

QM 135 2 part moldmaking material

Description

QM 135 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 the molding of 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 de-mold time
- Excellent dimensional stability

Application

Statues, technical articles, prototypes, furniture, picture frames, PU, epoxy and polyester casting resins

Use and Cure Information

CURE CHARACTERISTICS

The standard catalyst for QM 135 is QM Cat 135 catalyzed at a 10:1 ratio (base:catalyst) by weight. In order to achieve optimum physical properties and hardness from QM 135 the use of QM Cat 135 is highly recommended. Faster cure can be obtained using DBT or a higher level of QM 135. However, rapid cure of QM 135 can often result in a small sacrifice of physical properties or an increase in hardness. The curing process begins as soon as the catalyst is mixed with the base. The material will cure as described in the data above under normal temperature (25°C) and humidity conditions (50% RH). Because this system is sensitive to heat and humidity, a change in cure speed may be observed if one or both of these variables are altered. A large difference in temperature (+/- 5°C) or humidity (> 60% – 70%) may alter 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.

MIXING

All condensation cure catalysts should be thoroughly mixed prior to catalyzation. CHT recommends that the catalyzed material be tested on a small area of the mold prior to use. QM 135 should be thoroughly mixed with QM Cat 135 using a 10:1 ratio (base:catalyst) by weight. Shake the catalyst well before use. Material should be mixed in a clean, compatible metal or plastic container. 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 during de-aeration. 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.

DE-AERATION

Air trapped during mixing should be removed by vacuum at 29 inches of mercury. During the process, the material will expand, and intermittent evacuation may be required. Typically, after releasing the vacuum 2 – 3 times, the mass will collapse on itself at which time the vacuum should be left on for an additional 2 - 4 minutes.

Property

Uncured Product

Cure Profile		3 days, 25°C, 50% humidity
Cure Type		Condensation
De-mould Time / Full Cure at 23°C/73°F		12 - 16 hrs
Density A	BS ISO 2781	1.16
Density B	BS ISO 2781	1.00
Mix Ratio By Weight		10:1
Rheology		Liquid
Tack Free Time / Skin Formation at 23°C/73°F		4 - 6 hr
Viscosity A	Brookfield	45000 cP
Viscosity B	Brookfield	150 cP
Viscosity Mixed	Brookfield	31000 cP

Cured Product

Color		Light purple
Density	BS ISO 2781	1.14 g/cm3
Elongation at Break	ISO 37	400 %
Hardness Shore A	ASTM D 2240-95	35
Linear Shrinkage (%)		<0.3 %
Tear Resistance (N/mm)	BS ISO 34-1	26 N/mm / 148 ppi
Tensile Strength	ISO 37	3.45 N/mm2 / 500 psi

Storage

Max Storage Temperature	38 °C / 100 °F
Shelf Life	12 mths

UNCATALYZED		
TEST	QM 135	QM CAT 135
Color	Beige	Purple
Viscosity	45,000 cps	150 cps
Specific Gravity	1.16	1.00

CATALYZED	
MIX RATIO 10:1 by weight	
PROPERTY	QM CAT 135
Color	Light Purple
Viscosity	31,000 cps
Specific Gravity	1.14
Work life at 25°C *	40 minutes
Tack-free time	4 - 6 hours
Demold time	12 - 16 hours

* Work life is defined as the amount of time required for the material to double in catalyzed viscosity.

CURED PROPERTIES	
3 DAYS @ 25°C	
Durometer, Shore A	35
Tensile Strength	500 psi
Elongation	400%
Tear B	150 ppi
Linear Shrinkage	< 0.3%

Styrene resistant specialty catalysts are also available. Please see individual catalyst data sheets for more information.

Storage

See product label and/or CoA for specific "Use By Date". Product should be stored in its original, unopened container. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case, the properties required for the intended use should be checked for quality assurance reasons.

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