

QM Thixo Agent Thixotropic Additive for Condensation Cure Moldmaking

Description

QM Thixo Agent is an additive for the QM 100 moldmaking series. This additive can be used at a 1% level with a QM 100 series base or at a 10 % level when used with QM Cat Blue or QM Cat Purple. QM Thixo Agent will cause the material to exhibit non-slump behavior at a thickness of ~ 0.5" without changing the cured properties of the QM 100 series material.

This product is ideal for glove molding, lay-up molding, spray applications or any application where a thixotropic moldmaking material is required. The cured rubber has outstanding mechanical properties and good shelf-life stability.

For use with QM 113, QM 118, QM 122, QM 128, QM 135 and QM 140.

Key Features

- Non-slump to ~ 0.5"
- Fast de-mold time
- Can vary thixotropy as needed

Application

Spray applications, glove molding, lay-up molding

Use and Cure Information

CURE CHARACTERISTICS

QM Cat Purple and QM Cat Blue are the standard catalysts for the QM 100 series of products. It is catalyzed at a 1% level overall. Faster cure can be obtained using DBT or an increased level of catalyst. However, rapid cure of condensation cure moldmaking rubber often results in a small sacrifice of physical properties or an increase in hardness.

QM Thixo Agent will speed up the cure rate of the condensation cure moldmaking series. 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.

CURED PROPERTIES

See individual data sheet for the QM 100 series of products.

CATALYZED		
The additive will speed up the cure rate of the QM 100 series		
PROPERTY	QM Cat Blue with 10% Thixo Agent	QM Cat Purple with 10% Thixo Agent
Work Life at 25°C*	20 minutes	15 minutes
Tack Free Time	90 – 180 minutes	45 – 90 minutes
De-Mold Time	4 – 6 hours	3 – 6 hours

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

MIXING

CHT USA recommends that the catalyzed material be tested on a small area of the mold prior to use.

QM Thixo Agent should be thoroughly mixed with the QM Cat Purple or QM Cat Blue of choice using a 1:10 ratio (Thixo agent:catalyst) by weight. Shake the catalyst well before use. Once the thixo agent and catalyst are mixed, add the catalyst mixture to the base of choice using a 10:1 ratio (base:catalyst) by weight. 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 as it 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. The material should stand for 10 minutes for the effect of the thixo agent to be realized.

MIX GUIDELINES

BASE	CATAYLST: QM Cat Blue or QM Cat Purple	Thixo Agent
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1000 parts	100 parts	9.0 – 10 parts**
100 parts	10 parts	0.9 – 1.0 parts**

**It is best to first try a small amount of thixo agent with the process, so the increased cure speed can be assessed before a permanent change is made.

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.

LIBRARY LIFE

The library lives of materials using CHT USA's QM Thixo Agent are good. A comparison of initial physical properties to those of the same material heat aged 7 days at 50 °C is shown in the table below. The material tested was QM 128 catalyzed at a 1 % additive level. The values reported are % loss after heat aging.

TEST	% Loss in Value
Durometer	+ 1 durometer point
Tensile	- 10% psi
Elongation	- 19%
Tear B	- 18% ppi

Health & Safety

Safety Data Sheet is available on request.

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