

QM 2223 2 part moldmaking material

Description

QM 2223 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. A variety of catalysts are offered with this material.

Key Features

- Low specific gravity
- Low viscosity
- Long work life and excellent flowability
- Fast de-mold time

Application

Statues, technical articles, prototypes, furniture, picture frames, PU, epoxy and polyester casting resins, GFRC pre-cast

Use and Cure Information

CURE CHARACTERISTICS

The standard catalyst for QM 2223 is Moldmaster Blue catalyzed at a 10:1 ratio (base:catalyst) by weight. Faster cure can be obtained using DBT, Moldmaster Red, Moldmaster Blue or a higher level of Moldmaster Purple. However, rapid cure of condensation cure moldmaking materials 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 2223 should be thoroughly mixed with the catalyst of choice 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
Density A	BS ISO 2781	1.09
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		3 - 5 hr
Viscosity A	Brookfield	50000 cP
Viscosity B	Brookfield	150 cP
Viscosity Mixed	Brookfield	32000 cP

Cured Product

Color		Blue
Density	BS ISO 2781	1.08 g/cm3
Elongation at Break	ISO 37	500 %
Hardness Shore A	ASTM D 2240-95	23
Linear Shrinkage (%)		<0.25 %
Tear Resistance (N/mm)	BS ISO 34-1	6.9 N/mm / 40 ppi
Tensile Strength	ISO 37	3.45 N/mm2 / 500 psi

Storage

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

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UNCATALYZED					
PROPERTY	QM2223	MM PURPLE	MM GREEN	MM BLUE	MM RED
Color	White	Purple	Green	Blue	Red
Viscosity	50,000 cps	150 cps	150 cps	150 cps	150 cps
Specific Gravity	1.09	1.00	1.00	1.00	1.00

CATALYZED					
MIX RATIO 10:1 by weight					
PROPERTY	MM PURPLE	MM GREEN	MM BLUE	MM RED	
Color	Light Purple	Light Green	Light Blue	Light Red	
Viscosity	32,000 cps	32,000 cps	32,000 cps	32,000 cps	
Specific Gravity	1.08	1.08	1.08	1.08	
Work life at 25°C *	60 minutes	60 minutes	30 minutes	30 minutes	
Tack-free time	4 - 6 hours	4 - 6 hours	3 - 5 hours	4 - 6 hours	
Demold time	8 - 10 hours	8 - 10 hours	6 - 8 hours	6 - 8 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	23
Tensile Strength	500 psi
Elongation	500%
Tear B	40 ppi
Linear Shrinkage	< 0.25%

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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