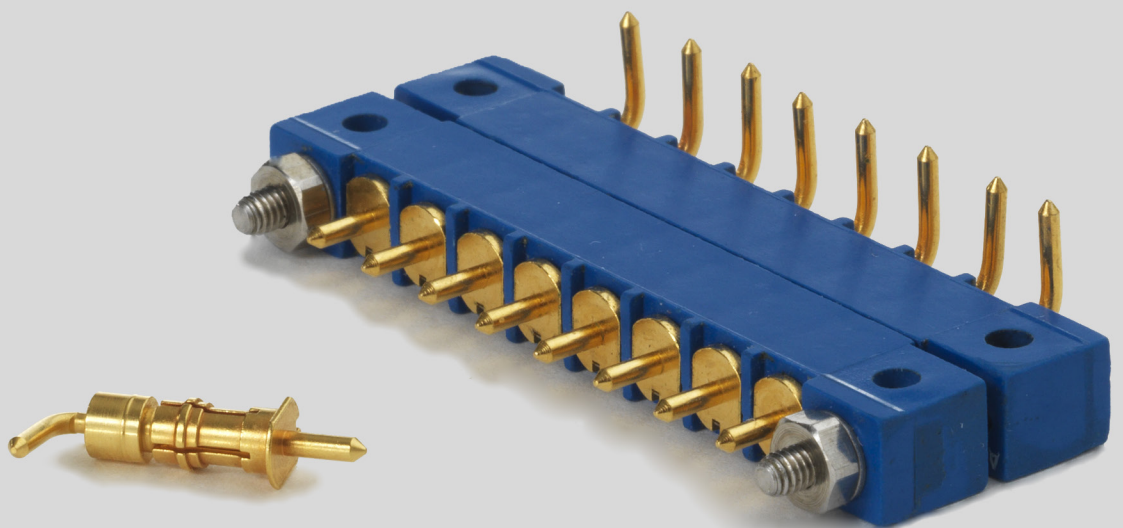


SWISSMETAL⁺

CONNECTORS

CUSTOM-MADE SOLUTIONS
FOR FUTURE CONNECTORS



APPLICATION | #CONNECTORS

Product range

Swissmetal Industries SA produces copper alloys, brasses, bronzes, nickel silver and lead-free bronzes in the form of wires, rods and micro-profiles of various sizes for a wide variety of connectors used in the electronics, telecommunications, aviation, automotive and military industries such as:

- High-precision screw-machined components with very tight tolerances, used for the manufacture of electrical and electronic contacts such as pins and sockets.
- High-precision cold-headed parts with tight and repetitive tolerances.
- High-current capacity contacts.
- High-strength connector parts.
- Coaxial connectors made out of free-machining leaded & unleaded bronzes used for signal transmission.

Alloys

Typical bronzes and high performance alloys (HPA) of copper used in the connector industry are listed in the table below:

TYPES OF ALLOYS	EN	SWISSMETAL	ASTM	MACHINABILITY Free machining = 100% (CuZn39Pb3)
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High Copper Alloys

CuPb1P	CW113C	C99	C18700	60
CuTeP	CW118C	C42	C14500	60

Age-hardenable copper alloys

CuNiPb1P	–	C97	C19160	70*
CuNiPb0.6P	–	C98	C19140/50	50*
CuNi2Si	CW111C	Nib2	C64700	30

Brasses

CuZn39Pb3	CW614N	58A & 58F	C38500	100
CuZn38Pb2	CW608N	60A	C37700	85
CuZn37Pb2	CW606N	61B	C35300	75
CuZn37Pb1.5	CW605N	61C	C35000	75
CuZn36Pb3	CW603N	61A	C36000	85
CuZn36Pb0.5	CW604N	62C	C33500	75
CuZn35Pb2	CW601N	62A	C34500	75
CuZn35Pb1	(CW600N)	62B	(C34000)	70
CuZn35Pb1	CW600N	62AS	C34000	70
CuZn16Si2Pb1	–	PS2	C69750	80

PRODUCT SIZE

Swissmetal offers a wide variety of sizes:

- Wires with diameters from 1 to 6 mm.
- Rods with diameters from 1.0 to 25 mm (depending on alloy).
- Micro profiles on request.



TYPES OF ALLOYS	EN	SWISSMETAL	ASTM	MACHINABILITY Free machining = 100% (CuZn39Pb3)
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Lead free bronzes (NEW)

CuZn42	(CW510L)	58M	–	70
CuZn40	(CW509L)	60C	(C28000)	70
CuZn37	(CW508L)	63A	(C27400)	70

Non-magnetic brass

CuZn36Pb3	CW603N	61D	C36010	90
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Machinable phosphor bronzes

CuSn4Pb4Zn4	CW456K	BZ4	C54400	90
CuSn5Pb1	CW458K	BP5	C53400	60
CuSn5	CW451K	BZ5	C51000	25

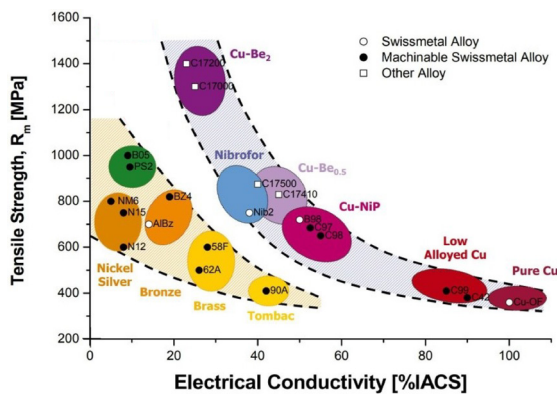
*The alloy meets the requirements for hydrogen resistance according to EN 1976. Standards in parentheses indicate that the Swissmetal alloy does not meet all requirements.

Next generation Cu-based alloys for connectors

Swissmetal's goal is to provide its customers with customized solutions that meet their specific needs. To achieve this, Swissmetal offers dedicated customer service, high quality products, reliable delivery, and technical advice that meet the requirements of modern connectors and their application areas.

Our technical department plays a key role in this process of product development and industry advancement, providing the metallurgical and mechanical expertise to support you in achieving your specifications.

This approach allows us to provide a broad and comprehensive portfolio of material properties, covering characteristics such as ultra-high conductivity with high strength, exceptional machining properties, high deformability and cold heading capability, corrosion resistance and environmentally friendly compounds.



Tensile strength vs. electrical conductivity of Swissmetal alloys copper-based alloys and in comparison to beryllium copper alloys

Custom made material selection and processing for the right needs

To meet **REACH and RoHS** requirements, Swissmetal has developed **3 new lead-free brass alloys**: 58M, 60C and 63A. To meet our customers' expectations, Swissmetal is continuously working on the machinability of these new materials, including the homogeneity of the grain size, without forgetting the other mechanical and technical constraints. Our technical team is present in the field to support our customers in their qualification and homologation process of these new alloys.

INNOVATION GUIDELINES

One of Swissmetal's priorities is the development of high-performance alloys with specific, future-oriented combinations of properties that cannot be met by current standard solutions.

Depending on the type of connector (machined or cold-formed, crimped or soldered contacts, signal or high current transmission, etc.), different approaches to alloy design must be used to produce different solutions that meet the specific requirements of our customers.

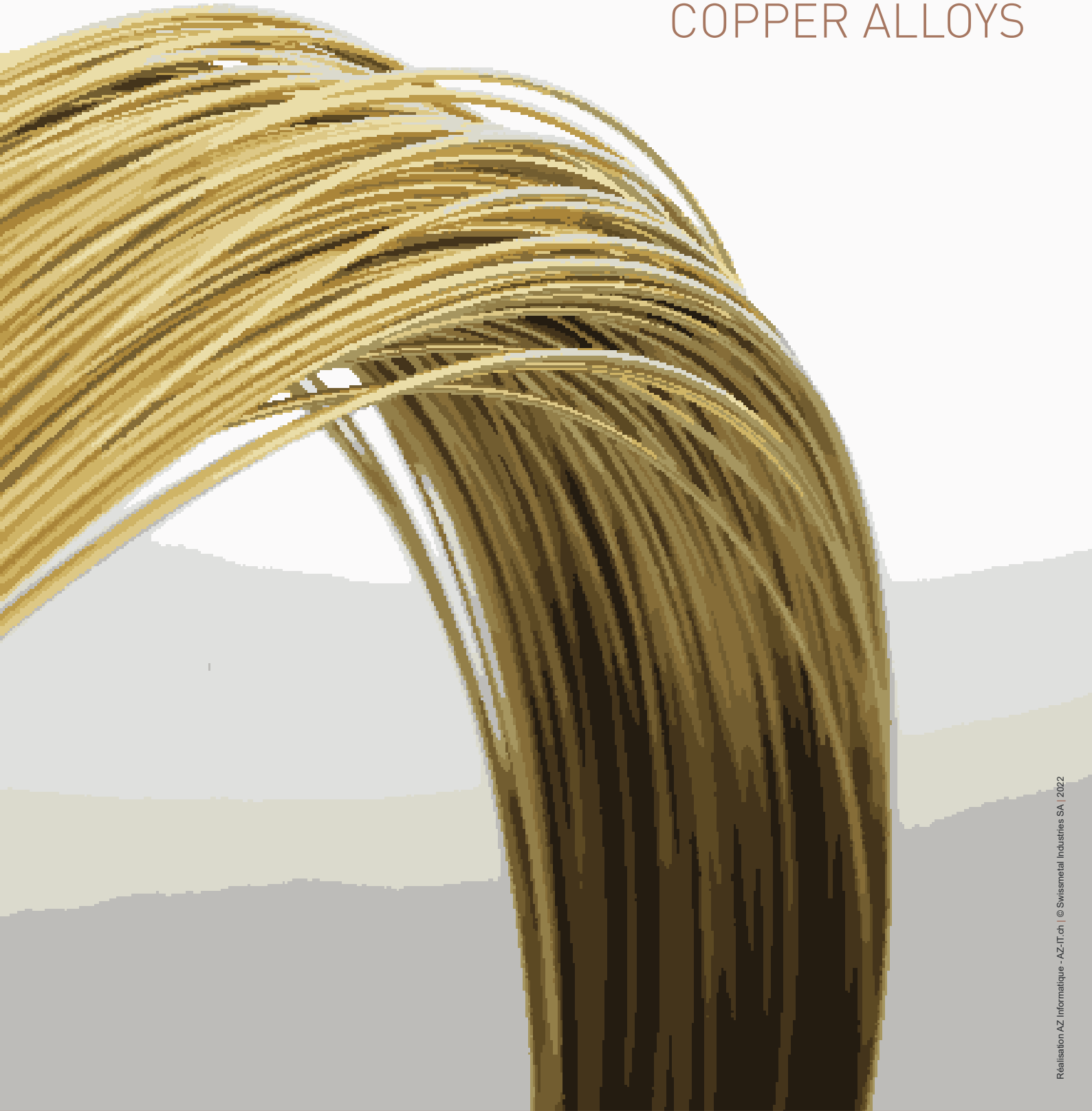
Some of the development activities are listed below:

- Particle Strengthened Low Alloyed Cu (PSLA) with a specific combination of mechanical strength and electrical conductivity.
- Cu PSLA with high strength and high thermal stress relaxation resistance.
- Cu PSLA with high electrical and thermal conductivity.
- High strength, high voltage copper alloys for power transmission.
- Connector alloys with exceptional machinability and forgeability.
- Alloys for connectors that can be crimped without zone annealing.

[REQUEST A QUOTATION](#)

SWISSMETAL⁺

YOUR SOLUTION PROVIDER
FOR HIGH PERFORMANCE
COPPER ALLOYS



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