

QM 2128 2 part moldmaking material

Description

QM 2128 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
- High tear strength
- Low viscosity and long work life
- Fast de-mold time and excellent dimensional stability

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 2128 is Moldmaster Purple catalyzed at a 10:1 (base:catalyst) ratio 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 2128 should be thoroughly mixed with the catalyst of choice using a 10:1 (base:catalyst) ratio 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 | | 4 - 6 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 | | 2 - 4 hr |
| Viscosity A | Brookfield | 50000 cP |
| Viscosity B | Brookfield | 150 cP |
| Viscosity Mixed | Brookfield | 35000 cP |

Cured Product

| | | |
|------------------------|----------------|-----------------------------|
| Color | | Blue |
| Density | BS ISO 2781 | 1.13 g/cm3 |
| Elongation at Break | ISO 37 | 500 % |
| Hardness Shore A | ASTM D 2240-95 | 28 |
| Linear Shrinkage (%) | | <0.25 % |
| Tear Resistance (N/mm) | BS ISO 34-1 | 27.8 N/mm / 159 ppi |
| Tensile Strength | ISO 37 | 4.14 N/mm2 / 600 psi |

Storage

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

| UNCATALYZED | | | | | |
|------------------|------------|-----------|----------|---------|---------|
| PROPERTY | QM 2128 | MM PURPLE | MM GREEN | MM BLUE | MM RED |
| Color | Beige | Purple | Green | Blue | Red |
| Viscosity | 50,000 cps | 150 cps | 150 cps | 150 cps | 150 cps |
| Specific Gravity | 1.16 | 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 | 35,000 cps | 35,000 cps | 35,000 cps | 35,000 cps |
| Specific Gravity | 1.13 | 1.13 | 1.13 | 1.13 |
| Work life at 25°C * | 60 minutes | 60 minutes | 30 minutes | 30 minutes |
| Tack-free time | 4 - 6 hours | 4 - 6 hours | 2 – 4 hours | 2 – 4 hours |
| Demold time | 8 -10 hours | 8 -10 hours | 4 – 6 hours | 4 – 6 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 | 28 |
| Tensile Strength | 600 psi |
| Elongation | 500% |
| Tear B | 160 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 in an environment that does not exceed 38°C (100°F). 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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