

# APPLICATION NOTE

# Storage, Handling, and Shelf Life of Solder Preforms, InFORMS<sup>®</sup>, and Ribbon

## Storage Conditions

Solder preforms, InFORMS<sup>®</sup>, and ribbon are manufactured and packaged to minimize oxidation. Since no container offers complete isolation from oxygen in ambient air, solder will slowly oxidize, which may result in a reduction in wetting. The rate of oxidation is proportional to the surface area, humidity, temperature, time, and available oxygen. High lead-containing preforms are particularly sensitive to humidity.

Unopened containers of solder preforms should be stored  $\leq 25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ) and  $\leq 55\%$  relative humidity (RH). Ordering frequency and package size should be adjusted to daily or weekly usage rates. A FIFO (first in, first out) inventory system should be practiced to ensure proper stock rotation. Preforms should be used prior to the expiration date listed on the packaging label.

Containers should be opened just prior to use. Quickly return unused preforms to their original container. Ideally, previously opened containers of preforms should be stored in an inert gas (ex. nitrogen, argon) dry box (0–10% RH) to maintain the original shelf life or used within 1 month (while stored at  $\leq 25^{\circ}\text{C}$  and  $\leq 55\%$  RH).

These materials have also been tested successfully to pass the ISTA 2A Standard for in-transit shipping: conditioning is  $38^{\circ}\text{C}$  ( $100^{\circ}\text{F}$ ) for 72 hours.

## Handling

Solders are soft metals. To avoid dimensional damage and scratching, avoid shaking or excessive vibration when handling preform containers. Excessive scratching increases surface area, which results in higher oxide level formation. The flux coating (where applicable) can also be reduced by vibration, resulting in variable soldering results.

To avoid contamination, it is recommended that a vacuum pick-up system be used. If a vacuum pick-up system is not available, avoid contamination by handling parts using lint-free gloves or other instruments designed to avoid contaminants.

## Shelf Life Statement

The shelf life of any solder product is only a guideline and is dependent on the customer's application, storage, and handling conditions. To maximize the shelf life, storage conditions should reduce the potential for outside contamination and oxidation. Below are the recommended storage conditions for Indium Corporation soldering products.

### Solder Preforms and Ribbon

Solder preforms and ribbon should be stored in their original unopened container in an inert gas (ex. nitrogen, argon) dry box (0–10% RH) to maximize shelf life. This inhibits growth of oxides and any potential for corrosion that can compromise the wetting/soldering performance.

	Shelf Life
Lead-Free Alloys	1 year from Date of Manufacture*
<50% Lead Alloys	1 year from Date of Manufacture*
$\geq 50\%$ Lead Alloys	6 months from Date of Manufacture*

\*When stored at  $\leq 25^{\circ}\text{C}$  and  $\leq 55\%$  RH

## Personal Hygiene

When handling solder preforms and fabrications, observe normal standards of industrial hygiene and any other requirements noted in the relevant SDS. These include (but are not limited to):

1. Avoid unnecessary skin contact
2. Avoid process fumes
3. No smoking or eating when handling solder preforms and associated processing chemicals
4. Wash hands after use

This application note 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. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

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.

## From One Engineer To Another<sup>®</sup>

Contact our engineers: [askus@indium.com](mailto:askus@indium.com)

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