

TECHNICAL SHEET

CuP7

Product name

CuP7

Class of product

Copper-Phosphorous brazing alloy

Corresponding standards

ISO 17672	CuP 180
EN1044	CP 202
AWS A5.8-04	BCuP-2
DIN 8513	L-CuP7

Nominal composition (weight %)

Cu: Bal.
P: 7,2 – 7,4

Physical and technical properties

Melting range (Solidus – Liquidus):	710 - 793 °C
Minimum brazing temperature (flow point):	730 °C
Density:	8,1 g/cm ³
Tensile Strength (filler metal):	56 kg/mm ²
Electrical conductivity:	7,5 % 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

CuP7 is a copper-phosphorous brazing alloy, with good flow properties.

It can be used to join copper to copper or copper based base materials (e.g. bronzes / brasses), on vibration free joints.

CuP7 is very fluid at brazing temperature and will penetrate into narrow gaps and tight joints.

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.

CuP7 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 CuP7 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 CuP7 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 very effective for joining tight-fitting copper pipes and tubing.

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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