



During crystallisation, organic compounds go from a liquid phase to a solid crystalline structure. In some cases the crystallisation process is an unwanted phenomenon.

In the case of epoxy systems, the risk of crystallisation increases when stored at low temperatures. Crystallisation is a phenomenon that occurs in a very random way and is therefore hard to predict. The crystallisation process is ultimately dependent on the purity of the raw materials used in the polymer system, the lower the amount of contaminants that are present in the system, the higher the risk of crystallisation. It is also important to remember that as soon as there is a resin crystal present in the mixture, the crystallisation reaction will start. Crystallisation is a function of the storage temperature, and so decreasing this temperature will increase the polymer system's tendency to crystallise.

How can you identify crystallisation? A crystallised product becomes very thick and granular and has a dull appearance instead of their normal gloss. The appearance can be an indication that the product is crystallised and not gelled, as frequently suspected. A second test can be done by slightly warming up the product. When the product stays hard, it is gelled. A crystallisation process can be undone by adding extra heat energy and the product returns to the liquid phase.

- **Procedure of decrystallisation a two component product**

In the case of two component systems, the two components should be heated separately. The risk of adding too much energy resulting in a curing reaction is low.

1. Put the opened pot into the oven at a temperature of 60-70°C for half an hour.
2. Check the product and if possible mix the already liquid material with a spatula. Put the pot again in the oven for half an hour at 60-70°C.
3. Repeat step 2 until the product has returned completely to a liquid phase. It is very important to decrystallise the product completely. If all the crystals haven't dissolved, the tendency to recrystallise is extremely high once the product cools down.
4. Allow product to return at room temperature before mixing the resin and hardener system together as the higher temperature will decrease your shelf life.

- **Procedure of decrystallisation a one component product**

In the case of a one component system, care must be taken when the material is heated up, too much heating can result in the initiation of the polymerisation reaction.

1. Put the opened pot into the oven at a temperature of 40°C for half an hour.
2. Check the product and if possible mix the already liquid material with a spatula. Put the pot again in the oven for half an hour at 40°C
3. Repeat step 2 until the product has returned completely to a liquid phase. It is very important to decrystallise the product completely. If all the crystals haven't dissolved, the tendency to recrystallise is extremely high once the product cools down.

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