

PRODUCT DATA SHEET

NC-702

Near-Zero Residue Adhesive Solution

Introduction

NC-702 is a no-clean, near-zero residue, halogen-free adhesive solution designed for holding chips, dies, or solder preforms in place to prevent skewing and tilting during placement and reflow processes. Its chemical design enables it to hold a die in place during reflow and evaporate out while formic acid is released to enhance soldering. Its halogen-free nature makes **NC-702** environmentally-friendly, as well. Its near-zero residue feature also makes it compatible with the subsequent molding or underfill processes, without the risk of delamination.

Features

- Acts as an “adhesive solution”—removing the tooling process—thereby reducing skewing and die flying
- Minimum residue from adhesive solution works with formic acid processes using a typical SAC alloy reflow profile or higher peak temperature
- Near-zero residue
- Compatible with molding and underfill material
- Compatible with most common SAC alloys
- Halogen-/Halide-free
- Low-voiding

Properties

	Value	Test Method
Typical Viscosity	10kcps	Brookfield HB DVII±CP
Typical Tackiness	~240gF	J-STD-004A
Typical Acid Value	~0mg	KOH/g Titration
Typical Reflow Residual Weight	Less than 0.2%	Gravimetric Analysis
Shelf Life	6 months when stored between 0–30°C	Viscosity change/ microscope examination

All information is for reference only.

Not to be used as incoming product specifications.

Application

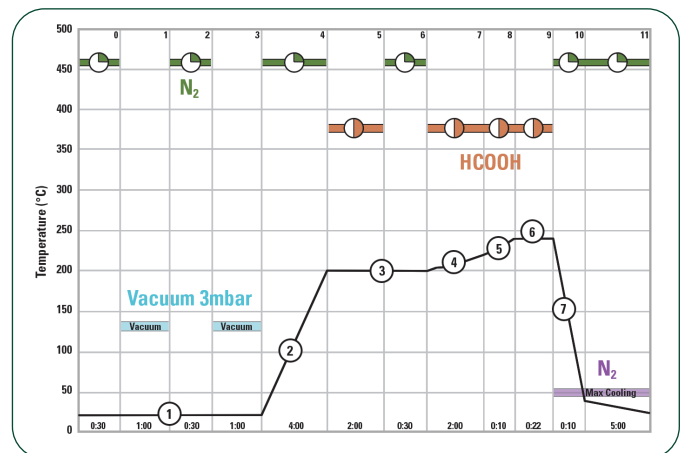
The amount of material deposited on the substrate can be optimized by changing equipment parameters, such as dwell time and depth in dipping process.

Storage

NC-702 should be stored at room temperature (0–30°C) for optimal shelf life. Storage temperatures should not exceed 30°C.

Reflow

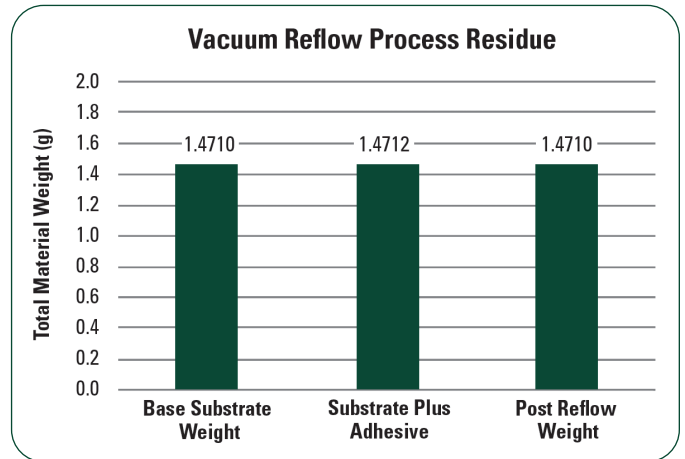
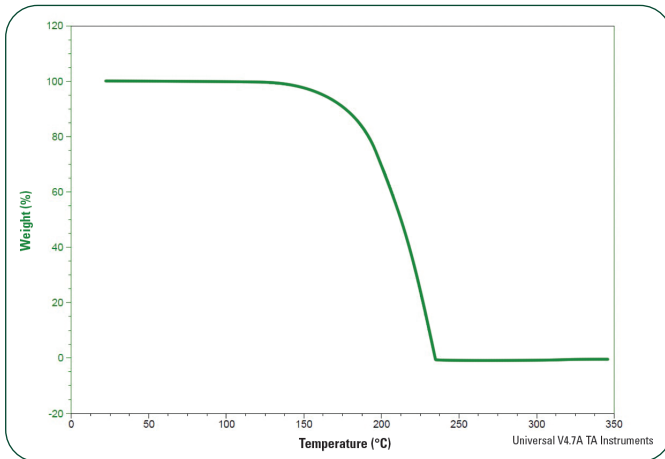
NC-702 is designed for reflow in a nitrogen/vacuum with formic acid environment, for reflowing of SAC alloys or higher-liquidus-temperature alloys. A suggested profile is given; however, deviations from this profile are acceptable and may be necessary based on specific process requirements.



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Flip-Chip Application

NC-702 exhibits minimal residue after reflow. As flip-chip processes begin to be used for applications involving ultrafine-pitch sizes and pad gaps, NC-702 provides a long-term solution with a formic acid reflow process. As shown in the TGA (10°C/sec ramp up rate) and bar chart below, the weight of a substrate with a precise amount of adhesive attached compared to the weight of the same assembly post-reflow in a vacuum reflow process shows there are no measurable adhesive residues present post-reflow (NZR). Having the minimal amount of residue possible post-reflow makes NC-702 ideal for use in a formic acid environment, as well as eliminating the need for post-reflow residue removal. NC-702 also exhibits good compatibility with underfill material.



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, Indium Corporation's Technical Support Engineers provide rapid response to all technical inquiries.

Safety Data Sheets

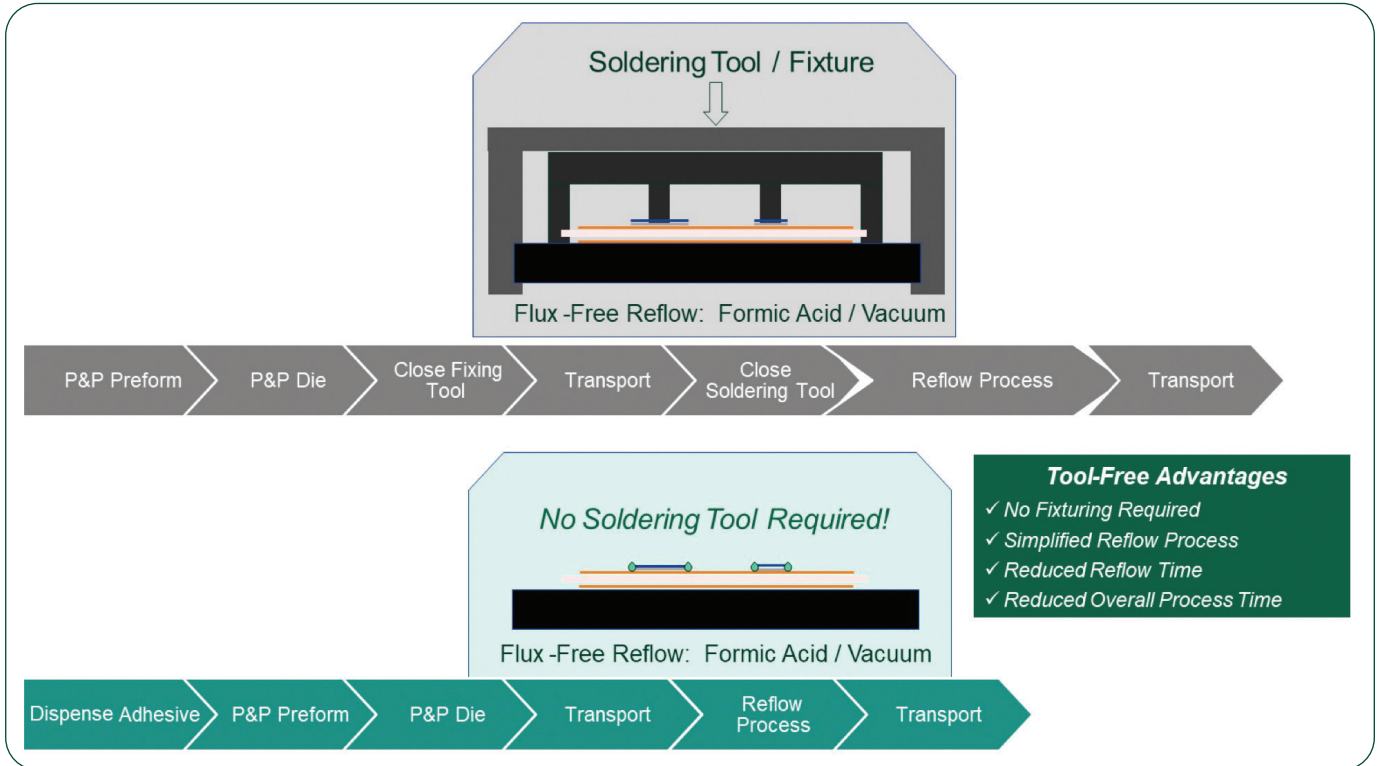
Please refer to the SDS document within the product shipment, or contact our local team to receive a copy.



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Tool-Free Assembly Application

NC-702 proves to be an excellent solution for processes requiring attachment of solder preforms, chips, or dies to substrates. A typical tooling process is shown in the graphic below. NC-702 is proven to work well with these chips, dies, or solder preforms to function as a pre-attach step, greatly reducing fixturing and tooling costs by removing the tooling steps which could potentially cause substrate movement before reflow.



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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.

Contact our engineers: askus@indium.com

Learn more: www.indium.com

ASIA +65 6268 8678 • CHINA +86 (0) 512 628 34900 • EUROPE +44 (0) 1908 580400 • USA +1 315 853 4900

