

PRODUCT DATA SHEET

PoP Flux 89HFLV-B

Package-on-Package Flux

Introduction

PoP Flux 89HFLV-B is a thixotropic no-clean flux designed for package-on-package applications with Pb-free solders. **PoP Flux 89HFLV-B** has a unique halogen-free activator system. The blue/black color was specifically designed to be used in conjunction with pick and place equipment that have the capability to inspect for flux presence. The color also aids in process setup, optimization, and maintenance.

Features

- Application by dipping
- Halogen-free (per EN14582 test method)
- Designed for Pb-free (SAC alloy) applications
- Excellent solderability with Cu-OSP, AuNi, and immersion Ag finishes
- Air and nitrogen reflow
- Air-free packaging
- Blue/black color specifically designed for use with pick and place vision systems with flux presence inspection capability

Physical Properties

| | Value | Test Method |
|--------------------------|--|---|
| Flux Type Classification | ROLO | J-STD-004B |
| Typical Viscosity | 5kcps | Cone and plate viscosity (5 minutes) |
| SIR (Ohms, after reflow) | Pass (>10 ⁸ after 7 days @ 40°C and 90% RH) | J-STD-004B (IPC-TM-650: 2.6.3.7 IPC-B-24) |
| Typical Acid Value | 113mg KOH/g | Titration |
| Typical Tack Strength | 99g | J-STD-005A (IPC-TM-650: 2.4.44) |
| Shelf Life | 12 months from DOM | Viscosity change/ microscope examination |
| Pot Life | >8 hours | |
| Color | Blue/black | Visual |

*All information is for reference only.
Not to be used as incoming product specifications.*

Application

The volume of flux on the package bumps can be optimized by changing the pick and place equipment parameters. The dip depth and the dwell time in the flux reservoir are key process variables to perform optimization for. Both of these variables will need to be optimized for each specific component that is being used in the dipping process. The settings will depend upon the package bump height and pitch. Other equipment settings can also have an effect on the process including the flux shear speed, insertion speed, and extraction speed.

Flux inspection using the pick and place vision system must also be optimized for the flux that is being used in the process. **PoP Flux 89HFLV-B** was specifically designed to minimize vision system alterations, yet slight adjustments may be needed in order for the flux to be properly detected by the vision systems.



Cleaning

PoP Flux 89HFLV-B is designed for no-clean applications, and can be left in place on the final package. If necessary, flux residues can be removed by using a commercially available flux cleaner. Contact an Indium Corporation Technical Support Engineer for recommendations on flux cleaners.

Packaging

PoP Flux 89HFLV-B is only available in 30cc syringes.



From One Engineer To Another®



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Storage

For maximum shelf life, **PoP Flux 89HFLV-B** syringes and cartridges should be stored tip down. Storage temperatures should never exceed 30°C. After removing from cold storage, **PoP Flux 89HFLV-B** should be allowed to stand for at least 4 hours at room temperature before use.

Technical Support

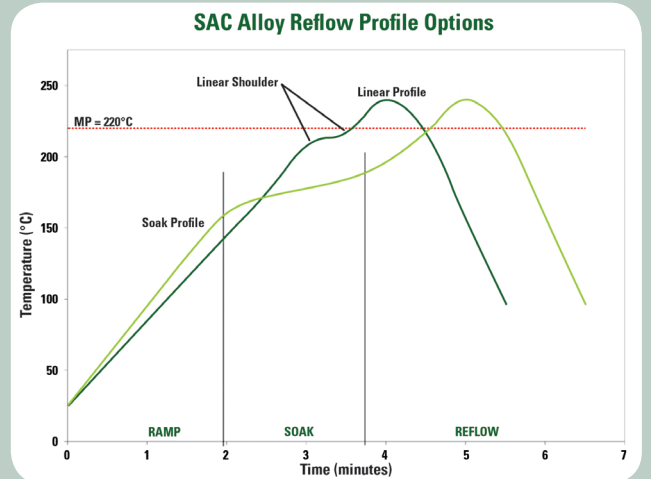
Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Materials Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder preforms, wire, ribbon, and paste. Indium Corporation's Technical Support Engineers provide rapid response to all technical inquiries.

Safety Data Sheet

The SDS for this product can be found online at <http://www.indium.com/sds>

Reflow

Recommended Profile:



The stated profile recommendations apply to most Pb-free alloys in the SnAgCu (SAC) alloy system, including SAC305 (96.5Sn/3.0Ag/0.5Cu). This can be used as a general guideline in establishing a reflow profile when using **PoP Flux 89HFLV-B Solder Paste**. Deviations from these recommendations are acceptable, and may be necessary, based on specific process requirements, including board size, thickness, and density. Start with the linear profile, then move to the optional soak profile, if needed. The flat soak portion of the linear profile (linear shoulder) may also be eliminated.

| Reflow Profile Details | SAC305 Parameters | | Comments |
|---|-----------------------|------------------|--|
| | Recommended | Acceptable | |
| Ramp Profile (Average Ambient to Peak)— Not the Same as Maximum Rising Slope | 0.5–1°C/second | 0.5–2.5°C/second | To minimize solder balling, beading, hot slump |
| Soak Zone Profile (Optional) | 30–90 seconds | 30–120 seconds | May minimize BGA/CSP voiding Eliminating/reducing the soak zone <u>may</u> help to reduce HIP and graping |
| | 160–180°C | 150–200°C | |
| Time Above Liquidus (TAL) | 45–60 seconds | 30–100 seconds | Needed for good wetting/reliable solder joint |
| Peak Temperature | 230–260°C | 230–262°C | As measured with thermocouple |
| Cooling Ramp Rate | 2–6°C/second | 0.5–6°C/second | Rapid cooling promotes fine-grain structure |
| Reflow Atmosphere | Air or N ₂ | | N ₂ preferred for small components and PoP applications |

All parameters are for reference only.

Modifications may be required to fit process and design.

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All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

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