IsoMold CMR 5001

PRODUCT DESCRIPTION

Isotec®'s IsoMold CMR 5001 is a two-part polyurethane molding system that is mixed one-to-one by volume (or one-to-one by weight) and cures at room temperature. IsoMold CMR 5001 cures to a medium hardness (Shore A50 ± 2), gray rubber.IsoMold CMR 5001 is used to make molds of detailed masters that do not contain undercuts. IsoMold CMR 5001 physical properties make it ideal for making concrete patterns and formliners. It has excellent release of either pigmented or unpigmented concrete.

PRODUCT ADVANTAGES

- Excellent release characteristics
- High tear strength and elongation
- Convenient 1:1 mixing ratio
- Low shrinkage
- Picks up fine detail in molding/casting applications

APPLICATIONS

- Pigmeted Concrete Molds & Formliners
- Unpigmeted Concrete Molds & Formliners

REACTION PROFILE

Ratio by Weight (ISO:POL) :	1:1	
Ratio by Volume (ISO:POL) :	1:1	
POL Temperature :	65 - 75	°F
ISO Processing Temperature :	65 - 75	°F
Mix Time, by Hand :	1 - 2	Minutes
Pot Life (100g) :	7 - 8	Minutes
Gel Time, 100 gram sample, 74°F :	15	Minutes
Demold Time :	12 - 24	Hours
Initial Cure Time :	48 - 72	Hours
Full Cure :	7	Days

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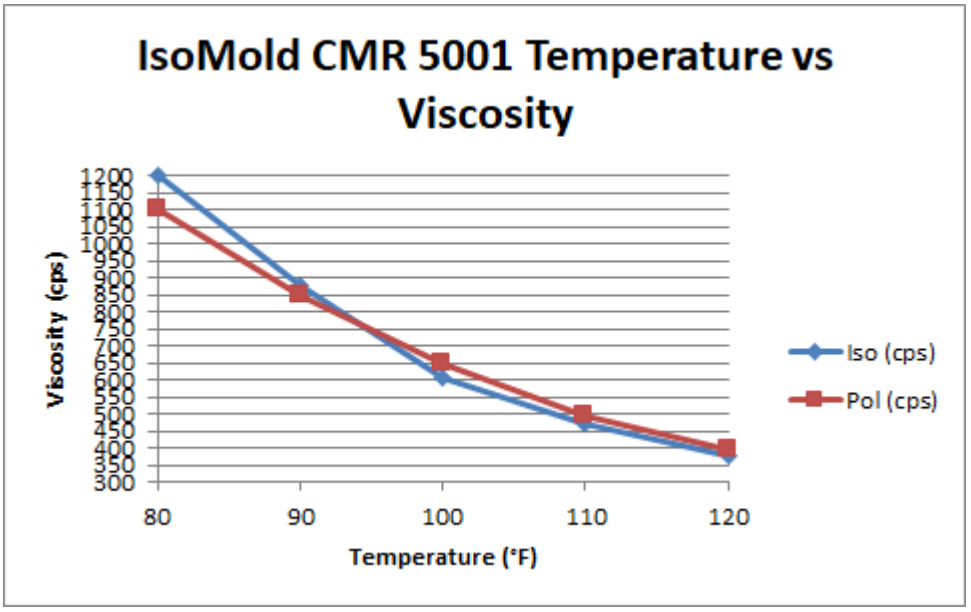
COMPONENT PROPERTIES

Color, ISO :	Amber	
Color, POL :	Gray	
Specific Gravity (74°F), ISO :	1.03	
Specific Gravity (74°F), POL :	1.04	
Mixed Viscosity (74°F), ASTM D-2196 (ISO/POL) :	2000	cps
Viscosity (74°F), ASTM D-2196 (ISO) :	900	cps
Viscosity (74°F), ASTM D-2196 (POL) :	1600	cps



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TYPICAL PHYSICAL PROPERTIES

Shore Hardness- A, ASTM D2240	48 - 52	
Tear Strength, Die C, ASTM D624	130	pli
Trouser Tear, ASTM D624 Die T	25	pli
Tensile Modulus, ASTM D412	330	psi
Tensile Modulus 100%, ASTM D412	260	psi
Tensile Modulus 200%, ASTM D412	400	psi
Tensile Modulus 300%, ASTM D412	530	psi
Tensile Strength, ASTM D412	880	psi
Elongation, ASTM D412	530	%
Rebound Bayshore %, ASTM D2632	53	%
Linear Shrinkage, ASTM D2566- 2 weeks @140F	0.16	%
Compression Set, method B, ASTM D395- 22 hours @ 140°F	46	%
Modulus of Elasticity Under Compression, ASTM D695	1920	psi
Compressive Strength @ 10% Strain, ASTM D695	160	psi
Compressive Strength @ 20% Strain, ASTM D695	330	psi
Compressive Strength @ 30% Strain, ASTM D695	500	psi

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*Values given are not intended to be used in specific preparation

RECOMMENDED HANDLING INSTRUCTIONS

Isotec® International's Recommended Application and Handling Instructions
-Use only in well-ventilated areas.
-Wear chemically resistant rubber gloves, safety glasses, and an apron.
-Avoid prolonged or repeated contact with skin.
-In case of skin contact, wipe affected area with isopropyl alcohol, followed by soap and water.
-In case of eye contact, flush eyes with water for 15 minutes and consult a physician.
-If swallowed or comes into contact with eyes, seek medical attention immediately.

To achieve the best results;
-Remove any air bubbles entrained in the resin or mixture with a vacuum.
-Thoroughly scrape the sides and bottoms of all mixing containers.
-Accurately measure the materials at the correct ratio.
-Ensure the ISO and POL are at or near normal Room Temperature (~72° F) prior to use.

Prepare Master and Mold Housing
First, clean and dry your master thoroughly. If the master has a porous surface (clay, concrete, plaster, etc.) or is made of sulfur-based clay, you must seal it. You can use polyurethane varnish, polyurethane sealant, or paste wax to seal your master. Next, anchor your master and seal the base so that IsoMold CMR 5001 does not leak under your master. A hot glue gun works to anchor and seal the base at the same time. Also, you should seal all of your mold housing connections with sulfur-free clay or hot glue. Then, apply an appropriate release agent to the master and interior of the mold housing. Apply release agent sparingly, while coating all surfaces of the master. Too much release agent may cover the details of the master. You should allow the release agent to dry approximately 10 minutes before you pour your mold.

Measure POL (Curative) and ISO (Prepolymer)
Note: IsoMold CMR 5001 provides approximately 7-8 minutes for you to mix and pour the mold before it begins to gel. Make sure that the POL (Curative) and ISO (Prepolymer) are room temperature before mixing them. Please note that in cold weather it may take up to 24 hours for the POL (Curative) and ISO (Prepolymer) to reach room temperature. Using two clean, dry, plastic containers of equal size, measure equal amounts of the POL (Curative) and the ISO (Prepolymer).

Mix POL (Curative) and ISO (Prepolymer)
After you prepare the master and mold housing and measure the POL (Curative) and ISO(Prepolymer), you are ready to pour the POL (Curative) and ISO (Prepolymer) into another clean, dry, plastic container. Scrape the POL (Curative) and ISO (Prepolymer) containers to move all of the material into the mixing container. Combine the two ingredients for several minutes until no color striations are visible. Be sure to scrape the sides and bottom of the mixing container while combining the two ingredients. You must mix the POL (Curative) and ISO (Prepolymer) completely so that IsoMold CMR 5001 will cure correctly. If air bubbles form during mixing, you should degas the mixture to remove them.

Pour Mold

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To ensure that no air bubbles form over the details of your master, you can brush a thin base coat onto the master and then pour the rest of the IsoMold CMR 5001. The best way to pour a mold is to tilt your mold slightly and pour into one spot at the corner of the mold, allowing the material to cover your master slowly like the flow of lava. When you have finished pouring the mold, you may lightly spray release agent on the top of IsoMold CMR 5001 to break any air bubbles that have risen.

Demold and Cure Mold
Once you have poured your mold, allow the mold to cure 12-24 hours before demolding. To prolong the life of the mold, allow it to cure for 3–4 days before using it.

Cure and Thermal Shrinkage
IsoMold CMR 5001 is formulated for Room Temperature (RT) Cure. Shrinkage of 0-0.16% may occur if the material is processed above room temperature. Other conditions that may cause mold shrinkage: prolonged use, storing the RT cured mold at high temperatures, or excessive heat generated during use.

Please refer to Isotec® International's Application Bulletin MM-1 for more information on using the IsoMold CMR 5001, or any of our other mold making resins or accessories.

Keep the IsoMold CMR 5001 container tightly closed when not in use and store at temperatures between 50–100° F (10–37° C). Do not expose the POL (Curative) or ISO (Prepolymer) to moisture! If moisture contaminates IsoMold CMR 5001, it will not cure correctly. If these storage requirements are met, any unopened IsoMold CMR 5001 material carries a shelf life warranty of six months.

SAFETY

Please refer to the SDS for all appropriate health and safety information.

Date Modified 2/5/2018