# Moldstar-15

High Performance Silicone Rubber for Mold making

# Product Technical data sheet

## PRODUCT DESCRIPTION

**Moldstar-15** is an *Economical* grade condensation curing type Silicone RTV, recommended for mold making applications. This is a flowable grade, having good mechanical strength and cures with various catalyst options (depending on the application requirements) at room temperature to a flexible elastomer, well suited for detailed and exact reproduction of artifacts, figures, architectural items and similar objects. Moldstar-15 will reproduce the finest detail of the master and is suitable for a variety of art related and industrial applications such as mold making for reproducing prototypes, furniture, architectural items and sculptures.

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**Moldstar-15** can also be thickened with Thixopol 88 additive for *brush-on* type applications for reproducing vertical surfaces.

## PRODUCT FEATURES

- Flowable type high strength silicone rubber curing at room temperature – Excellent detail reproduction.
- Good mechanical properties - leading to long service Life.
- Highly elastic and excellent release properties – for easy de-molding.
- Excellent chemical resistance – compatible with most molding materials with long service life.
- Vertical surface replication with the use of a thixotropic additive Thixopol-88.

## APPLICATIONS

- Moldstar-15 offers a good combination of good flow, moderate mechanical properties and excellent detail reproduction with good service life in mold making applications.
- Moldstar-15 is compatible with several master materials such as wood, metal, plastics, rubber, clay...
- Molds made of Moldstar-15 can be used to cast a variety of reproduction materials such as polyester resins, polyurethanes low melt metal alloys, epoxies, wax, gypsum, clay, concrete …..

## TECHNICAL OVERVIEW

### UNCURED PROPERTIES*

| PROPERTY | STANDARD | UNITS | VALUE |
|---|---|---|---|
| Colour | | | White |
| Viscosity Component A | | mPa.s | 12000 |
| Specific Gravity | ASTM D-1475 | | 1.194 |
| Mixed Viscosity | ASTM D-2393 | mPa.s | 8000 |
| Pot-life | | | |
| With 5% CAT-16 | ASTM D-2471 | Min. | 70 |
| With 5% CAT- 08 | ASTM D-2471 | Min. | 30 |

### CURED PROPERTIES* (With 5% CAT-08)

| PROPERTY | STANDARD | UNITS | VALUE |
|---|---|---|---|
| Hardness | ASTM D-2240 | Shore A | 15 |
| Tensile Strength | ASTM D-412 | MPa | 2.7 |
| Elongation | ASTM D- 412 | % | 300 |
| Tear Strength | ASTM D-624 | N/mm | 14 |
| Linear Shrinkage | | (%) | <0.5 |

*Typical Properties, should not be used as specification

## CATALYST OPTIONS

The choice of catalyst depends on the application method and the speed of cure needed. Moldstar-15 can be cured in to elastomeric products using the following cure options:

- **CAT-16 : Slow catalyst:** Catalyst with long work life for slow demolding (useful in pouring application). Takes about 16 hours at room temperature for complete curing.
- **CAT-08 : Medium speed Catalyst :** Catalyst with moderate work life for fast demolding (useful for brushing application). Takes about 8 hours at room temperature for complete curing.

## CATALYST PROPERTIES

| PROPERTY | CAT-16 | CAT-08 |
|---|---|---|
| Colour | Transparent | Transparent |
| Density (g/cc) | 0.95-0.97 | 0.95-0.97 |
| Viscosity (mPa.s) | 25 | 25 |
| Mix Ratio (A:B) | 100:5 | 100:5 |
| Cure time (h) | 16 | 08 |

## METHOD OF USE

- **Surface Preparation**: The master surface should be clean, free of loose materials and dust particles. With porous substrates use a suitable release agent such as petroleum jelly or soap solution.
- **Mixing of Components:** Thoroughly stir Moldstar-15 before addition of catalyst, as filler separation might have occurred during prolonged storage. *This is an important step to get the desired performance.* Select a container for mixing which is 4-5 times larger than the total material to be mixed. Weigh the A and B components in the desired ratio (100:5). Stir vigorously for several minutes scraping the sides and the bottom of the container to produce a homogeneous mix. Hand or mechanical (power) mixing can be used but do not mix for an extended air or causing over heating resulting in shorter work life.
- **De-aeration :** It is recommended that entrapped air be removed under vacuum to eliminate voids in the final product. This process will make the mixture to expand and then collapse. A volume increase of about 4-5 times will occur during the de-aeration process. Therefore, a large container should be used to accommodate this volume change. It should be also noted that prolonged application of vacuum will remove the volatiles from the mixture that can result in poor cure.
- This system is sensitive to temperature and humidity and therefore can influence the cure speed. However, the final mechanical properties of the mold will be attained in one week. The material will cure to a flexible rubber within 24 hours at room temperature and the mold can then be separated from the master.
- **Pouring the Mix and Curing:** The mix should be poured *as soon as possible* on to the original master to avoid air entrapment. The material will cure at a speed depending on the selection and the amount of the catalyst.

## HANDLING PRECAUTIONS AND SAFETY

Moldstar-15 contains constituents that have been found to be safe. Hence special handing precautions except general industrial hygiene need to be followed. Catalysts (CAT-16, CAT-08) contain organo-tin compounds and are flammable and might cause irritation upon contact with eyes and skin. Adequate protective measures are recommended. Refer to Material safety Data Sheet (MSDS) for safe use of the product

## USABLE LIFE AND STORAGE

The shelf life of Moldstar-15 and the catalysts (CAT-16, CAT-08) is 6 months from the date of manufacturing if stored below 27$^{o}$C in original unopened containers.

## PACKING

Moldstar-15 is available in following kit forms :

1. Kit of 1.050 kg (1 kg Moldstar-15 - Part-A + 50 grams of CAT-16 or CAT-08)
2. Kit of 5.25 kg (5 kg Moldstar-15 - Part-A + 250 grams ofCAT-16 or CAT-08)
3. Kit of 21 kg (20 kg Moldstar-15 – Part-A + 1 kg of CAT-16 or CAT-08)

## LIMITATIONS

This product is neither tested nor claimed as suitable for food contact, medical or pharmaceutical applications.

**Moldstar-15** is manufactured in India by :
**Performance Polymers**
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