TECHNICAL BULLETIN

INSTRUCTIONS FOR USING
LAM-A-CAST CASTING RESIN

Note: When using casting resin and catalyst read all of the manufactures instructions and msds sheets prior to use the product. Casting resin can be a harmful material if all of the manufactures instructions are not followed exactly.

You will not be able to retrieve any object embedded in the resin once the resin has been applied. Make absolutely sure you know what you are doing before embedding any object that you can not replace.

LAM-A-CAST CASTING RESIN has been especially compounded to provide a product simple to use, brilliantly clear, and without the necessity of providing heat to obtain a fast cure. Simple castings can be poured and removed from the mold in less than an hour. Only the addition of MEK Catalyst is necessary to obtain sparkling clear plastic casting or panel enhanced with internal embodiments of your own choosing. Rule-of-thumb instructions and ideas follow:

CATALYZING OR CURING CASTING RESIN
Many factors influence the speed of resin gel or cure and the most important of these are listed here:
(1) Amount of catalyst used
(2) Temperature of room
(3) Temperature of resin
(4) Temperature of mold
(5) Additives, such as dyes, color pigments, pearl pigments, and many types of embodiments.

There is an optimum amount of catalyst for each type of project. In most of the projects detailed in this catalog the medium catalyzing formula is followed. In all cases, refer to the catalyst instructions on the label. Catalyst (hardner) starts a chemical reaction that creates an exotherm (heat) which cures the resin. An excessive amount of catalyst will overheat the casting. Excessive catalyst will not cure up and become a part of the system. This shows up as crystallization. Overheating from excessive catalyst also causes fractures. The thicker the pour the less catalyst is required. This is because a thick casting retains the heat. A thin section, such as a lay-up for a place mat, dissipates the heat and thus requires more catalyst.

Room temperature, resin temperature, and the temperature of the mold affects the gel time. The higher the temperature, the faster the gel time. Too fast a cure will cause fractures. The high heat of the fast cure also causes excessive warping and excessive fading of colors.

Humidity slows the cure of resin. Moisture in the resin, which may come from humidity in the air or from moisture present in embedments, can cause the resin or casting to be cloudy. Keep the can of resin capped tightly when not in use.

IMPORTANT
Always mix the resin and catalyst very thoroughly. As a rule-of-thumb mix for 60 seconds. When mixing use care to scrape sides and bottom of container.

P.V.A. MOLD RELEASE
Liquid mold release (P.V.A.) should be applied to all surfaces before the liquid plastic can be poured. This material will permit easy separation of the cured plastic from the surface of the mold or pouring sheet. The release agent may be poured into the mold and then poured out again and the material allowed to drip-dry for about 45 minutes. It may be brushed on the pouring surface of the flat panel. It is important that the release agent be thoroughly dry before pouring the plastic. This must be done to each pour that you make. The green release material may adhere to the casting panel, but may be removed easily with water.

The use of a wax-type mold release is not required as it imparts a dull, uncured surface to the casting or panel which would then require further polishing and should be avoided.

TRY A TEST POUR
Ingredients necessary are the container or mold, LAM-A-CAST CASTING RESIN, MEK hardening agent for the resin, P.V.A. MOLD RELEASE, and a clean container for mixing.

- It is essential that no contamination, such as dust or cloth particles be allowed to combine with the resin, as a cloudy casting will result.
- The bottle of MEK hardening agent can be used as a dropper to properly measure the hardner in proportion to the liquid plastic. (Here, a word of caution: MEK is an oxidizing peroxide, thus toxic, and should be kept away from children. Do not allow this material to come in contact with the eyes or skin. Wash hands thoroughly after using.)

TEST FOUR “SHOT GLASS”
Try a test pour in a small “shot” glass to get the “feel” of the material. First, fill the glass with P.V.A. MOLD RELEASE. Pour the surplus material back into the can and allow the glass to drain and dry upside down. Measure your liquid plastic into a clean container and add 6 drops of the hardening agent for each ounce of liquid plastic you are going to use. Stir thoroughly, but not violently, as this will cause air bubbles. Now, pour the mixture into the shot glass that is coated with P.V.A. At room temperature the plastic should gel in about 40 minutes. After the gelling takes place you will notice the glass getting very warm. This is the chemical curing action taking place. In about 15 minutes the plastic will reach its hottest point and will then start to cool. As soon as the glass has cooled the casting can be removed by turning the glass upside-down and striking the container sharply on a table or like object. The now solid plastic will fall out of the glass container or mold.

TEST EMBEDMENT---PRIMARY

Now, try an embedment. Until you have mastered the process through experimentation, never attempt to embed an item of value or something you cannot replace. So, first, try to embed a penny. Assume the mold or container has a capacity of four ounces and has been coated with P.V.A. MOLD RELEASE that has been allowed to dry thoroughly. Measure out one ounce of resin, add 6 drops of hardening agent and stir well. Pour this small amount into the mold and twist and turn the container around so as to enable the resin to wet the inside surfaces of the mold. Now, allow the plastic to puddle and harden in the bottom. After the material has set and cooled, mix up three more ounces of resin to fill the balance of mold. But, here, use half the amount of hardening agent (4 drops) to the ounce of resin. This is to reduce the setting temperature to avoid internal fractures developing around the embedment from overheating. Now, dip the penny in the mixed resin and place on top of the cured resin in the mold. Pour slowly on top of the penny and three ounces of resin you have prepared and allowed to cure. This second pour will take longer to cure due to the reduced amount of hardening agent you have used. When the casting has cooled and the top surface is dry to the touch the casting can be removed as previously described. If fractures have occurred in the resin, try again with slightly less hardner. If the top surface on the casting is tacky place in direct sunlight for a short time until it cures and can be removed from the mold. Using the basic principal described above, the possibilities of embedding solid objects are unlimited. The variations are endless.

OBJECTS FOR EMBEDMENT

Organic objects—such as wood, flowers and leaves contain a high percentage of water and must be dried before attempting to embed. If the color loss is too great after drying, it can be restored by hand painting with Tempera colors and again allowed dry before casting. Leaves, flowers and grasses make excellent materials for pouring flat panels but they also must be dried and pressed flat before using. Bugs, beetles and insects must be free of moisture; both the outer and inner areas of the specimen must be dehydrated.

PANEL POURING

Panel pouring requires greater preparation and care than does primary embedding. The results, however, can be gratifying and of great value in interior decorating. In addition to the suggested items mentioned above that could be embedded in a panel, printed synthetic sheer fabrics can also be used. They will become translucent and leave only the designs silhouetted. Unbleached, open weaves (burlap and theatrical gauze) work well. Press free of wrinkles any fabric that you use before attempting to embed it. Any small non-oily object (such as shattered glass, wire, metal, sponges, cereals, seeds keys, coins, clock springs, buttons, pebbles or gravel) will produce patterns of silhouettes. Cellophane gives a stained glass look colored tissue paper a less brilliant effect. Think ahead in planning your composition. Think in terms of shape, density of objects, their relation to each other…and work for a composed effect. The plastic panels are quite limber until cured for at least 24 hours. It is suggested that these not be removed from the pouring plate for at least that period of time. It has been mentioned that the pouring surface must be smooth and level. It can be made leak-proof by using string-form putty pressed down one-quarter inch or more to enable the thickness of the panel pour to whatever depth you desire. The panel should be re-enforced with a light fiberglass mat commonly known as “surfacing mat”. To estimate the amount of resin to be mixed at one time figure on coverage 1/8” thick of thirteen square feet, the amount of hardner (or catalyst) provided with pints, quarts or gallons of

CASTING RESIN should be used with this type of lay-up. After thoroughly mixing the proper amount of hardner into the resin, spread the resin evenly with a small piece of cardboard over the prepared surface into which you are pouring the resin. The resin should be spread gently over the pouring area and the fiberglass mat laid into it with care. Make certain that this mat is thoroughly saturated. Push the mat down flat with the edge of a piece of cardboard, as neatly as possible. Pour more resin on the mat if needed, and work in gently until the mat is completely saturated. The mat should become translucent and lose its original "white" look. If bubbles of air have been trapped, use the edge of the cardboard or a pin to pop them and to chop them up. When more resin is needed, mix only what you are sure to use immediately. Objects to be embedded on thin sheet (such as leaves, petal flowers, pebbles, etc.) should be dipped into resin before placing onto the panel, to prevent air bubbles being trapped under the objects. Speed is necessary in laying the objects onto the panel before the resin gels. They should then be covered with additional resin. Or, if a tendency to float becomes apparent, these objects should be covered with another layer of lightweight mat…before the resin is applied. These panels will probably gel in 45 minutes to one hour but should not be removed from the pouring surface for 24 hours to avoid warping. The uneven edges of the panel can be trimmed with a band saw or some other method of cutting that may be more convenient for you, and placed in a frame as you would a picture.

COLORING CASTING RESIN

Use dyes for transparent colors. Dye is added to resin before the catalyst, so it can be thoroughly dispersed and thus resist fading from the catalyst reaction. The dye is concentrated, so use a little at a time until you obtain the desired shade. One drop of transparent dye per ounce of resin will make a pastel shade; three drops per ounce will generally make quite a dark shade. Mix thoroughly.

Use color pigments for opaque castings. Pigments are most thoroughly dispersed by breaking it down in a small amount of resin such as ¼ ounce color pigment to one ounce of resin. Mix thoroughly, then add this color mixture to the resin. For veins or streaks of color, add three or four drops of catalyst to the resin and color mixture: Add this mixture slowly to the resin, stirring only slightly. Pour slowly into the mold. Pigments in small amounts will make the resin or casting translucent rather than opaque. Thus, with dyes and pigments you can cover the full range of transparent, translucent and opaque. Always add the color first to give you time to obtain the desired shade—and to reduce the possibility of fading—then add the catalyst. Do a little experimenting and you can obtain some very unusual and pleasing effects.