FELDER seit 1979 LÖTTECHNIK

Product Information

FELDER-ISO-Cream® "Clear" lead containing

No-Clean SMD solder paste for an excellent wetting on all known surfaces.
Lead containing soft solder powder Sn62Pb36Ag2 resp. Sn63Pb37 according to DIN EN ISO 9453
Flux 1231 according to DIN EN ISO 9454-1, REL0 according to DIN EN 61190-1-1 resp. IPC J-STD-004

Item.-No.: 23..5200….

Description

SMD solder paste **ISO-Cream® "Clear"** is a homogenous, ready-made, odourless mixture made of metal powder, binding agents, solvents and fluxes. It is free of any thixotropic agents; therefore, a steady viscosity is guaranteed. This paste has excellent wetting qualities and is also excellent for soldering of difficult solderable surfaces as chem. Ni/Au, chem. Ag or OSP.

Properties

Alloy according to DIN EN ISO 9453	Melting point	Metal powder form	Metal content
Sn62Pb36Ag2	179 °C	spherical	85 - 89 %
Sn63Pb37	183 °C		

Grain sizes:
3 = Fine Pitch 25 - 45 µm
4 = Fine Pitch 20 - 38 µm
5 = Ultra-fine Pitch 15 - 25 µm

Viscosities:
Low = 680.000 mPas
Standard = 780.000 mPas
High = 880.000 mPas

Recommended stencil strength:
Fine-Pitch = 100 - 150 µm
Ultra-fine-Pitch = 75 - 125 µm

In the dispenser version it can be exactly applied continuously with all common dosage methods:
We recommend a dosing pressure between 1 and max. 3 bar.

- Manual Dosage
- Standard dosage equipment
- Dosage devices with impulse air-pressure
- Dosage by scroll valves
- Pin-Transfer resp. dipping
- Micro dosage

Recommended pin diameter:

Powder grain size	Type 2 (45 -75 µm)	Type 3 (25 -45 µm)	Type 4 (20 -38 µm)	Type 5 (15 -25 µm)
Pin diameter	0.84 mm	0.58 mm	0.41 mm	0.34 mm

The special **ISO-Cream® "Clear"** formulation avoids the separation of the solder paste and guarantees so a constant viscosity until complete emptying of the cartridge.

 Status: 01/22

FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen
Fon +49 (0) 208 8 50 35 0
Fax +49 (0) 208 2 60 80
Web www.felder.de
Mail info@felder.de

Soldering Results

The solder paste ISO-Cream® **"Clear"** is insensitive against humidity and temperature. It shows no tendency for formation of solder balls at chip-resistances and capacitors. Excellent soldering results with clear flux residues with very high surface resistivity values. Even components with slightest pad gaps are soldered error free.

The flux residues of **FELDER** ISO-Cream® **"Clear"** soldering paste have a very limited expansion (the flux does not flow over the edge of the solder resist mask). Thus, the pseudo failure quote, especially with AIO-controlling systems is significantly reduced, as reflecting flux residues could (wrongly) be interpreted as solder bridges.

Contour Stability (Slump)

The contour stability of the ISO-Cream® **"Clear"** corresponds to the requirements of assembly production, even under adverse conditions!

0.1 mm stencil

15 min. after print at 25 °C / 50 % RF	
horizontal 0.33 x 2.03	0.10 mm free
0.2 x 2.03	0.10 mm free
vertical 0.33 x 2.03	0.125 mm free
0.2 x 2.03	0.10 mm free

15 min. after print at 150 °C	
horizontal 0.33 x 2.03	0.15 mm free
0.2 x 2.03	0.10 mm free
vertical 0.33 x 2.03	0.15 mm free
0.2 x 2.03	0.10 mm free

0.2 mm stencil

15 min. after print at 25 °C / 50 % RF	
horizontal 0.33 x 2.03	0.10 mm free
0.2 x 2.03	0.10 mm free
vertical 0.33 x 2.03	0.125 mm free
0.2 x 2.03	0.10 mm free

15 min. after paste print at 150 °C	
horizontal 0.33 x 2.03	0.15 mm free
0.2 x 2.03	0.10 mm free
vertical 0.33 x 2.03	0.15 mm free
0.2 x 2.03	0.10 mm free

Tack Time

FELDER ISO-Cream® **"Clear"** is also suitable for very high print speeds.

Adhesiveness (Tack Time)	at least 72 hours

It has a very long stencil time and may be applied on printing machines with a temperature control unit (very strong ventilation).

FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen

Fon +49 (0) 208 8 50 35 0
Fax +49 (0) 208 2 60 80

Web www.felder.de
Mail info@felder.de

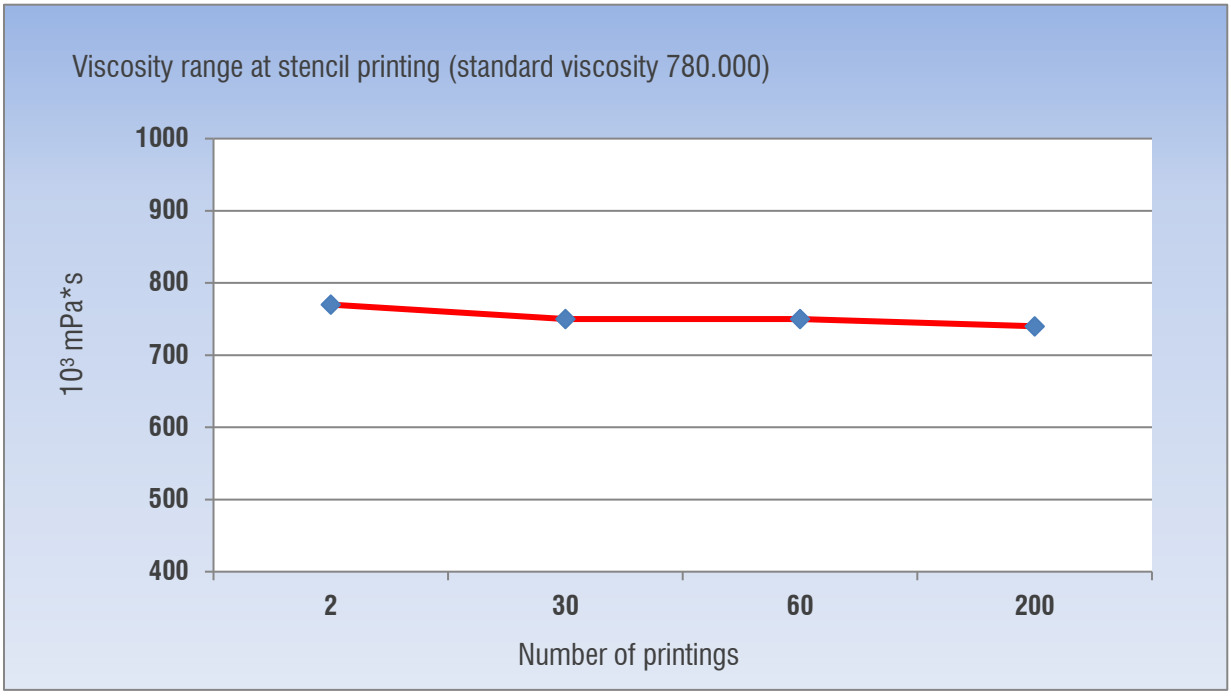
Rheology

The rheology of this paste has been optimised to achieve excellent printing qualities at narrow openings as well as a very good first print after longer breaks. Laboratory tests have shown that the first print after a break of 8 hours was perfect. The paste remains in best condition up to 72 hours so that the adhesiveness allows a mounting and still shows excellent solder results.

Organic Carrier Materials

Properly stored the composition of ISO-Cream® "Clear" SMD solder paste avoids encrustation to a large extent and guarantees the following rheological properties:

- excellent printability
- long lasting constant viscosity



FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen

Fon +49 (0) 208 8 50 35 0
Fax +49 (0) 208 2 60 80

Web www.felder.de
Mail info@felder.de

SIR-Test according to DIN EN 61189-5, IPC J-STD-005

The flux residues show a very high surface resistance:

Test duration	ISO-Cream® "Clear" 85° C / 85 % RF	blank test 85° C / 85 % RF
after 24 hours	1.49 x 1011Ω	3.26 x 10^{11}Ω
after 96 hours	2.43 x 1011Ω	3.92 x 10^{11}Ω
after 168 hours	1.58 x 1010Ω	4.23 x 10^{10}Ω

Summary

- uncoloured flux residues
- low flux expansion
- excellent wetting on all known surfaces
- low volatiles components ⇨ larger cleaning intervals of the reflow oven
- no-clean quality
- excellent printing quality ⇨ high stencil time of at least 72 hours
- perfect soldering results with all common soldering profiles
- insensitive against environmental influences
- constancy of the viscosity also with longer printing breaks

Processing Instructions

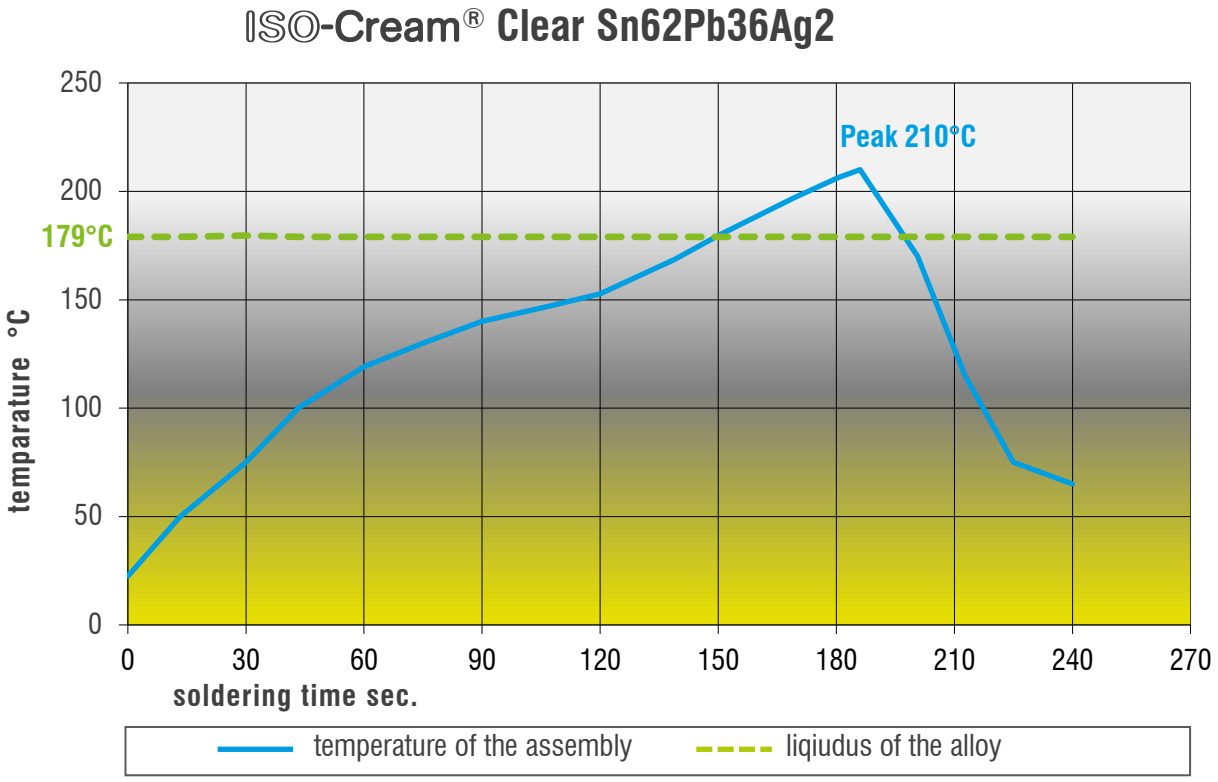
- The paste should reach room temperature before opening the jar so that there will be no condensed water on the paste.
- Stir **FELDER ISO-Cream® "Clear"** well before using.
- **FELDER ISO-Cream® "Clear"** stays in its sticky consistency over a long period of time, which allows a trouble-free assembling of the circuit board even after 72 hours. The exact period depends on the ambient conditions, size and form of the components as well as the printing speed on the assembly line.
- The exact soldering peak temperature depends on the warmth capacity of the components.
- **FELDER ISO-Cream® "Clear"** may be soldered under normal atmosphere or inert gas.
- Do not return the used solder paste (e. g. leavings on the stencil) in the jar, because the durability of the remaining paste will be considerably reduced. Keep the used solder paste separately and if necessary, mix it just before use with fresh solder paste.

FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen

Fon +49 (0) 208 8 50 35 0
Fax +49 (0) 208 2 60 80

Web www.felder.de
Mail info@felder.de

Recommended Solder Profiles



Technical Data

Category	Values printing (Low/Standard/High)	dispensing	dipping	Target / Standard
Metal powder content	88 / 88.5 / 89 %	85 %	70 %	DIN EN 61189-6
Density of the paste	approx. 3.9 g/cm³	approx. 3.7 g/cm³	approx. 3.1 g/cm³	-
Flux residues	clear, colourless, not sticky			DIN EN 61189-5
Viscosity (Brookfield) (RVT spindle TF, 5rpm, 25° C, ±10%)	680 / 780 / 880 Pas	450 Pas	230 Pas	DIN EN 61189-5, IPC J-STD-005
Stencil time	> 8 h			-

 Status: 01/22

FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen
Fon +49 (0) 208 8 50 35 0
Fax +49 (0) 208 2 60 80
Web www.felder.de
Mail info@felder.de

Technical Data II

Category	Results	Target / Standard
Wetting	No indications of de-wetting resp. non-wetting, no solder splatters	DIN EN 61189-5
Mounting	min. 72 hours	-
Corrosiveness	Copper-Mirror-Test: passed (L) Corrosion test on copper: passed	DIN EN 61189-5/-6, IPC J-STD-005
Halide content	<0.1 %	DIN EN 61189-6, IPC J STD-005
Flux type	REL0	DIN EN 61190-1-3, IPC J-STD-004B
Surface resistance SIR	85° C / 85 %RF: 1.58E+11 after 168 hours	DIN EN 61189-5, IPC J-STD-005
Durability	12 months at 5 - 20° C	-

Advice

Attention: ISO-Cream® "Clear" Sn62Pb36Ag2 resp. Sn63Pb37 SMD solder pastes are not compliant to RoHS!

This paste does not contain phthalates or latex.

Washing

The flux residues may remain on the soldered circuits and do not have to be washed away. Nevertheless, the residues can be removed with common cleaning methods.

Storage Advice

Store in tightly closed containers protected from humidity, insolation, and warmth effect. **ISO-Cream® "Clear"** is storable at constant temperature (5 – 20° C) for at least 12 months.

Delivery Forms

Jars:	0.250 and 0.500 kg
Cartridges:	6 and 12 oz Semco®
Application cassettes:	DEK-ProFlow™
Dispenser cartridges:	10 g (5 cm^3), 30 g (10 cm^3), 100 g (30 cm^3)

 Status: 01/22

FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen

Fon +49 (0) 208 8 50 35 0
Fax +49 (0) 208 2 60 80

Web www.felder.de
Mail info@felder.de