

Tech Tip #2

How To Work With Electrically Conductive Adhesives

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In general all electrically conductive adhesives contains approx. 70 to 80 % silver.

All filled adhesives settles in jars and have to be stirred and mixed carefully before use. A "normal" mix-time is 3 – 5 minutes, but may vary depending on product.

It is essential that you use CLEAN tools, CLEAN sticks, CLEAN jars, CLEAN syringes (**NOT silicone oil** – Medical syringes) in the mixing of the adhesives and in the bonding process. There is a significant risk of contaminating the adhesive with silicone.

It is essential that you have good production control, CLEAN tools and working habits. That operators use clean "Nitrile" rubber protective gloves if needed and if they get epoxy residues on their skin – they have to clean / wash their skin with soap and water (NO Solvents!). An important worker safety and environmental issue!

Open the adhesive jar and stir the adhesive thoroughly, if a 2-part system: stir part A (resin) container and contents of part B (hardener) container thoroughly before mixing the two together, then stir the two for at least for 2 – 3 minutes.

Use ONLY clean tools / spatulas.

Please note that when mixing / stirring you will stir in air, you may need to degas, de-air the mix by using vacuum or a centrifuge.

If syringe dispensing will be used: Use ONLY clean syringes for industrial use. Do NOT use Medical type syringes! – **They are ALWAYS silicone oil treated.**

If mixing of the adhesive is done in a separate jar – always use chemically strong, safe jars like PP (polypropylene) or glass.

Mix ratio tolerance: always try to be better than +/- 5 %.

Do not switch lids on jars! If you put the lid from part B (hardener) on part A, there is a big risk that the part A will start to react (cure).

NEVER add any solvent or alcohol to the adhesive to lower viscosity, normally all electrically conductive adhesives are 100% solid systems, a solvent may / will destroy the adhesive.

When working with the adhesive ALWAYS practice clean and safe working habits, NEVER place the adhesive on absorbing materials, like paper, wood, cloths etc. These type of materials will absorb the resin in the electrically conductive adhesive and give a weak, non stable and poor conductive joint.

ALWAYS clean tools after use in isopropanol, alcohol or a ketone based solvent.

If you pre-mix and then like to freeze the adhesive, please make sure that the syringe or jar is thoroughly closed, that no air may be introduced into the adhesive. To be on the safe side, always put the syringe or jar in a sealed plastic bag and label it accordingly, with date and necessary info. Normal freeze temp is - 40 °C.

In theory, you may freeze most of the conductive adhesives as many times you like, but remember that every time you do so, you steal a little bit of the pot-life, ("shelf life"). A freezing procedure will also prevent the adhesive from settling of the filler, which is nice if filled in syringes.

To avoid settling in syringes at room temperature (+23 C), use a "Roller" that rotates the syringes. In general we recommend a max of 5 hours use in upright position if the adhesive if it settles easy, or a max 8 hours use in general.

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