Hot Melt file

CALRESIN

CORPORATION

GENERAL OFFICES
4543 Brazil St.
Los Angeles 39, Calif.
CHapman 5-1079

[redacted]

Flexible Mold Materials

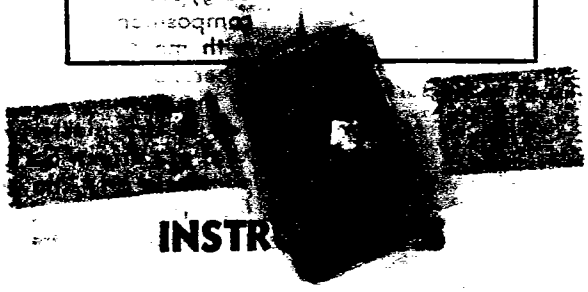
For the casting of plastics, plaster, waxes, concrete, magnesite, low melt metal alloys, etc.

[redacted]

PLASTIFLEX

Rubber-like Hot Melt Casting Compounds

(Patents Pending)



Industrial Products

Finished products in wide ranges of usage—cushioning, packaging devices and other rubber-like parts.

Raw materials for fabrication of flexible novelties and toys in choice of colors.

MELTING EQUIPMENT: PLASTIFLEX can be melted in a double boiler with a lid, over gas or electric heat. The inner container should be of stainless steel, aluminum, porcelain, enamel or glass. The double boiler should have a bath of castor oil, high flash-point petroleum oil, such as GOLDEN SHELL No. 40, obtainable at any Shell service station, or other suitable heat-transfer medium to withstand temperatures of 400°F. The double boiler should be of such a nature that the oil bath rises to or above the level of the PLASTIFLEX. It is better to have the container holding the PLASTIFLEX provided with a spout so that the lid can be kept in place while pouring. A large stainless steel kitchen spoon or a glass rod should be on hand for stirring and an immersion thermometer with readings up to 400°F. should be available to check temperature.

For greatest ease in handling we recommend electric turkey roasters, provided with removable inner containers and thermostat control, which can be purchased at most electric appliance stores and will generally hold up to about 30-35 pounds of material. An oil bath around the inner container is not required.

Many users find it expedient to melt small batches of PLASTIFLEX in an open container placed in an oven controlled at 350° to 360°F.

CLEANING OF EQUIPMENT. PLASTIFLEX congealed on handling equipment can readily be peeled off for reclaiming. Containers can be further cleaned with methyl ethyl ketone or acetone.

RECLAIMABILITY. PLASTIFLEX is 100% reclaimable. Obsolete molds and scraps should be cut up for greater ease in melting. Longer life can be obtained by using about 10% fresh material, melting the fresh material first, and then adding the PLASTIFLEX to be reclaimed. Molds should be cleaned thoroughly with water or alcohol before reclaiming.

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MELTING. PLASTIFLEX is supplied in shredded bulk form and is easily melted, at from 340°F. to 360°F. It is better not to attempt to melt the entire batch required all at once, as quicker results may be obtained by first melting a portion of the amount desired, and then adding additional PLASTIFLEX to the melted material, with agitation. The temperature readings can be token in the PLASTIFLEX itself, at the bottom or edges of the container, or in the oil. The oil temperature should not be allowed to rise over 400°F., unless the PLASTIFLEX is well agitated, particularly around the edges and bottom of the container.

In using turkey roasters check the temperature closely at first to determine the correct settings for the thermostat as the readings on the dial will not always correspond to the temperature of the material. For fast melting use higher heat than ordinarily employed in holding the material at pouring temperature provided it is well agitated particularly where in contact with the container. PLASTIFLEX should not be held in a melted state longer than necessary, but it is permissible to keep a melter in operation all day if molds are being poured and fresh material is being added.

After the PLASTIFLEX is thoroughly and evenly melted, it should be allowed to remain undisturbed at about 340°F. for a while to allow any air bubbles caused by agitation to rise and break. During this period the stirring rod should be removed and the lid kept in place so that the PLASTIFLEX will not tend to skin over and hold the bubbles in the material. An infra-red light held over the surface will hasten the breaking of bubbles.

PREPARATION OF PATTERNS. PLASTIFLEX can be cast over metal, glass, thoroughly glazed porcelain, plaster, modeling clay, or any other material that will withstand the pouring temperature of PLASTIFLEX. No parting agent is required to separate the PLASTIFLEX.

The pattern should be placed on a metal or marble base plate with a suitable retaining wall of metal, tin cans with both ends removed, pieces of pipe or tubing, or plaster, around the pattern (or patterns if multiple molds are to be made), allowing a reasonable space around and above the pattern to provide the side walls and bottom of the PLASTIFLEX mold to be cast. In the cases of both hollow and solid patterns, it is advisable to make a small hole in the plate underneath the pattern so that any air, even a minute amount that may be between a small solid pattern and the plate, can escape rather than cause a void in the PLASTIFLEX, as a result of being expanded by the heat. Metal patterns should always be pre-heated to approximately 200°F. as cold metal will transfer heat away from the PLASTIFLEX very rapidly and tend to cause flow lines.

When a pattern is large and of irregular shape, it is sometimes necessary to make a supporting removable plaster case for the PLASTIFLEX mold. In this instance, a layer of clay can be built up around the pattern to which the plaster case can be cast, a practice familiar to those experienced in making glue molds. From ½ to 1" of PLASTIFLEX is all that is usually necessary to allow for this type of mold. The plaster case need not necessarily be dried, but should be given a coat of Johnson's paste or liquid wax, petrolatum, or linseed oil soap.

In the casting of certain shapes it is sometimes necessary to make a split PLASTIFLEX mold, that is, split on one side. To do this, crimp a piece of tin or light sheet metal with horizontal and vertical creases to provide locating joggles and hold this in a vertical position by means of the split in the plaster supporting case along side of, but not touching, the pattern. After the mold is cast and the pattern and the metal strip have been removed, the split can be extended into the mold cavity by cutting with a knife. PLASTIFLEX molds can also be cast in one piece and split with a glue knife and two-piece or multiple-piece molds can be made by establishing partings with clay and separating PLASTIFLEX from PLASTIFLEX with petrolatum or wax. All split or piece molds should, of course, have a suitable plaster supporting case with means of clamping and holding together. It is best to make this final plaster supporting case after the PLASTIFLEX mold has cooled down and all thermal shrinkage has taken place.

PLASTER PATTERNS. On the back page of these instructions is a layout of single and multiple outlet vacuum tables for the casting of PLASTIFLEX molds over dehydrated gypsum type plasters, and over cement or other porous compositions. A vacuum is not required in conjunction with molds cast over metal, glass, glazed porcelain or other non-porous materials. When any material heated to the pouring temperature of PLASTIFLEX is applied to wet or dry plaster, air and moisture expanded by the heat are driven out of the plaster with sufficient force to penetrate any known type of protective coating. Therefore, to prevent air pockets and voids in PLASTIFLEX cast over plaster patterns, first dehydrate the plaster and then draw the air out of the plaster and away from the PLASTIFLEX by means of a vacuum, a technique long employed in the lost wax process of casting metals.

Make a vacuum plate, as shown, by supporting a marble, metal or porcelain slab with a ¼" nipple cemented flush with the surface in such a manner that a rubber tube can be led from the hole in the plate to a faucet vacuum pump, such as can be obtained from CALRESIN CORPORATION or most local hardware stores. For multiple outlets an electrically driven vacuum pump is recommended. If piece molds are to be made, a second vacuum plate, set up vertically, should be available so that air may be withdrawn from the base of the pattern when the pattern is in a horizontal position.

Prepare uncoated plaster patterns by applying linseed oil soap to the surface with a brush, wiping off all excess soap. This will dry in a few minutes with or without heat. It is then possible to bring the surface of the plaster to a gloss by polishing with a soft cloth or brush. Paste wax may be substituted if more readily available.

Mold surfaces with a high gloss, comparable to results obtained on metal patterns, may be had from dried plaster patterns by spraying the surface with Calresin GLAZE, Series 200, until a wet coat remains on the surface.

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GALLSON CORPORATION

4543 Brazil Street
Los Angeles 39, California

PLASTIFLEX STANDARD MOLD MATERIAL	PRICE PER POUND
5 to 49 pounds	$ 1.10
50 to 99 pounds	1.00
100 to 249 pounds	.90
250 to 499 pounds	.80
500 pounds and over	larger discounts

PLASTIFLEX NOVELTY & SATINFLEX MATERIAL	PRICE PER POUND
5 to 49 pounds	$ 1.50
50 to 99 pounds	1.40
100 to 249 pounds	1.30
250 to 499 pounds	1.15
500 pounds and over	larger discounts

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4543 Brazil Street
Los Angeles 39, California

DISTRIBUTORS PRICE LIST

PLASTI/TEK NOVELTY AND MOLD MATERIAL

MOLD MATERIALS

250 to 499 pounds	$.80 per lb.
500 to 1499 pounds	.75 per lb.
1500 to 2999 pounds	.65 per lb.
3000 pounds and over	.55 per lb.

NOVELTY MATERIALS
(Satinflex & Novelty)

500 to 1499 pounds	$.80 per lb.
1500 to 2999 pounds	.60 per lb.
3000 to 4999 pounds	.55 per lb.
5000 pounds and over	.50 per lb.

TRANSLUCENT MATERIALS

500 to 1499 pounds	$.95 per lb.
1500 to 2999 pounds	.75 per lb.
3000 to 4999 pounds	.70 per lb.
5000 pounds and over	.65 per lb.

All prices f.o.b. our plant - Los Angeles, California

Terms: 1% 10 days, net 30

Prices subject to change without notice

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Then dry in an oven at 160°F. to 180°F. for from four to six hours until the coating is hard. The base should be left unsealed so that a vacuum can be applied and no further surface treatment or separator is necessary.

Then place the pattern on the vacuum plate over the hole through which the air is to be drawn. If the base has considerable area, cut shallow grooves in the base extending from the center to within a half inch from the edge to allow the vacuum to draw evenly over practically the entire base. Multiple molds of small plaster patterns may be made by placing a series of the patterns on a thin plaster slab and evacuating the patterns and the supporting plaster slab simultaneously. The retaining walls must be so placed that the PLASTIFLEX will cover the edges of the plaster slab.

Evacuation of air should be commenced just before the PLASTIFLEX is poured and continued until the PLASTIFLEX has cooled to almost room temperature. It is not necessary to evacuate plaster supporting cases or retaining walls to eliminate bubbles, merely treat them with wax, petrolatum or linseed oil soap.

MODELING CLAY. PLASTIFLEX can be readily poured over moist water clay and in many instances over oil base modeling clays, without any protective or parting agent. In this latter case, a lot depends on the type of clay used and the size of object as, in some cases, the heat from the PLASTIFLEX will soften the clay.

Fabricators should consider the procedure of making a PLASTIFLEX mold directly over original clay models rather than going through the extra steps of making piece molds and plaster duplicates.

WOOD, PLASTICS, ETC. It is impossible to cast PLASTIFLEX over wood, most plastics, or other materials that give off air, moisture or volatiles under temperature, and are too dense to evacuate by vacuum. When original patterns are available only in one of these mediums they can be metal-plated so that PLASTIFLEX can be poured over them without vacuum or they can be duplicated in plaster by means of a glue mold, or a dental impression compound.

POURING MOLDS: To determine the amount of PLASTIFLEX required for a given mold, compute as closely as possible the mass required and figure the gravity of PLASTIFLEX at one ounce to the cubic inch. Always have a reserve in the melter, since it can be reclaimed if not needed.

The best pouring temperature for PLASTIFLEX is from 340°F. to 360°F. It is more fluid at the higher temperature and it is recommended that it be poured at 340°F. over cold patterns when flow lines are to be eliminated, and when a series of molds are to be cast.

The PLASTIFLEX should be poured in a steady and uninterrupted stream, so that the stream does not touch the pattern and the PLASTIFLEX is allowed to gradually rise around and encompass the pattern. When the situation is such that the stream cannot be prevented from falling on the pattern, it is advisable to pour the PLASTIFLEX through a riser leading to the base of the mold, allowing the air to escape through another riser at the top. Reasonable allowance should be made for down-shrink of the material and, of course, the PLASTIFLEX congealed in the risers can be trimmed off and reclaimed.

PLASTIFLEX will cool and set quite rapidly, the time involved varying as to the mass. Once the surface has skinned over, cooling can be accelerated with water. Time should be allowed for the PLASTIFLEX to cool down to room temperature before it can be removed from the pattern without danger of distortion. Plaster supporting cases should always be cast after the PLASTIFLEX has cooled and before removal from the pattern.

MOLD RINSE: When desired a mold rinse may be used in the casting of either plaster or plastics. The rinse acts as a wetting agent that breaks up any bubbles that may be formed against the mold surface and produces castings that are free of surface bubbles or other defects.

A mold rinse for the casting of plaster can be made very cheaply by adding from one tenth to one half of one percent of wetting agent to water. Suitable wetting agents are Tergitol #7 (Carbide and Carbon), DuPonol (DuPont), Aerosol DT (American Cyanamid) or the equivalent. If not available use mild soap flakes such as Vel or Dreft, adding enough so that the water will spread out over the mold surface without puddling. Casts should be made while the mold surface is still moist.

For the casting of phenolics, denatured ethyl alcohol or isopropyl alcohol may be used as a mold rinse.

CAUTION. Be sure patterns are smooth and free from foreign matter, as the surface finish of the PLASTIFLEX mold will be identical to that of the pattern. Remember PLASTIFLEX picks up minute details even to that of finger prints; therefore, the mold surface finish is important.

While PLASTIFLEX is very stable, and has been heated up to over 380°F. for short periods without damage, provided the material is almost constantly agitated. When it has been overheated, scorched areas will appear against the sides of the container in the form of lumps which will not melt down and the rest of the material tends to thicken up and will not become fluid at normal melting temperatures. PLASTIFLEX so contaminated should not be mixed with fresh material. A tendency to darken in color after prolonged heating or many re-melts is not necessarily an indication of harmful decomposition. Do not cook PLASTIFLEX longer than necessary or leave a thin layer of PLASTIFLEX in the bottom of a double boiler over a hot flame.

PLASTIFLEX molds should not be used in applications involving temperatures of over 200°F.

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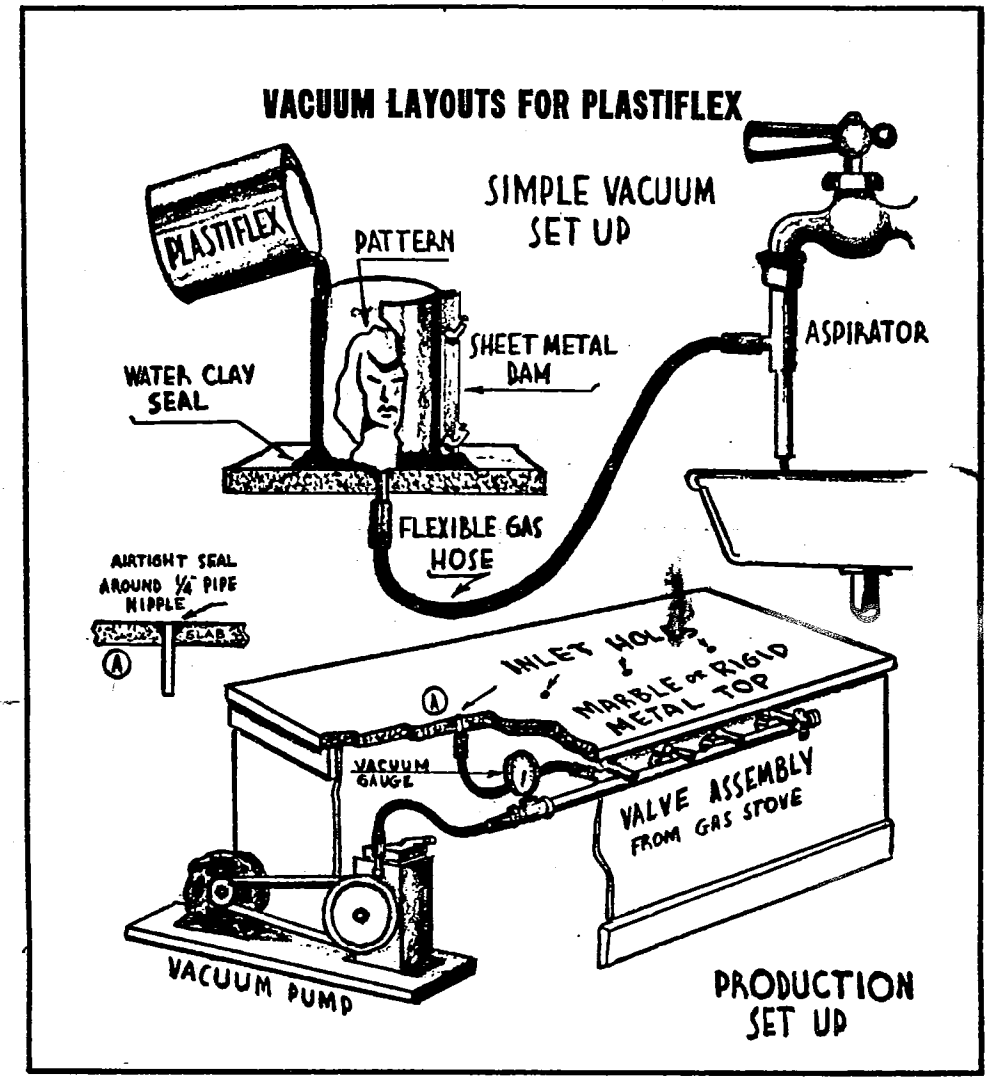
VACUUM LAYOUTS FOR PLASTIFLEX
SIMPLE VACUUM SET UP
PLASTIFLEX
PATTERN
SHEET METAL DAM
WATER CLAY SEAL
ASPIRATOR
FLEXIBLE GAS HOSE
AIRTIGHT SEAL AROUND ¼" PIPE NIPPLE
SLAB
A
INLET HOLE
MARBLE or RIGID METAL TOP
VACUUM GAUGE
VALVE ASSEMBLY FROM GAS STOVE
VACUUM PUMP
PRODUCTION SET UP

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