Heraeus

# Technical Data Sheet



## ASSEMBLY MATERIALS

**Product Type:** No Clean Solder Paste

**Product Name:** F645 SAC305-89M40

### Description

F645 SAC305-89M40 solder paste is a state-of-the-art halogen-free lead free no clean solder paste that promotes wetting and minimises soldering defects. Extensive testing at customer locations has proven this paste to be capable of defect-free performance in the production environment.

### Key Benefits

- Exceptional print to print consistency
- Outstanding wetting

### Compliant Products

- Flux SF 64

### Applications

- Printing

### Product Code and Alloy

| Product Code | | | | | Powder Properties | | |
|---|---|---|---|---|---|---|---|
| Paste | Alloy | Metal Content | *Viscosity | Powder Type | Particle Size | Alloy | Melting Point |
| F645 | SAC305 | 89% | M | 4 | 20 – 38 µm | Sn96.5/Ag3/Cu0.5 | 217 °C |

*D = Dispense grade M = Print grade H = Print grade, high L = Dipping/Jetting grade, Low

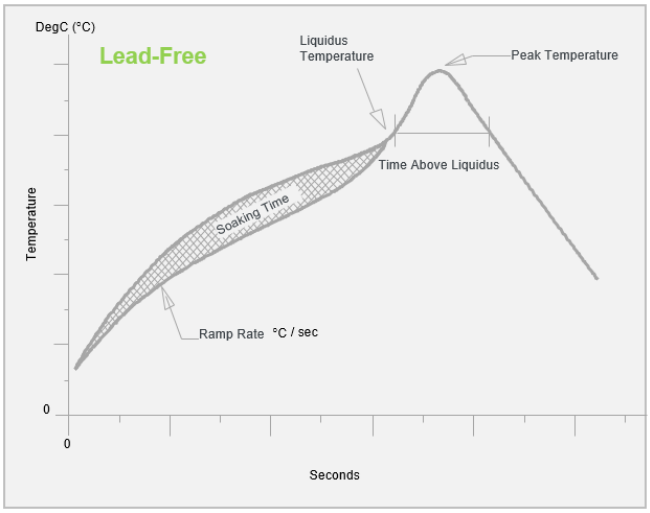
### Flux Activity

| Activity Level (J-STD 004) | ISO 9454-1 {DIN EN 29454-1} | Classification |
|---|---|---|
| RELO | 1.2.3.C | No Clean/ Solvent Clean |

### Halogen Content

| Halogen-Zero (No halogen added in the flux) |
|---|
| Tolerances: Halogen < 50 ppm; measured according to BS EN 14582 |

### Recommended Reflow Profile




* Graph not drawn to scale

| Recommended Profile | |
|---|---|
| Average Ramp Rate | 1 – 3 °C/s |
| Peak Temperature | 15 °C (min) – 40 °C (max) above Melting Temperature |
| Time above liquidus | 45 – 90 s |
| Reflow Atmosphere<br><br>Type 3 – 5 | Reflow in Air or in $N_2$ with<br>< 2000 ppm $O_2$ |

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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## Cleaning Instructions

After reflow flux residues may remain on the circuit and do not need to be washed. For cleaning of wet paste or if desired for cleaning of flux residues Zestron and Vigon cleaners can be used – see separate cleaning

## Storage

- Store the solder paste in tightly-sealed containers and avoid exposure to sunlight and high humidity
- Max expiration date: please refer to the expiry date on the label of the packaged product
- Storage condition in the refrigerator at 2 - 10 °C
- Store cartridges with tip pointing downwards

## Paste Preparation

- Remove paste from fridge: Before opening the package, leave paste for at least 4 hours (depending on jar/ cartridge size) at room temperature, so that paste warms up
- Do not open jar/cartridge while paste is cold to prevent condensation
- Do not heat the paste beyond room temperature
- Before using of paste jar: To obtain uniform, stable viscosity stir paste for 1 to 2 min, using a stainless steel or chemically resistive plastic spatula
- For further information see Technical Information

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