

Silicone Moulds and Thixotropic Catalyst

Description

Silicone is a two component silicone elastomer vulcanizing at room temperature by a poly-condensation reaction. The result is a flexible, elastic material presenting an excellent tear resistance.

Silicone is usually catalysed with 5 parts of silicone catalyst but when a short cure rate is needed silicone catalyst can be used. Thixotropic catalyst is a complementary product used to adapt silicone to casting by embossing.

Usages

Moulds or membranes for reproduction made from silicone is used for the manufacture in series of pieces in filled polyester, plaster, antural or artifical concrete (reconstituted stone), cellular PUR with integrated skin or compact PUR etc.

Silicone finds it applications in the following fields:

- Building industry: prefabricated elements of facades and decorative panels.
- Sculpture, statuary art, restorations.
- Interior decoration.
- Furniture, casting of piece of furniture or decorative panels.
- Stage and broadcasting studio decoration.

Effects of Silicone Catalyst

The use of silicone catalyst increases the curing speed of the mould. De-moulding in 5 hours and 90 minutes is possible although the pot life of the catalyst mix decrease. It is to be noted that the tear strength is not affected if the ratio is less than 5 parts to 100 parts.

The silicone catalyst also allows the user to compensate for the influence of low temperatures during the curing time. For example - when the temperature is 10°C the additions of 5 parts of silicone allows a de-moulding after 24 hours.

Effects of Thixotropic Catalyst

Thixotropic catalyst is a product capable of modifying the theology of the silicone & catalyst mix in order to make the catalysed mix suitable for taking overhead or vertical impressions. It is advisable to add 2 parts of Thixotropic catalyst to the mix consisting of 100 part of silicone and silicone catalyst.

De-gassing is not necessary. The mix is to be applied by brush in successive layers on the model to be reproduced, a minimum of three layers are generally required. The addition of 2 parts of Thixotropic catalyst allows a pot life of the mixture of approximately 45 minutes.

The time between application of two successive layers is 2 to 3 hours and de-moulding after application of the last layer is 8 to 12 hours. This product of a

past consistency is used after manual mixing. It is particularly adapted for the filing of undercuts.

Directions for use

Re-homogenisation

A slight separation of silicone can sometimes occur. In that case a re-homogenisation before use is necessary. This operation has to be done directly in the original container either manually using a spatula or mechanically using a stirrer.

De-gassing

After catalysation the mix should be de-gassed to remove any introduced air bubbles. De-gassing is carried out under a primary vacuum of 15 to 40 mbar for about 5 to 10 minutes taking care to break the vacuum twice. A container with a high diameter/height ratio will facilitate de-gassing.

Storage and Shelf Life

Silicone & catalyst and thixotropic catalyst must be used within 6 months from the delivery date.

To keep all the properties of silicone and its complementary products, the following conditions must be applied:

- Store the products in their original unopened containers at a temperature of below 30°C.
- Use the product as soon as the container is opened.

Health and Safety

When handling the complementary products or their mixes with silicone, care should be taken not to swallow them and to avoid prolonged and repeated contact with the skin and splashes in the eyes. In the case of skin contact, wash immediately with plenty of soap and water. In case of eye contact wash immediately with running water for at least 15 minutes and consult a doctor.

MIX AND USE AS FOLLOWS

25g silicone rubber	add 1.2g catalyst	App. = 32 drops
50g silicone rubber	add 2.5g catalyst	App. = 65 drops
75g silicone rubber	add 3.7g catalyst	App. = 97 drops
100g silicone rubber	add 5g catalyst	App. = 130 drops
150g silicone rubber	add 7.5g catalyst	App. = 195 drops
200g silicone rubber	add 10g catalyst	App. = 260 drops

250g silicone rubber	add 12.5g catalyst	App. = 325 drops
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