

FONTARGEN A2003

COPPER PHOSPHORUS ALLOY

Copper-phosphorus brazing alloy

A2003 is characterized by an especially good flow behavior, which allows the user to braze manually and automatically where processing speeds are required. Furthermore, the homogeneous dispersion of the phosphorus increases the ductility of the wire. A2003 suits to brazing joints operated at temperatures between $-60^{\circ}\text{C}/-76^{\circ}\text{F}$ and $+150^{\circ}\text{C}/+302^{\circ}\text{F}$. A2003 offers a good corrosion resistance except when in contact with sulfurous environment, especially under high temperatures. Due to the formation of brittle intermetallic compounds which can cause failures of the joint, phosphorus containing filler metals should not be used on Fe- and Ni- containing base alloys.

Product features	Product benefits	User benefits
» High phosphorus content	<ul style="list-style-type: none"> » High capillary activity » Low filler metal working temperature 	<ul style="list-style-type: none"> » Very good penetration into narrow gaps and tight joints » Fast brazing process » Low brazing temperature process
» Homogeneous dispersion of the phosphorus	<ul style="list-style-type: none"> » Reproductive flow characteristics » No phosphorus nest » Preforms manufacturing for half and/or full automated processes possible 	<ul style="list-style-type: none"> » Good control of the wetting process » Easy bending of wires and rods if necessary
» Auto fluxing on Cu/Cu applications	<ul style="list-style-type: none"> » Due to the presence of phosphorus in the alloy, there is no need of flux when brazing copper to copper. However, when joining other base materials (e.g. bronzes / brasses), using an appropriated flux is necessary 	<ul style="list-style-type: none"> » No post braze cleaning when brazing copper to copper
» Operating temperatures	<ul style="list-style-type: none"> » Determined by notched flexural impact test acc. to DIN EN 10045 	<ul style="list-style-type: none"> » Can be used for joints/parts operated at temperatures between $-60^{\circ}\text{C}/-76^{\circ}\text{F}$ and $+150^{\circ}\text{C}/+302^{\circ}\text{F}$



Typical applications

- » Heat exchangers / Evaporators / Coils
- » Domestic & Industrial Refrigerators
- » Air Conditioners
- » Water heaters / Boilers
- » Home appliance

Mainly used for

- » Fitting copper pipes and tubing
- » Vibration free joints

WFONTARGEN A2003

Classification			
AWS A5.8	EN ISO 17672	EN 1044	DIN 8513
BCuP-2	CuP180	CP202	L-CuP7

Typical chemical composition, wt. %		
Cu	P	Others
Bal.	7.0	0.15

Mechanical properties						
Working Temperature	Melting Range	Specific weight	Elongation	Operating service temperatures of the joint	Max. service temperatures of the joint	Recommended joint gap
730°C/1346°F	710°C/820°C 1310°F/1508°F	8,1g/cm ³	5%	-60°C/+150°C -76°F/+302°F	200°C/392°F	0.075mm/.003" 0.2mm/.008"

Base materials
Brass, Gunmetal, Bronze, Copper

Heat sources
Open flame, Induction, Resistance, Furnace

Flux
FH 10 acc. to EN 1045 => F300 Series of Fontargen

Art. Nr.	Form	Dimensions (mm/inch)	Packaging
81057	Flat rods (with embossing)	1.27 x 3.17 x 508 mm .050 x 1/8 x 20 inch	Plastic tubes

