

# PRODUCT DATA SHEET

# NC-809

## Ultra-Low Residue Flux

### Introduction

**NC-809 Flux** is a halogen-free, no-clean, ultra-low residue flip-chip flux, which is designed to leave minimal residue while maintaining proper wetting and exhibiting high tackiness. The reduction in residue optimizes underfill adhesion and decreases void formation by reducing outgassing in the underfill curing process. **NC-809 Flux** exhibits proper wetting due to its specially designed manufacturing process, which makes the material suitable for both flip-chip dipping applications and certain wafer-level BGA ball-mount applications. **NC-809 Flux** has high tackiness, which makes this material suitable to hold die in place during assembly, preventing shifting- or skewing-related defects.

### Features

- Excellent wetting performance
- Ultra-low residue
- Compatible with flip-chip and certain ball-attach applications
- High tack
- Compatible with a wide variety of underfills
- Dipping with minimal bridging
- Halogen-free
- No-clean

### Properties

	Value	Test Method
Color	Light yellow	Visual
Typical Viscosity	17kcps	Brookfield DV-I. 51CPE Spindle @ 5rpm after 5 minutes
Typical Tack	250gf	IPC-TM-650: 2.4.44
Typical Acid Value	110mg KOH/g	Titration
SIR (Ohms)	Pass	J-STD-004 (IPC-TM-650: 2.6.3.3 IPC-B-24)
Typical Post-Reflow Residual Weight	~6%	Gravimetric Analysis
Shelf Life	6 months when stored at 0–30°C	Viscosity change/ microscope examination

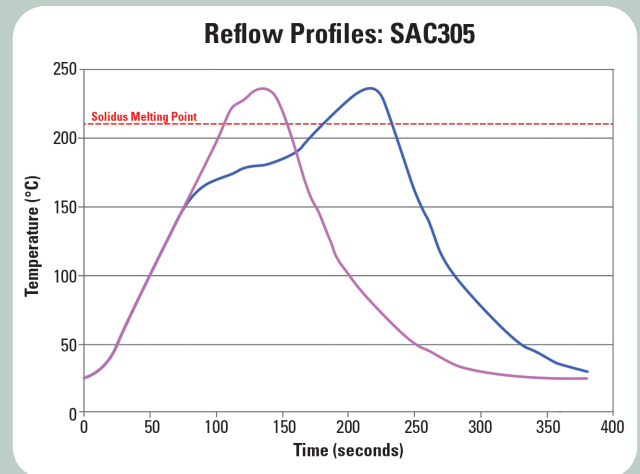
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Not to be used as incoming product specifications.

### Application

**NC-809 Flux** is a robust flux suitable for many semiconductor assembly applications. The material's tackiness makes it suitable for flip-chip dipping applications; **NC-809 Flux** is proven to solve common die shift and die skew issues during flip-chip assembly. The wetting power of **NC-809 Flux** makes the material suitable for certain wafer-level BGA ball-mount applications as well. In both of these applications, the remaining residue is minimal and benign, allowing for cleaning steps to be removed during the assembly process.

### Reflow

#### Recommended Profile:



**NC-809 Flux** is intended to be used in a nitrogen reflow environment of 100ppm oxygen or less. Some applications can utilize this material in an air environment, although best results will be obtained in an inert atmosphere.

**NC-809 Flux** can be used on many surface finishes, including immersion Ag, Cu, and AuNi. These surfaces can be soldered with Pb-free alloys, but in order to achieve maximum reduction in residue, nitrogen is recommended.

From One Engineer To Another®



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### Cleaning

**NC-809 Flux** 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 Support Engineer for recommendations of cleaners to suit your process needs.

### Packaging

**NC-809 Flux** is most commonly available in 10g or 25g (10cc or 30cc) syringes or 100g jars. Contact us to discuss additional packaging to meet specific requirements.

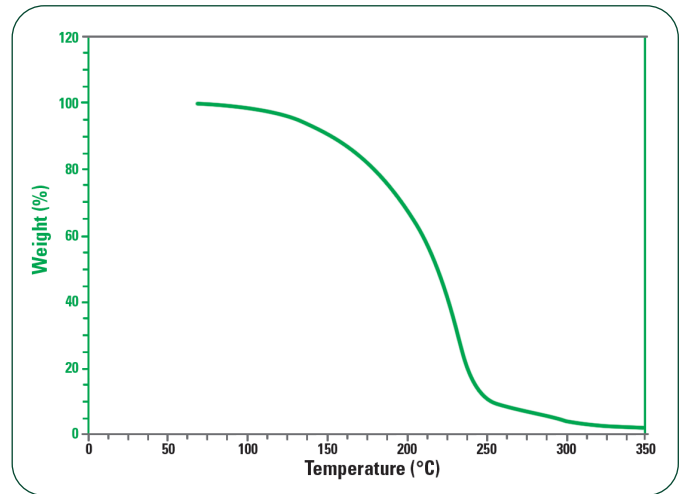
### Storage

**NC-809 Flux** syringes and cartridges should be stored tip down for maximum shelf life. **NC-809 Flux** should be allowed to reach ambient temperature before use if stored cold.

### Technical Support

Indium Corporation sets the industry standard in providing rapid response, onsite 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.

### Thermogravimetric Analysis (TGA)



TGA was performed at a ramp rate of 10°C per minute.

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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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