TECHNICAL SHEET
CuP5

Product name
CuP5

Class of product
Copper-Phosphorous brazing alloy

Corresponding standards

ISO 17672	CuP 178
EN1044	-----
AWS A5.8-04	-----
DIN 8513	-----

Nominal composition (weight %)

Cu:	Bal.
P:	4,8 – 5,3

Physical and technical properties

Melting range (Solidus – Liquidus):	710 - 925 °C
Minimum brazing temperature (flow point):	790 °C
Continuous service joint operating temp.:	-55 / + 150 °C
Max. short service joint operating temp.:	200 °C

Range of application
CuP5 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 is particularly suited for filling very large gaps, joining of badly fitted parts, and for brazing in vertical or overhead position.

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.

CuP5 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 CuP5 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 CuP5 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.

Characteristics Make-up
Rods

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