



SOLVAY

Aluminium
Brazing with

NOCOLOK[®]



NOCOLOK[®] Pastes

NOCOLOK® Flux Pastes

NOCOLOK® flux and brazing pastes command a maximum variety of options in flux and brazing alloy powder applications.

Consequently, NOCOLOK® flux pastes can be individually adapted according to respective technical requirements and the brazing processes used.

Possible NOCOLOK® Flux brazing paste variations:

- Nocolok® Flux Standard
- Nocolok® Cs Flux
- Nocolok® Li Flux

Alloy powder:

In combination with the various flux powders, NOCOLOK® brazing pastes can contain different brazing alloy according to the application requirements:

AlSi12	AL104 (DIN EN 1044)	AA 4047
AlSi10	AL103 (DIN EN 1044)	AA 4045
AlSi7,5	AL102 (DIN EN 1044)	AA 4343

The grain size of the brazing powder can be adapted to all corresponding applications.

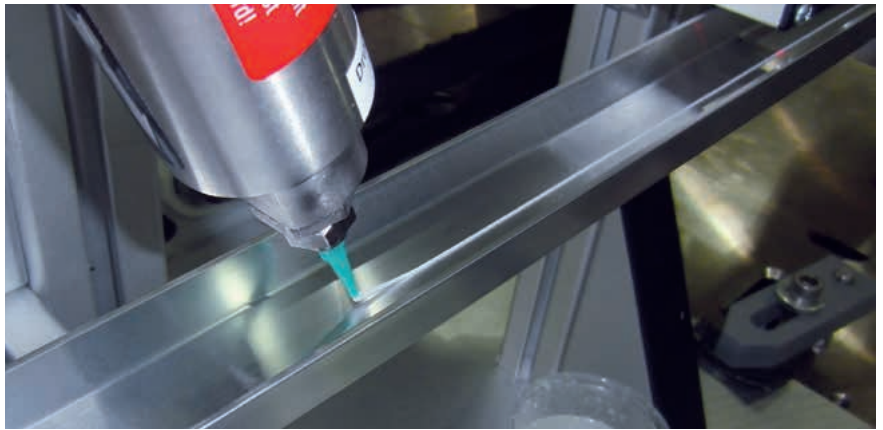
Overview NOCOLOK® Flux

Based on	Products	Tariff Schedules	Trade Name	Packaging Options	Available Range (from-to) % can be customized on request		
					Flux Powder [%]	Carrier [%]	Filler [%]
CAB Flux (non-corrosive)	Flux Paste	3810 9090	NOCOLOK® 028/xx	Plastic container 1 kg, buckets 5, 10, 15 or 20 kg	30-62	Glycol based 38-70	-
	Flux Paste	3810 9090	NOCOLOK® S01-/xx (xx means % of Flux)		20-40	Glycol based 38-70	-
	Metallized Flux Paste	3810 9090	NOCOLOK® 7028E (AlSi12) NOCOLOK® 8028E (AlSi10) NOCOLOK® 9028E (AlSi7)		21-40	Glycol based 17-55	8-53
	Ultra Flux Paste	3810 9090	NOCOLOK® Ultra Flux Paste xx		20-40	Hydrocarbons polymers, mineral oil 60-80	Option

Applications

- Flux Pastes are mainly used inside B-tubes and folded tubes, in order to provide a line of flux on a clad surface. These paste formulations are available in FG (fine grade) version, the N version ("new" – i.e. with adjusted rheology and re-mixing characteristics) and UV version (ultraviolet sensitive pigments for special application monitoring).
- Metallized Flux Pastes (Brazing Pastes) are often used manifolds/tubes or blocks/manifolds or header/tubes or in any place there is need for joint formation with additional filler metal (usually used to compensate for challenging design situations or for larger tolerances on stamped parts).
- Ultra Flux Paste is used inside B-tubes and folded tubes, in order to provide a line of flux on a clad surface (more "sticky" than glycol family "028").

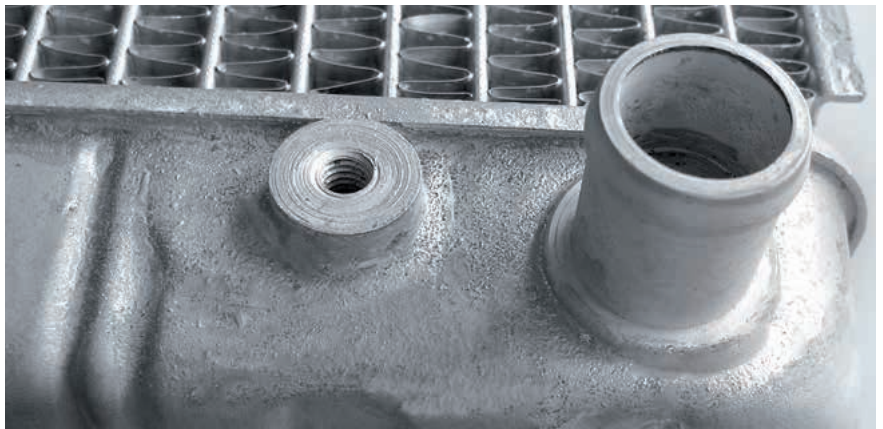
Application Areas for NOCOLOK® Flux and Brazing Paste



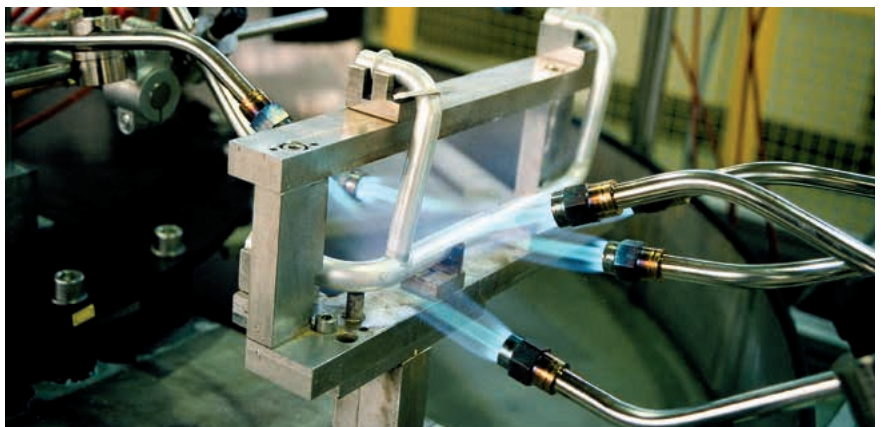
- Production of multi-chamber tubes



- Use as B-pipe flux paste (after application bent upwards/opened)



- Furnace brazing



- Flame brazing

Properties

NOCOLOK® flux and brazing pastes offer numerous advantages that distinguish them from other products.

1. Solvent system

- Use of systems miscible with water and glycols
 - Equipment and facilities used for paste application can be easily cleaned with water
 - If required, the setting or adjustment of viscosities is possible with certain glycols

2. Variable viscosity

- Depending on requirements, the pastes can be produced in a wide viscosity range and with different solids contents.

Flux pastes

Possible viscosity range	500–50,000 mPa·s
Flux content	5–60 %
Variable flux content at constant viscosity	15–30 %

Brazing pastes

Possible viscosity range	1,000–80,000 mPa·s
Flux content	15–40 %
Plummet content	15–45 %

3. Minimum precipitation of the pastes

- Low settling behaviour of the contained solids even after several weeks of storage
- Simple agitation, homogenisation is – if necessary – possible

4. Very good adhesion

- Marginal running during application of the paste, even on vertical surfaces
- By use in multi-chamber tubes, there is no leakage during transport, storage or processing

Comparison of vertical adhesion of brazing pastes

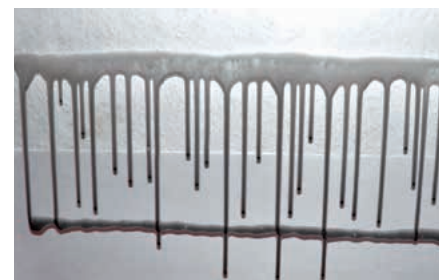


After 15 minutes

Above is a conventional brazing paste
Below NOCOLOK® brazing paste



After 45 minutes



After 75 minutes

Properties

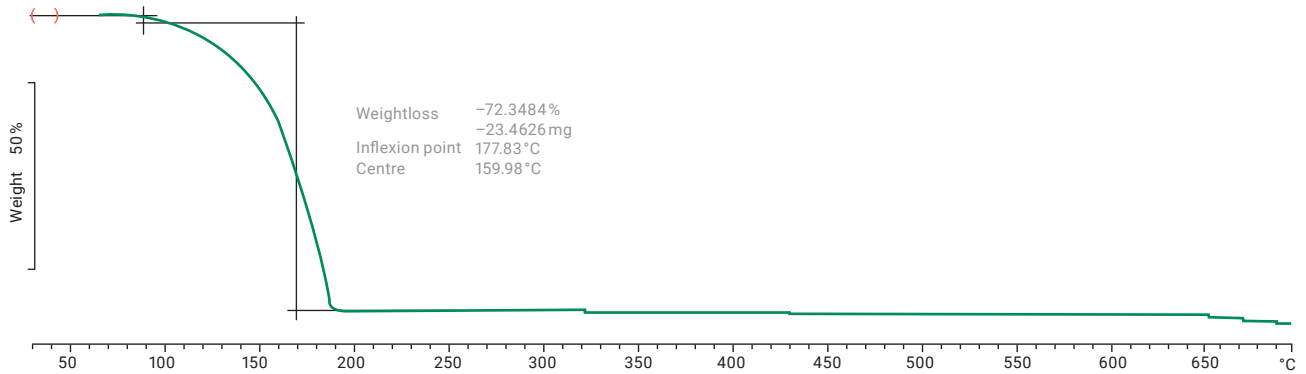
5. Residue-free solvent system

- Evaporation and removal of the glycol carrier system from the surfaces takes place at below 200 °C
- The complete solvent content of the pastes comes off in the first third of the brazing cycle
- Consequently, the removal of the glycol carrier system is possible in the drying phase or in the degreasing furnace before the brazing process

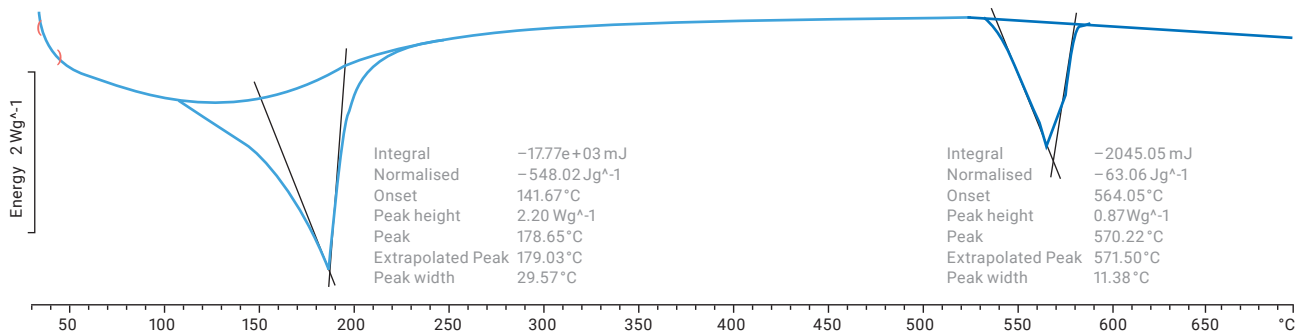
The resulting emissions are thus removed in good time before the brazing process by appropriate channelling of the waste gases. Therefore, the actual brazing process is not affected.

Differential Thermo Analysis (DTA) of NOCOLOK® Flux Paste – Representative Sample

PEN1679 NOCOLOK® Ultra Flux, sample weight 32.43 mg Mettler TGA/DGC, 10 K/min Al203-150 µl cup open.



PEN1679 NOCOLOK® Ultra Flux, heat flow



At just under 200 °C, the organic solvent have decomposed without residue.

Packaging

Available packaging forms

- Plastic container 1 kg
- Plastic buckets 5, 10, 15 or 20 kg
- Optional: Plastic drums 60 or 200 kg



Plastic container 1 kg



Plastic bucket 10 kg

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