



# Moldstar-15

Silicone Rubber for Flexible Molds

## Product Technical data sheet

### PRODUCT DESCRIPTION

**Moldstar-15** is a cost effective Silicone RTV, recommended for mold making applications. This is a low viscosity, flowable grade, having good mechanical strength and cures with various catalyst options (depending on the application requirements) at room temperature to a flexible elastomer, This grade is 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 architectural items, prototypes, furniture, and sculptures.

### PRODUCT FEATURES

- ❑ Moldstar-15 offers an optimum combination of good flow, high mechanical properties and excellent detail reproduction with good service life in mold making applications. Most suitable for 2D and simple molds without deep undercuts .
- ❑ 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, wax, soap etc
- ❑ Good mechanical properties – gives long mold life
- ❑ Highly elastic and excellent release properties – for easy de-molding.
- ❑ Work in a wide range of service temperatures.

### APPLICATIONS

- Craft Industry- figurines, decorative reproduction
- Statue/idol casts with polyester resins,
- Designer candles, soaps, artificial Jewelry
- Artificial stone, murals, architectural items, ornamental frames, buttons, stationery gifts



### TECHNICAL OVERVIEW

#### UNCURED PROPERTIES

PROPERTY	STANDARD	UNITS	VALUE
Colour			White
Viscosity Component A		mPa.s	21000
Specific Gravity	ASTM D-1475		1.1
Mixed Viscosity	ASTM D-2393	mPa.s	17000
Pot-life With 5% Cat-UL2	ASTM D-2471	Min.	20
Cure time with 5%Cat UL5	ASTM D-2471	hr.	24

#### CURED PROPERTIES\* (With 2-3% Cat-2P)

PROPERTY	STANDARD	UNITS	VALUE
Hardness	ASTM D-2240	Shore A	14-15
Tensile Strength	ASTM D-412	MPa	4.5
Elongation	ASTM D- 412	%	550
Tear Strength	ASTM D-624	N/mm	12
Linear Shrinkage		(%)	<1.0

\*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-2P : Rapid catalyst:** Catalyst with long work life for slow demolding (useful in pouring application). Takes about 24 hours at room temperature for complete curing.
- ❑ **Cat-ES20 : Fast Catalyst :** Catalyst with moderate work life for fast demolding. Takes about 16 hours at room temperature for complete curing.
- ❑ **Cat-UL2 : Medium Speed Catalyst :** demolding catalyst with short work life for high speed mold making.(useful for brushing). Takes about 12 hours at room temperature for complete curing.

## CATALYST PROPERTIES

PROPERTY	Cat-2P	Cat-ES20	Cat-UL2
Colour	Transparent	Transparent	Transparent
Density (g/cc)	0.95-0.97	0.95-0.97	0.97-0.99
Viscosity (mPa.s)	25	25	25
Mix Ratio (A:B)	100:2-3	100:5	100:5
Cure time (h)	4	16	12

## 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 (ex: 100:2-3). 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 handling precautions except general industrial hygiene need to be followed. Catalysts (Cat-2P, Cat-ES20 and Cat-UL2) 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-2P, Cat-ES20 and Cat-UL2) is 6 months from the date of manufacturing if stored below 27°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-2P)
2. Kit of 5.25 kg (5 kg Moldstar-15 - Part-A + 250 grams of Cat-2P)
3. Kit of 21 kg (20 kg Moldstar-15 – Part-A + 1 kg of Cat-2P)

## 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**

B-88, 3<sup>rd</sup> Cross 3<sup>rd</sup> Main,

Opp. ESI Sub-Regional Office

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**Limited Warranty :** The information mentioned in this data sheet is a description of the product to the best of our knowledge. Recommendations for use do not constitute a warranty of the fitness for a particular use. It is the user's responsibility to thoroughly test the product in a particular application to determine its performance and safety.