Condensation Cure Silicone Rubber

Product description

MBSIL-T Series silicones are two compounds, liquid, tin cured silicone rubber that have exceptional tear strength and working properties, cured in room temperature. A range of materials can be casted into the cured silicone molds : plaster, gypsum, concrete , wax, polyurethane ,polyester resin are typically used.

Features

- Outstanding release properties
- High flowability and long working time
- High tear strength & tear strength
- High elasticity, for easy removal of complex replica parts
- Can add thixotropic for vertical surface application

Applications

MBSIL-T Series silicones are good for making molds for resin, polyester, pu, wax, plaster, gypsum, natural and synthetic cement (artificial stone),GRC, soap, etc....detailed application like following:

- Art and decoration: soap, candle, aquarium decoration, crafts molds.
- Furniture: concrete ,GFRC furniture, artificial stone molds
- Architecture: column, fountain molds, architectural restoration.

Technical Data Sheet

Model Code	**MBSIL-T05**	**MBSIL-T10**	**MBSIL-T15**	**MBSIL-T20**	**MBSIL-T25**	**MBSIL-T30**	**MBSIL-T35**	**MBSIL-T40**
Hardness - Shore A	04-16	08-10	14-16	18-22	23-27	28-32	25-27	36-40
Viscosity - Cps	12000-16000	10000-14000	12000-16000	14000-18000	16000-20000	26000-32000	22000-35000	14000-18000
Mixing Ratio - %	2%	2%	2%	2%	2%	2%	2%	2%
Tear Strength - KN/m2	12-16	19-23	15-18	19-23	23-27	28-30	23-27	22-25
Tensile Strength - Mpa	3-5	4-6	3.5-5.5	4-6	4-6	5-7	4-6	4-6
Shrinkage - %	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Elongation - %	420-530%	400-500%	450-550%	450-550%	450-550%	350-500%	350-500%	350-500%

Note: 1. The data are based on the operation under room temperature of 25 ℃.

2. Pot life and curing time can be adjusted, and changed by different ratio of catalyst. We recommend 2% to 3% catalyst.
3. Different Colors of base silicone are available , such as red ,pink ,green ,blue ,yellow and so on.

How to use

1. Substrate Preparation

The surface of the original should be clean and free of loose material. If necessary, and in particular with porous substrates, use a suitable release agent such as petroleum jelly or soap solution.

2. Mixing

Thoroughly stir Part A (silicone base) before use as filler separation may occur upon prolonged storage.

Weigh 100 grams Part A (silicone base) and 3 grams Part B (curing agent) in a clean container. Mix together until the curing agent is completely dispersed in the base. Hand or mechanical mixing can be used, but do not mix for an extended period of time or allow the temperature to exceed 35°C (95°F). Mix suitably small quantities to ensure thorough mixing of the parA (silicone base) and part B (curing agent).

It is strongly recommended that entrapped air be removed in a vacuum chamber, allowing the mix to completely expand and then collapse. After a further 1-2 minutes under vacuum, the mix should be inspected and can be used if free of air bubbles. A volume increase of 3-5 times will occur on vacuum de-airing the mixture, so a suitably large container should be chosen.

Caution: prolonged vacuum will remove volatile components from the mix and may result in poor thick section cure and non-typical properties.

Note: If no vacuum de-airing equipment is available, air entrapment can be minimized by mixing a small quantity of par A (silicone base) and part B (curing agent), then using a brush, painting the original with a 1-2mm layer. Leave at room temperature until the surface is bubble free and the layer has begun to cure. Mix a further quantity of base and curing agent and proceed as follows to produce a final mold.

3. Pouring the Mixture and Curing

Pour the mixed Par A (silicone base) and Part B (curing agent) as soon as possible onto the original, avoiding air entrapment. The catalyzed material will cure to a flexible rubber within 24 hours at room temperature (22°C-24°C/ 71.6°F - 75.2°F) and the mold can then be separated from the original. If the working temperature is significantly lower, the cure time will be longer. If the room temperature or humidity is very high, the working time of the catalyzed mixture will be reduced. The final mechanical properties of the mold will be reached within 7 days.

ADDITIONAL INFORMATION

Reproduction of Vertical Surfaces

If a skin mold is required of a vertical object or surface and cannot be made by normal pouring techniques, the catalyzed mixture can be made non flowable by the addition of thixotropic agent.

1. Prepare the original as described earlier.
2. Brush the original with a thin layer of catalyzed mixture. Repeat the operation when the first layer has started to cure, to achieve a coating thickness of >2mm. Leave to cure at room temperature until the material is tacky.

3. Prepare a new catalyzed mixture of silicone and add 1% by weight of thixotropic additive and mix thoroughly until a paste consistency is reached. De-airing of the mixture is not required.
4. Using a spatula, cover the coated original with the thixotropic coating until all undercuts are filled; leave to cure for 24 hours at room temperature.
5. Construct a support mold using polyester resin or plaster and allow to set in contact with the silicone coating. Carefully remove the support mold. Peel the rubber off the original and place in the support mold.

Use at High Temperatures

Some molds produced from condensation cure silicone rubbers can degrade when exposed to temperatures above 150°C (302°F) over a period of time or when totally confined in storage at high ambient temperatures. This can result in softening and loss of elastic properties.

Resistance to Casting Materials

The chemical resistance of fully cured silicone rubber is excellent, and similar to all condensation cure silicone elastomers. It should be noted however that ultimately, resins and other aggressive casting materials will attack silicone molds, changing physical properties, surface release and possibly mold dimensions. Molds should be checked periodically during long production runs.

Shelf life

Twelve (12) months from date of shipment when stored at 25 °C in the original sealed packages.

Package

Silicone Packed in clean 25kg/pail, 200kg/drum.
Catalyst packed in 1kg/bottle.

Health and safety

1. Catalyst contains toxic element. Avoid contact with eyes. Flush eyes with water and seek medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Children should not use this product without adult supervision.
2. MBSIL-T Series silicone is an industrial product and must not be used in food molding, dental and human skin molding applications.