



TECHNICAL BULLETIN

Achieving Consistent Mixing with EP1121 & EP1282 Cartridges

ResinLab EP1121 and EP1282 are low-viscosity, two-part epoxies designed for potting and encapsulation. Their flow characteristics are ideal for reaching voids in complex geometries, making them a popular choice for protecting electronic assemblies.

However, like many low-viscosity two-part epoxies, properly mixing the two components behind EP1121 and EP1282 is essential to achieve proper curing and end-performance. In this bulletin, we outline best practices to achieve the proper mix and avoid defects during curing.

The Basics: Mixing Properly & Avoiding Cure Defects

While these low-viscosity formulas are ideal for potting, the two components are not perfectly miscible and require aggressive mixing to ensure a proper cure. Issues commonly arise with small shot sizes, slow dispensing speeds, and inconsistent flow rates. Down the line, these issues can lead to scrap and inconsistent performance.

Use a Longer, More Aggressive Static Mixer

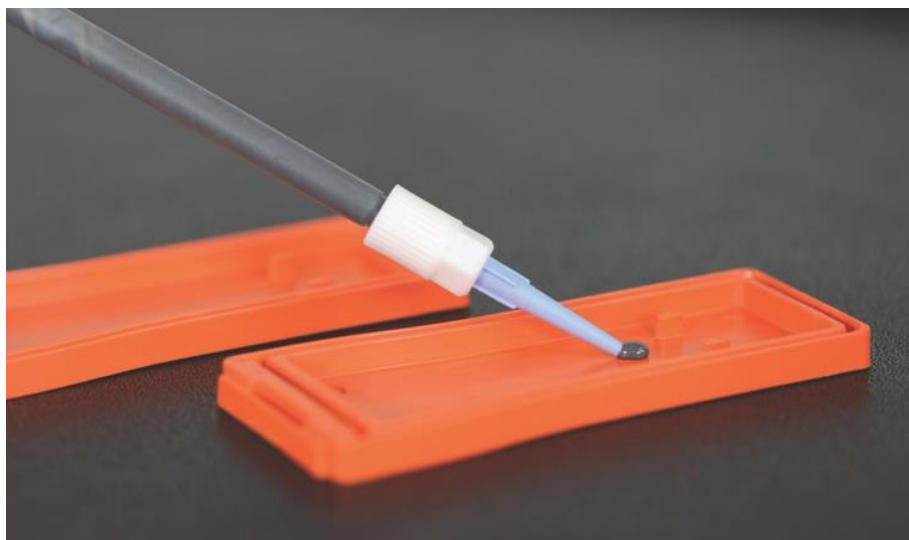
Use longer, narrower static mixers with many elements, such as the TAH EA187-48LL Series, to promote thorough blending of both components.

Create Consistent Flow & Backpressure

Many users add a needle tip to the mixer outlet. The addition promotes backpressure and can improve mixing performance. Keeping pressure consistent during mixing is essential for reliable results.

Avoid Draining Fluid Between Stops & Starts

Frequent stops and starts during mixing may create cure issues. When material is not actively being dispensed through the static mixer, do not let it drain into the part, since it may not be fully mixed.



Preventing Complications with Smaller Applications

Using a single cartridge of EP1121 or EP1282 across multiple parts often requires the operator to frequently stop and start mixing. When pressure is removed from the cartridge frequently, mixing performance can suffer, and the product may cure improperly.

In these situations, many users pre-mix the material by dispensing it through the static mixer into a secondary container. Users then apply the encapsulant in mixed form from the secondary container. For this method, the Fisnar EARB218 Round Manual Dispensing Bottle and Fisnar EALLC18 Luer Lock Cap work well as a container.



Spotting Two-Part Epoxies that Fail to Cure

In many two-part materials, spotting a failed cure can be as simple as identifying a marbled color in the dispense material. Since both components of EP1121 and EP1282 are the same color, visual confirmation of the mix is difficult, and close attention is required to detect a failed cure. Users can identify curing issues in similarly colored epoxies by looking for materials that remain wet or sticky after the full cure schedule has elapsed.

Extra Care is Required for Larger Cartridges

Maintaining consistent flow and ensuring an aggressive mix is essential for larger cartridges of EP1121 and EP1282. These larger volume containers can exacerbate the mixing and curing issues. When using larger cartridges, minimize stops and starts, maintain a consistent flow, and use longer mixers.

Quick Tips for Dispensing Low Viscosity Fluids

- **Use a long static mixer** designed for more aggressive mixing
- **Add a needle tip to the mixing tip** to create backpressure
- **Maintain consistent pressure** while avoiding stops & starts
- **Use pneumatic dispensers** for consistent pressure
- **Pre-bleed a new mixer** before applying material
- **Maintain a steady flow rate** throughout dispensing