength, good corrosion resistance, excellent machinability and good electrical resistivity. It also offer good formability and fair machinability.

MATERIAL DESIGNATION

ISO	UNS	Others
CuNi ₁₂ Zn ₂₄	C75700	CW403J

CHEMICAL COMPOSITION

Cu	Ni	Zn
64%	12%	Balance

PHYSICAL PROPERTIES

General properties	
Density at 20 °C	8.7 g/cm³
Thermal conductivity	33 W/m.°C
Coefficient of thermal expansion from 20 to 200 °C	16 x 10 ⁻⁶ /°C
Modulus of elasticity	125 GPa
Electrical properties	
Electrical resistivity at 20°C	22.7 µΩ.cm

TYPICAL APPLICATIONS

Silverware
Watch components
Medals
Eyewear components
Pen tips
Lighters components
Electronic components
Lock industry components
Fittings

COMPATIBLE DOWNSTREAM PROCESS

Machining
Cold working
Deep drawing
Welding
Brazing
Stamping

KEY FEATURES

Mechanical strength
Corrosion resistance
Amagetism
Yellow-silver color

STANDARD CAPABILITY

Format	Thickness	Width	Length
Strips	0.08 - 3.5 mm	3 - 380 mm	NA
Sheets	0.25 - 3.5 mm	20 - 380 mm*	500 - 3000 mm*

*Dimensions outside this range on request

MECHANICAL PROPERTIES

Temper	Yield Strength 0.2% (MPa)	Tensile Strength (MPa)	Elongation (%)	Hardness (HV)
¼ hard H11	≥ 210	410 - 510	≥20	110 - 140
½ hard H12	≥ 360	470 - 570	≥8	135 - 165
¾ hard H13	≥ 480	560 - 640	≥4	160 - 190
¾ hard H14	≥ 590	640 - 700	≈1	190 - 205
Spring H15	≥ 640	> 700	NA	> 205

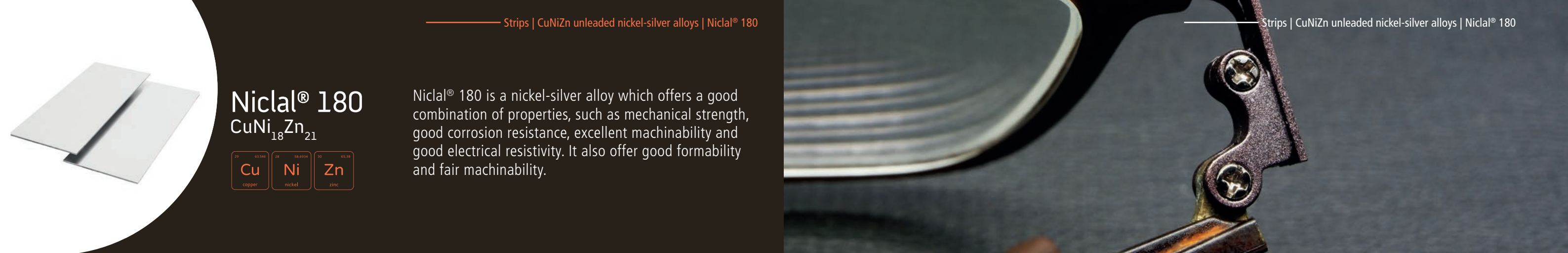
BENDING PROPERTIES

Temper	90° Bending*	180° Bending*
	Transverse (good way)	
¼ hard H11	0*t	0*t
½ hard H12	1*t	2*t
¾ hard H13	1*t	3*t
¾ hard H14	2*t	4*t
Spring H15	3*t	NA

*Bending across the rolling direction (transverse or good way). According to DIN 5011 dated 25/10/85. Figures represent min bending radius.

OTHER AVAILABLE FORMS

Wire
Rods



Niclal® 180

CuNi₁₈Zn₂₁



Niclal® 180 is a nickel-silver alloy which offers a good combination of properties, such as mechanical strength, good corrosion resistance, excellent machinability and good electrical resistivity. It also offer good formability and fair machinability.

MATERIAL DESIGNATION

ISO	UNS	Others
CuNi ₁₈ Zn ₂₁	NA	CW409J

CHEMICAL COMPOSITION

Cu	Ni	Zn
61%	18%	Balance

PHYSICAL PROPERTIES

General properties	
Density at 20 °C	8.7 g/cm³
Thermal conductivity	23 W/m.°C
Coefficient of thermal expansion from 20 to 200 °C	17.7 x 10 ⁻⁶ /°C
Modulus of elasticity	135 GPa
Electrical properties	
Electrical resistivity at 20°C	32 µΩ.cm

TYPICAL APPLICATIONS

- Silverware
- Watch components
- Medals
- Eyewear components
- Pen tips
- Lighters components
- Electronic components
- Lock industry components
- Fittings

COMPATIBLE DOWNSTREAM PROCESS

- Machining
- Cold working
- Deep drawing
- Welding
- Brazing
- Stamping

KEY FEATURES

- Mechanical strength
- Corrosion resistance
- Amagetism
- Silver color

STANDARD CAPABILITY

Format	Thickness	Width	Length
Strips	0.08 - 3.5 mm	3 - 380 mm	NA
Sheets	0.25 - 3.5 mm	20 - 380 mm*	500 - 3000 mm*

*Dimensions outside this range on request

MECHANICAL PROPERTIES

Temper	Yield Strength 0.2% (MPa)	Tensile Strength (MPa)	Elongation (%)	Hardness (HV)
¼ hard H11	≥ 250	450 - 520	≥ 20	120 - 150
½ hard H12	≥ 390	490 - 590	≥ 7	145 - 175
¾ hard H13	≥ 480	560 - 640	≥ 5	170 - 200
4/4 hard H14	≥ 560	640 - 690	≈ 1	200 - 215
Spring H15	≥ 630	> 690	NA	> 215

BENDING PROPERTIES

Temper	90° Bending*	180° Bending*
	Transverse (good way)	
¼ hard H11	0*t	0*t
½ hard H12	1*t	2*t
¾ hard H13	1*t	3*t
4/4 hard H14	2*t	4*t
Spring H15	NA	NA

*Bending across the rolling direction (transverse or good way). According to DIN 5011 dated 25/10/85. Figures represent min bending radius.

OTHER AVAILABLE FORMS

- Wire
- Rods



lebronze alloys

Métallurgie d'exception

www.lebronze-alloys.com