

TECHNICAL SHEET

CuP6

Product name

CuP6

Class of product

Copper-Phosphorous brazing alloy

Corresponding standards

ISO 17672	CuP 179
EN1044	CP 203
AWS A5.8-04	-----
DIN 8513	L-CuP6

Nominal composition (weight %)

Cu: Bal.
P: 6,2 – 6,5

Physical and technical properties

Melting range (Solidus – Liquidus):	710 - 890 °C
Minimum brazing temperature (flow point):	760 °C
Density:	8,1 g/cm ³
Tensile Strength (filler metal):	56 kg/mm ²
Electrical conductivity:	7,2 % IACS
Recommended joint gap:	0,075 – 0,2 mm
Continuous service joint operating temp.:	-55 / + 150 °C
Max. short service joint operating temp.:	200 °C

Range of application

CuP6 is a copper-phosphorous brazing alloy, with moderate flow properties.

It can be used to join copper to copper or copper based base materials (e.g. bronzes / brasses).

It may be used to fill large or non uniform gaps and to form large fillets.

The phosphorus contained in the alloy acts as a fluxing agent, so that it is not necessary to use an additional flux when brazing copper to copper; however when joining copper based materials (e.g. bronzes / brasses) a proper flux should be used.

CuP6 should not be used on ferrous or nickel alloys, or alloys containing more than 10% of nickel, due to the formation of brittle intermetallic compounds which will cause failure of the joint.

Corrosion resistance of CuP6 is generally satisfactory, except when the joint is contact with sulphurous atmospheres (especially at high temperatures); the alloy should therefore not be used to join parts that could come into contact with sulphur containing medias.

Typical brazing processes include flame, induction and furnace brazing.

In furnace brazing, however, and especially with slow heating rates, the alloy may be subject to liquation.

Tensile strength of joints brazed with CuP6 will generally exceed base metals strength.

Joint strength is however a function of various factors, such as: type of base metals to be joined, type of joint, joint clearance, brazing procedure, etc.

Typical applications are in the refrigeration and air conditioning industries, for joining copper to copper on vibration-free joints; the alloy is quite effective when joining copper pipes and fittings, in all positions.

Characteristics Make-up

Rods: Ø 1,5 ⇔ 4,0 mm ; □ 1,5 ⇔ 4,0 mm Length: 500 / 1.000 mm
Wires: Ø 0,5 ⇔ 3,0 mm Spooled and coiled

Rings

Preforms from Wire

Pastes & Powders

Other dimensions are available upon request.

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STELLA
WELDING ALLOYS

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