Technical Data Sheet

QM 118

Quantum Silicones' 18 Durometer Condensation Cure Moldmaking Material

Product Description

Quantum Silicones' QM 118 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 used for molding intricate patterns, skin molding or for applications which demand a tough rubber. The hardness of QM 118 is the midpoint of the QM100 series and therefore offers excellent physical properties.

Key Features

- Low viscosity
- Excellent physical properties
- Fast demold time

Main Applications

- Molds for large and small statues and monument restoration
- Molds for polyester, polyurethane and epoxy resin castings
- Molds for prototypes

Typical Properties

UNCATALYZED PROPERTIES			
Base Appearance		Beige	
Base Viscosity, cps		20,000	
Mix Ratio		10:1 **by weight**	
CATALYST[1]	**QM CAT BLUE**	**QM CAT PURPLE**	**QM CAT RED 3**
Color	Blue	Purple	Red
Viscosity, cps	100	100	100
Specific Gravity	1.03	1.00	0.95

Typical Properties Continued

CATALYZED PROPERTIES-QM 118			
PROPERTY	**QM CAT BLUE**	**QM CAT PURPLE**	**QM CAT RED 3**
Catalyzed Color	Light Blue	Light Purple	Light Red
Catalyzed Viscosity cps	13,500	13,500	13,500
Specific Gravity g/cm^2	1.24	1.24	1.24
Pot Life(2)(minutes)	~45 to 90	~45	~15
Tack-Free Time	6 to 8 hours	4 to 6 hours	45 to 60 minutes
Demold Time	16 to 24 hours	12 to 16 hours	4 to 6 hours

TYPICAL CURED PROPERTIES (3 DAYS @ 25C)	
Durometer, Shore A	16 to 20
Tensile Strength, psi	>420
Elongation, %	>500
Tear B, ppi	>115
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 normal catalyst for the QM100* series is Cat Purple at a 10% level **by weight**. QM Cat Blue is recommended for those needing a longer working time or those hand mixing larger quantities of QM 118. Faster cure can be obtained using DBT, a higher level of QM Cat Purple, or QM Cat Red 3. However, rapid cure of condensation cure moldmaking rubber often results in a small sacrifice of physical properties or an increase in hardness.

*QM 100, QM 135 and QM 140 each require their own specific catalysts. Please see individual data sheets for details.

Mixing and De-aeration

The following procedure should be followed for obtaining optimal performance from the QM 100 series.

Charge 100 parts**, by weight**, of QM 118 and 10 parts**, by weight**, of the chosen catalyst 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.

Shelf-life and Storage

QM 118 and the chosen catalyst 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.

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