



## Screen printing **BrazeLet® Ni5P-9012**

### Alloy Application BrazeLet Ni5

Naming	Ni650 according to ISO 17672 BNi-5 according to ANSI/ AWS A5.8
Composition	B-Ni71CrSi according to ISO 17672 and ANSI/AWS A5.8
Melting temperature	1080-1135°C (1976-2075°F)
Min. brazing temperature	1150°C (2102°F)
Impurities	According to ISO 17682 and ANSI/AWS A5.8

### Paste Application Screen Printing

Metal content	90%
Powder size	<106µm
Typical density	4 g/cm³
Flash point of solvent	>100°C (212°F)
Recommended drying	120-170°C (248-338°F)
Evaporation temperature of binder	Approx. 350-450°C (662-842°F)
Cleaning	Aliphatic solvents
Shelf life	8 months in cans, 6 months in cartridges
Storage	Origin closed at 4 to 30°C (39-86°F)
Typical Viscosity, Brookfield T-spindle D with Helipath, Speed 2.5 rpm, 20°C (70°F)	300 Pas

The nickel (Ni) based brazing alloy **BrazeLet Ni5** is suitable for brazing stainless steel or super alloy materials in vacuum or protective atmosphere. It provides excellent high temperature strength, oxidation and corrosion resistance, making it a good choice for applications such as catalytic converters, heat exchangers and gas turbines. It is suitable for thin-walled components due to limited dissolution of the base material.

As **BrazeLet Ni5** is sensitive to gap thickness, it is recommended that gaps do not exceed 50 µm. Wider gaps risk the formation of a crack-sensitive brittle centre line. A diffusion heat treatment can be considered to dissolve the brittle silicides for larger gap clearances up to 100 µm.

The brazing paste **BrazeLet Ni5P-9012** is typically used for printing thick paste layers of about 0.2 to 0.6 mm on flat parts or on top of structured parts by use of screens or stencils. A typical application is printing of paste on hole plates of tube bundled heat exchangers. The use of rubber squeegees is recommended. Reliable printing requires precise positioning fixture tool by use of vacuum table or clamping device. Typical printing speed is 100 mm/s. Thin printing lines should at least have a width twice the printing thickness and the small dots diameter should be three times the printing thickness or greater. Printing accuracy is very precise as the paste maintains its shape during drying.

The solvent based **BrazeLet Ni5P-9012** increases productivity wherever drying of the paste is an issue. It has no settlement and no stirring is needed in the equipment. However, when opening a can from stock it is always recommended to stir the paste. The printed parts can be dried with standard drying process (hot air) at 120-170°C. Here, the drying time needs to be established as it varies depending on thermal mass, parts design and the used furnace. When dried, the paste has excellent adhesion to the metal sheet.