

F 352 Series SolderPaste

No-Clean, Low Odour Characteristics, Reflow under Air and Nitrogen

Description

The solder pastes of the F352 series comprise a ready-to-use homogeneous mixture with **low odour characteristics**, consisting of metal powder, binders, solvents, fluxes and thixotropic agents.

Based on the reliable flux system of the F360 Series, this flux was optimised to **increase its wetting capability**, **decrease the odour** of the paste, **avoid solder balls** (on chip-resistors and capacitors) and to **increase tack time and stencil life**.

Solder pastes of the F352 Series **does not contain any halogen activators**. They leave **low, clear flux residues** with **low ionic contamination** and very **high SIR**. These pastes are **insensitive to temperature and humidity**.

F352 flux has **passed** all tests for no-clean solder pastes according to
 - Siemens standard **SN 59650** Issue from July 1994 (see test certificate dated April 03, 1997). The tests were performed at Siemens ZT in Berlin.
 - Bellcore standard TR-NWT-000078, part 13.1 (see Trace Laboratories test report dated Nov. 15, 1995).

Solder pastes of the F352 Series have **very high green strength** and are suitable for machines with high accelerations / decelerations. More over they have **very long stencil life** and **can be used in printers with TCU** (Temperature Control Unit - very strong ventilation). Their rheology is optimised to allow **excellent printing performance** with narrow openings and an **excellent first print after a pause - e.g. a lunch break**. Laboratory tests gave a perfect first print after a break of 18 h.

Properties

Metal powder shape: **spherical**
Alloy, Particle Size, Melting Point, Metal % and Viscosity: **see reverse**

Organic vehicle

If the paste is properly stored, its composition prevents crusting and ensures the following rheological properties:
 ⇒ excellent printability
 ⇒ stable viscosity.

Flux activity

According to:
 ⇒ ANSI-J-STD-004: **LO**
 ⇒ ISO 9454-1: **1.1.3.C.**
 ⇒ IPC-SF-818: **Type LR3N**

Cleaning

The flux residues don't need to be cleaned. They may remain on the circuit. If desired, the residues can be washed away with diverse Zestron and Vigon cleaning materials, see separate application recommendations.

Processing

⇒ Ensure that the paste has reached room temperature before opening, to prevent condensation.
 ⇒ Stir well prior to use.
 ⇒ Print through a stencil or screen.

Printing Data*:

Stencil thickness: ≤ 200 µm (≤ 8 mil)
Screen, mesh size: 80 mesh
Min. pitch: 16 mil = 400 µm
 (Stencil thickness 150 µm)
Min. width of apertures: 8 mil = 200 µm and smaller stencil under controlled conditions**

* The above data are for information only. Final results depend on different process parameters at the customer.

** For more information please talk to our Applic. Dept.

Clean wet paste: with diverse Zestron and Vigon cleaning materials, see separate application recommendations.

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- ⇒ The printed solder paste remains tacky **up to 24 hours**, to allow device insertion. The exact time depends on the environmental conditions, components' size and form, and on the accelerations/decelerations in the line.
- ⇒ The peak temperature depends on the heat capacity of the components.
- ⇒ **Reflow can be done under air or an inert atmosphere.**

Storage

Store the solder paste in tightly-sealed jars / syringes and avoid exposure to sunlight and high humidity.

Storage of pastes in jars:

Maximum 6 months in a refrigerator at 2 to 10 °C.

Maximum 1 month at room temperature up to 23 °C.

Storage of pastes in syringes:

Maximum 3 months in a refrigerator at 2 to 10 °C.

Store cartridges vertically, tip down.

Issue from 11.06.2002 JT-DK

The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

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Available as Standard Product:

F352SN62-90.5M30

Explanation of the Solder Paste Numbering System:

For example:	F352SN62-90.5M30
Flux series:	F352
Alloy:	SN 62
Metal content:	90.5
Viscosity:	M
Powder size:	30

Alloy

Code	Alloy	Melting point °C
SN62	Sn 62 / Pb 36 / Ag2	179

Metal content

Code	Metal content in the paste - weight %
90.5	90.5

Viscosity

Code	Viscosity of the solder paste Brookfield RVT, Spindle TF, 5 rpm, 25°C
M	400 - 700 Pa·s

Powder size

Code	Particle size in µm*	Mesh size
30	25 - 45	

* Acc. to the measurement with Helos laser granulometer

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