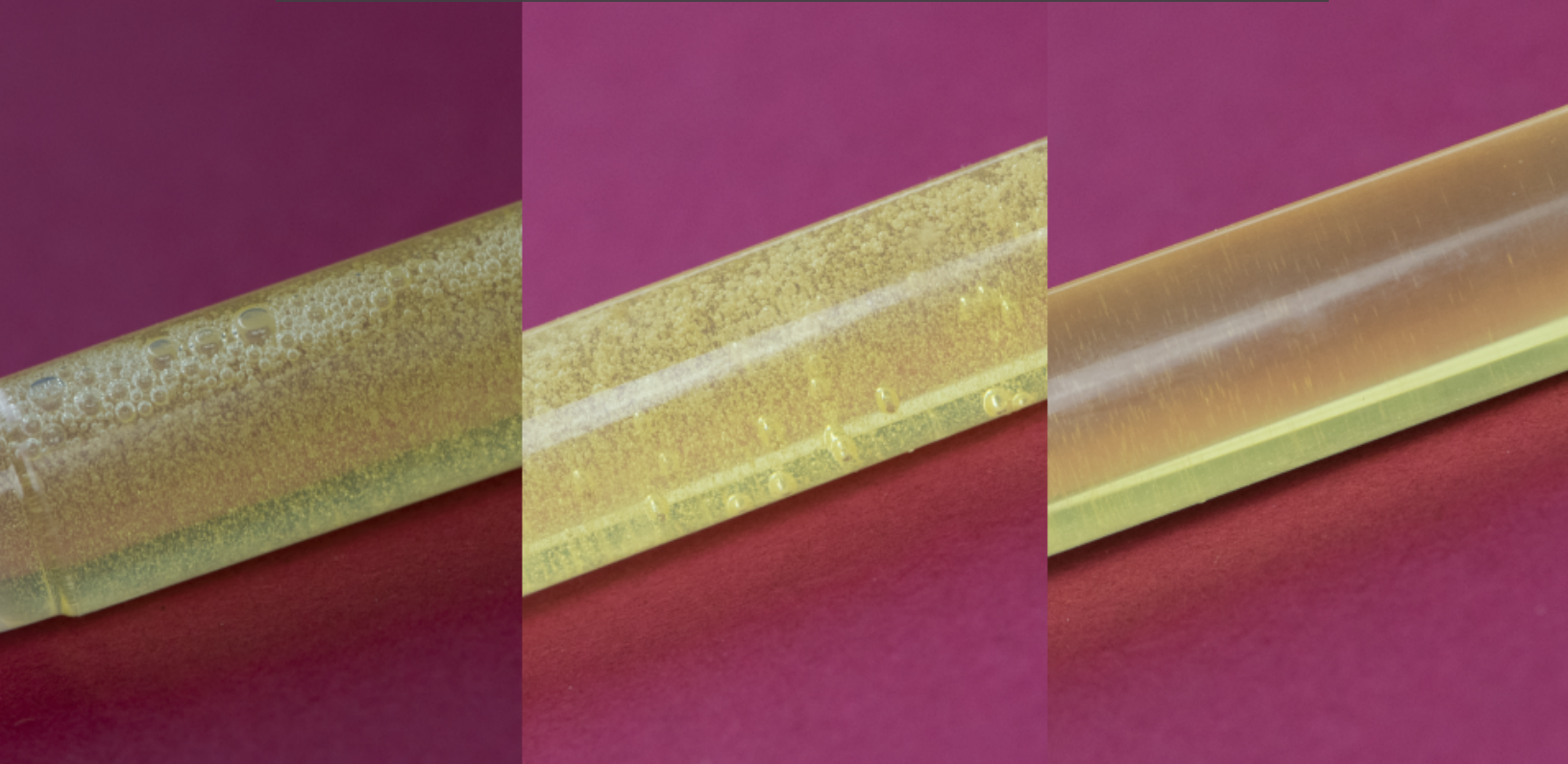


How Do You Minimize Bubbles in a Two Part Epoxy System?



WHY IS IT IMPORTANT TO MINIMIZE THE FORMATION OF BUBBLES

Adhesive Performance

Bubbles can cause the formation of voids or gaps between the adhesive and the bonded surface which can lead to reduced bond strength or adhesion failure

Appearance

In applications where optical clarity or appearance is important, bubbles may result in a significant reduction in clarity and an uneven, bumpy surface

It is important to note that in some cases it may not be possible to completely remove air bubbles and in certain situations they may have no impact on functionality.

Methods of Minimizing Bubbles in a Two Part Epoxy

Proper mixing & degassing is crucial for minimizing air bubbles in epoxy systems

1 MIX BY HAND USING A STIRRING TOOL



Use a stirring tool, slowly and thoroughly mix the material together, carefully avoiding air injection into the compound

2 UTILIZE A CENTRIFUGE



Use a centrifuge for removing air bubbles from an already mixed, unfilled two-part epoxy system. Refer to the user manual for specific centrifuge instructions. Here are some general guidelines:

STEP 1

Operate the centrifuge at 1,000 to 3,000 RPM for a few minutes (times and speeds may vary depending on the type of product being used)

STEP 2

If bubbles persist, repeat the centrifuge cycle and adjust the RPM

Note: This process may need to be repeated several times until the desired result is achieved

3 UTILIZE VACUUM DEGASSING



STEP 1

Place the mixed epoxy in a vacuum chamber, ensuring the container size is 5 to 10 times the volume of the epoxy

STEP 2

Pull a vacuum of 29 inches of Hg

STEP 3

Implement a bumping technique by cycling the vacuum with release to air a few times to achieve optimal results

4 USE HEAT TO LOWER THE VISCOSITY



Place the mixed epoxy in a shallow vessel and add heat between 35°C to 40°C for a short time period

Note: Pre-heating is not ideal for most epoxies since the working life will be negatively impacted and especially for a quick-curing epoxy, it is not recommended