

Padsil-C15

High Performance Silicone Rubber for Pad Printing Applications

Product Technical data sheet

PRODUCT DESCRIPTION

Padsil-C15 is a *premium* grade condensation curing type Silicone RTV, recommended for pad printing application. This is a flowable grade, having high mechanical strength and cures with various catalyst options (depending on the application requirements) at room temperature to a flexible elastomer, well suited for pad printing applications. Padsil-C15 will reproduce the finest detail of the master and is suitable for a variety of pad printing applications.



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 high number of impressions and good printing effects .
- Excellent chemical resistance – compatible with most printing media.
- Good Resiliency.
- Excellent Transfer from the pad to the substrate.

APPLICATIONS

- ❑ Padsil-C15 offers a good combination of good flow, high mechanical properties and excellent detail reproduction with good service life in pad printing applications.
- ❑ Padsil-C15 is compatible with several print media.
- ❑ Padsil-C15 is well suited for *pad printing* applications used in printing on curved surfaces.

TECHNICAL OVERVIEW

UNCURED PROPERTIES

PROPERTY	STANDARD	UNITS	VALUE
Colour			White
Viscosity		mPa.s	20000
Component A			
Specific Gravity	ASTM D-1475		1.15
Mixed Viscosity	ASTM D-2393	mPa.s	15000
Pot-life			
With 5% CAT-24	ASTM D-2471	Min.	100
With 5% CAT-16	ASTM D-2471	Min.	35
With 5% CAT-04	ASTM D-2471	Min.	15

CURED PROPERTIES* (With 5% CAT-16)

PROPERTY	STANDARD	UNITS	VALUE
Hardness	ASTM D-2240	Shore A	15
Tensile Strength	ASTM D-412	MPa	4
Elongation	ASTM D- 412	%	500
Tear Strength	ASTM D-624	N/mm	18
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. Padsil-C15 can be cured in to elastomeric products using the following cure options:

- ❑ **CAT-24 : Slow catalyst:** Catalyst with long work life for slow demolding (useful in pouring application). Takes about 24 hours at room temperature for complete curing.
- ❑ **CAT-16 : Medium speed Catalyst :** Catalyst with moderate work life for fast demolding. Takes about 16 hours at room temperature for complete curing.
- ❑ **CAT-04 : Rapid Catalyst :** demolding catalyst with short work life for high speed mold making.(useful for brushing). The use of this catalyst results in durometers 5-10 higher than CAT-16. Takes about 4 hours at room temperature for complete curing.

CATALYST PROPERTIES

PROPERTY	CAT-24	CAT-16	CAT-04
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)	100:5	100:5	100:5

METHOD OF USE

- ❑ **Surface Preparation:** The substrate surface should be clean, free of loose materials and dust particles.
- ❑ It is recommended to use a suitable bonding agent to bond silicone RTV to the substrate.
- ❑ **Mixing of Components:** Thoroughly stir Padsil-C15 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: 100:5). 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 period of time to avoid entrapping large amounts of 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 substrate 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

Padsil-C15 contains constituents that have been found to be safe. Hence special handling precautions except general industrial hygiene need to be followed. Catalysts (CAT-24, CAT-16 and CAT-04) 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 Padsil-C15 and the catalysts (CAT-24, CAT-16 and CAT-04) is 6 months from the date of manufacturing if stored below 27°C in original unopened containers.

PACKING

Padsil-C15 is available in following kit forms :

1. Kit of 1.050 kg (1 kg Padsil-C15 - Part-A + 50 grams of CAT-24 or CAT-16 or CAT-04)
2. Kit of 5.25 kg (5 kg Padsil-C15 - Part-A + 250 grams of CAT-24 or CAT-16 or CAT-04)
3. Kit of 21 kg (20 kg Padsil-C15 – Part-A + 1 kg of CAT-24 or CAT-16 or CAT-04)

LIMITATIONS

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

Padsil-C15 is manufactured in India by :

Performance Polymers

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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.