



Storage, Handling, and Shelf Life of Solder Preforms, Wire, and Ribbon

Our thanks to Indium Corporation for allowing us to reprint the following article.

Storage Conditions

Solder preforms, wire, 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 at or below normal room temperature and under 80% relative humidity. 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 insure 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. Return to a nitrogen dry box with the container opened to purge out oxygen.

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, preforms should be handled using lint-free gloves

Personal Hygiene

When handling solder preforms and fabrications, observe normal standards of industrial hygiene and any other requirements noted in the relevant MSDS. These include:

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.

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 a nitrogen dry box to optimize their shelf life. This inhibits growth of oxides that can compromise the wetting performance. Stored properly, preforms can have a shelf life of up to five years.

Since lead-containing alloys are more prone to oxidation, they should be used within six months of the manufacture date. However, by following proper storage conditions, they can be used up to two years after the date of manufacture.

Flux-coated preforms should also be stored in a clean, dry and cool environment for the same times as noted above. The main concern is that flux-coated preforms at the end of their shelf life tend to adhere to each other. When the flux coating is activated, it should remove any oxides that have formed.

Solder Wire

Pb-free flux-cored wire and solid wire are best used within two years of the manufacture date, provided they are stored in a clean, dry environment. Lead-containing solder wire should be used within six months of the manufacture date, but can be used up to two years after the date of manufacture if properly stored during that time.

Heat-Springs[®]

Heat-Springs[®] should be stored in the original container, closed securely, in 80%RH or less and at temperatures less than 22°C. Heat-Springs can also be stored in an inert atmosphere such as a nitrogen dry box. Standard

shelf life for Heat-Springs in their original bundle pack is two years. Standard shelf life for Heat-Springs packaged on tape and reel and sealed in a metallized bag is one year.

