Product Data Sheet

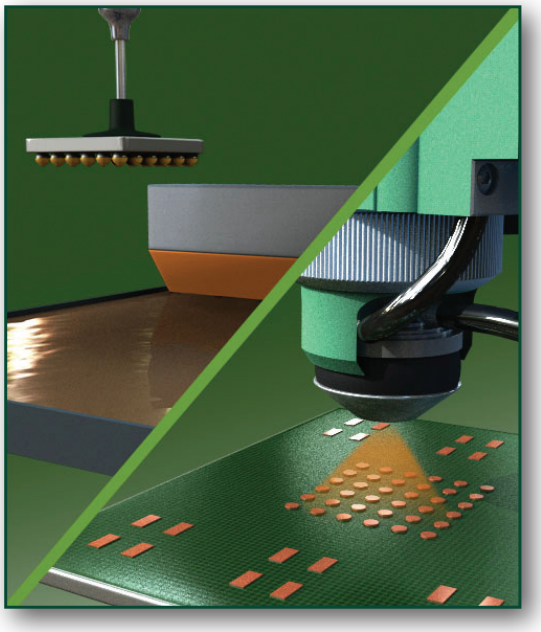
Flip-Chip Flux NC-510

Features

- Halogen-free – no intentionally added (NIA) halogens
- Suitable for Pb-free or SnPb alloys
- Designed for flip-chip dipping applications
- Ultralow residue
- Compatible with underfills
- Bubble-free (airless) packaging

Introduction

Flip Chip Flux NC-510 is a NIA halogen-free, no-clean flip-chip dipping flux which is designed to leave a completely benign, clear residue. The reduction in residue optimizes underfill adhesion and decreases possible outgassing during underfill cure.



Properties

Property	Value	Test Method
Flux Classification:	ORL0	J-STD-004 (IPC-TM-650: 2.3.32 and 2.3.33)
Color:	Light Yellow	Visual
Typical Viscosity:	11 kcps	Brookfield HB DVII+-CP (5rpm)
SIR (Ohms):	Pass (>10^9 after 7 days @ 85°C & 85% RH)	J-STD-004 (IPC-TM-650: 2.6.3.3 IPC-B-24)
Typical Acid Value:	32mg KOH/g	Titration
Typical Tack Strength:	260g	J-STD-005 (IPC-TM-650: 2.4.44)
Shelf Life:	1 year @ 0 to 30°C	Viscosity change/ microscope examination
Typical Post Reflow Residual Weight:	4%	TGA

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

Application

NC-510 is intended to be used in a nitrogen reflow environment of 100pmm oxygen or less. Some applications can utilize this material in an air environment, although best results will be obtained in an inert atmosphere. **NC-510** can be used on many surface finishes including Immersion Ag, Cu-OSP, AuNi, and AuPdNi, and is compatible with all standard flip-chip solders.

Compatibility

The compatibility of flip-chip flux residues with epoxy-based capillary underfills is determined by measuring the shear strength of the interface between the post-reflow flux and the cured underfill. The best results for **Flip-Chip Flux NC-510** have been observed with both amine- and acid anhydride-based capillary underfill chemistries.

Cleaning

NC-510 is designed for no-clean applications. If necessary, the flux can be removed by using a commercially available flux cleaner. Please contact an Indium Corporation Technical Service Engineer for recommendations of cleaners to suit your process needs.

Storage

NC-510 syringes and cartridges should be stored tip down at 0° to 30°C for maximum shelf life. **NC-510** should be allowed to reach ambient temperature before use.

Packaging

NC-510 is most commonly available in 10 and 30cc syringes. Other packaging can be provided to meet specific requirements.

Form No. 98286 R4

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Technical Support

Indium Corporation sets the industry standard in providing rapid response, on-site technical support for our customers worldwide. Indium Corporation's team of Technical Support Engineers can provide expertise in all aspects of materials science and semiconductor packaging process applications.

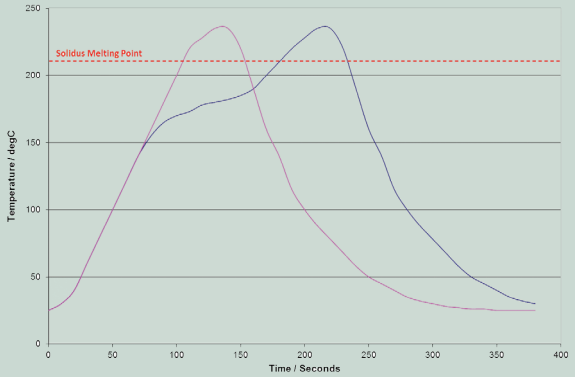
Material Safety Data Sheets

The MSDS for this product can be found online at http://www.indium.com/msds

Reflow

Recommended Profile:

Reflow Profiles: SAC305



A short preheat (150°-160°C) for less than 45 seconds may be used to reduce voiding. The profile should ideally be a linear ramp at 1-2°C/second up to 20-30°C above solidus temperature, with a rapid cool down afterwards, and a minimum time above liquidus of 20 seconds.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices.

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