Technical Data Sheet

QM 140

Quantum Silicones' 40 Durometer Condensation Cure Moldmaking Material

Product Description

Quantum Silicones' QM 140 is a two component, room temperature condensation cure silicone material. The cured rubber has excellent mechanical properties and good shelf-life stability. This material is an excellent choice for molding intricate patterns, skin molding and applications where high durometer, dimensional stability and extremely tough rubber are required.

Key Features

- High tear strength
- Low viscosity
- Fast demold time
- Excellent dimensional stability
- Complies with FDA indirect food contact regulation CFR 177.2600 when used with Cat Clear FG. Refer to Cat Clear FG data sheet for specific properties.

Main Applications

- Molds for polyester, polyurethane and epoxy resin castings
- Molds for technical articles and prototypes
- Molds for furniture and picture frame replication

Typical Properties

UNCATALYZED PROPERTIES	
Base Appearance	Beige
Base Viscosity, cps	50,000
Mix Ratio	10:1 **by weight**
CATALYST(1)	**QM CAT 140**
Color	Purple
Viscosity, cps	250
Specific Gravity, g/cm^2	1.03

Typical Properties Continued

CATALYZED PROPERTIES-QM 140	
PROPERTY	**QM CAT 140**
Catalyzed Color	Light Purple
Catalyzed Viscosity, cps	37,000
Specific Gravity, g/cm^2	1.13
Pot Life[(2)](minutes)	~45
Tack-Free Time	4 to 6 hours
Demold Time	12 to 16 hours

TYPICAL CURED PROPERTIES (3 DAYS @ 25C)	
Durometer, Shore A	38 to 42
Tensile Strength, psi	>650
Elongation, %	~300
Tear B, ppi	>160
Linear Shrinkage, %	<0.3

(1) Thixotropic and styrene resistant specialty catalysts are available. Please see individual data sheets for more information.
(2)Pot Life is defined as the time at which the catalyzed viscosity has doubled.

Cure Characteristics

The curing process begins as soon as the catalyst is mixed with the base. Under normal temperature (25C) and humidity (50% RH) conditions, the material will cure as described in the data above. Because this system is sensitive to heat and humidity, a change in cure speed may be seen if one or both of these variables are altered. Any large difference in temperature (+/-5C) or humidity (>60-70%) may change the cure profile of the material. In addition, if the product is to be used with aggressive resins such as high styrene polyester resins, it is recommended that the rubber be allowed to cure for 48 hours.

The standard catalyst for QM 140 is QM Cat 140 at a 10% level **by weight**. In order to achieve optimum physical properties and hardness from QM 140 the use of QM Cat 140 is highly recommended. QM Cat Blue is available for those needing a longer working time or those hand mixing larger quantities of QM 140. Faster cure can be obtained using DBT or a higher level of QM Cat 140. However, rapid cure of QM 140 can often result in a small sacrifice of physical properties or an increase in hardness.

Mixing and De-aeration

The following procedure should be followed for obtaining optimal performance from the QM100 series.

Charge 100 parts**, by weight**, of QM 140 and 10 parts, **by weight**, of QM Cat 140 into a clean, compatible metal or plastic container. Shake the catalyst well before use. The volume of the container should be 3-4 times the volume of the material to be mixed. This allows for expansion of the siloxane material as it de-gasses.

Mix thoroughly by hand or with mixing equipment while minimizing air entrapment until a homogeneous mixture is obtained. This will occur when the material takes on a uniform color with no visible striations. Once mixing is complete it is recommended that the material be de-aired 2-3 times by intermittent evacuation for a few minutes to minimize any imperfections due to bubbles in the cured material. Typically after releasing the vacuum 2-3 times the mass will collapse on itself at which time the vacuum should be left on only 2-4 minutes longer. For best results, machine mixing is recommended.

Shelf-life and Storage

QM140 and QM Cat 140 should be stored in their original, sealed containers in an environment that does not exceed 90F. Under these conditions the expected shelf-life of the material is 6 months.

Not for Product Specification

The technical data listed herein is provided as a reference only and **is not** intended as sales specifications. For sales and technical assistance or for product recommendations, please call 1-800-852-3147.

Quantum Silicones
8021 Reycan Rd
Richmond, VA 23237
Phone (804) 271-9010 Fax (804) 271-9055
Customer Service (800)852-3147
www.quantumsilicones.com