

Before starting, have your molds ready. A thin coating of GM Foam Mold Release should be brushed onto the interior mold surfaces of both positive and negative, and allowed to dry thoroughly. Excess release can be whisked away with a dry brush. We use an O'Haus triple beam balance for gram weights.

1. SHAKE THE BOTTLES OF COMPONENTS BEFORE YOU USE THEM, ESPECIALLY THE BASE.
2. Into the small Mixmaster bowl, add together:
150 gms FOAM LATEX BASE
30 gms FOAMING AGENT
15 gms CURING AGENT.
3. Into a small cup, weigh 14 gms GELLING AGENT. Set aside.
4. Begin the foaming process, according to one of the schedules below.
5. When the processing is completed, pour or inject the foam into cool molds. Work quickly.
6. Any remaining foam can be poured onto a smooth surface, where it should set to a solid mass in 5 to 20 minutes. When you can press it with a finger and a permanent indentation is formed, the foam has gelled. Place molds in oven, and cure at 185° F for approximately three hours. Small thin molds may take as little as two hours, and large thick molds can take five or six hours at 170-175°F. **WARNING: Do not use your household oven for curing foam. Vapors given off during curing are TOXIC for food use.**
7. Let the molds cool in the oven for half an hour after the oven is turned off, then slightly open the oven door to let them cool more. Removing very hot molds from the oven will crack them.
8. Demold foam pieces from warm molds. DO NOT LET MOLDS COOL TO ROOM TEMPERATURE BEFORE DEMOLDING. If they do cool, you can still remove the pieces, but it will be much more difficult, and can crack the molds.

COLD ROOM SCHEDULE (66-68° F) 17-1/2 minutes Total Time

speed # 1 for	1-minute (mixing)	(1-minute elapsed), then
speed # 7 for	6-minutes (whipping)	(7-minutes elapsed), then
speed # 4 for	4-minutes (medium refine)	(11-minutes elapsed), then
speed # 1 for	5-minutes (ultra-refining)	(16-minutes elapsed). Get ready to add gel.
speed # 1 for	30-seconds: add GELLING AGENT, then	
speed #1 for	30-seconds: Turn bowl backwards by hand to mix gel, then	
speed #1 for	30 seconds: Let mixer run until 17-1/2 minutes have elapsed. OFF NOW.	

NORMAL ROOM SCHEDULE (69-74° F) 14-1/2 minutes Total Time

speed # 1 for	1-minute (mixing)	(1-minute elapsed), then
speed # 7 for	6-minutes (whipping)	(7-minutes elapsed), then
speed # 4 for	3-minutes (medium refine)	(10-minutes elapsed), then
speed # 1 for	3-minutes (ultra-refining)	(13-minutes elapsed). Get ready to add gel.
speed # 1 for	30-seconds: add GELLING AGENT, then	
speed #1 for	30-seconds: Turn bowl backwards by hand to mix gel, then	
speed #1 for	30 seconds: Let mixer run until 14-1/2 minutes have elapsed. OFF NOW.	

WARM ROOM SCHEDULE (75-80° F) 12-1/2 minutes Total Time

speed # 1 for	1-minute (mixing)	(1-minute elapsed), then
speed # 7 for	6-minutes (whipping)	(7-minutes elapsed), then
speed # 4 for	2-minutes (medium refine)	(9-minutes elapsed), then
speed # 1 for	2-minutes (ultra-refining)	(11-minutes elapsed). Get ready to add gel.
speed # 1 for	30-seconds: add GELLING AGENT, then	
speed #1 for	30-seconds: Turn bowl backwards by hand to mix gel, then	
speed #1 for	30 seconds: Let mixer run until 12-1/2 minutes have elapsed. OFF NOW.	

If your foam **gels too fast**, cut a minute or two off your ultra-refining time, or use a little less gelling agent (11 or 12 gms). If your foam **gels too slowly**, add a minute or two to your ultra-refining time. LARGER BATCHES USE DIFFERENT SCHEDULES. Undercured foam will spring back too slowly. **The latex base needs to be shaken once a week, to keep the "serum layer" from settling on the bottom.**

Using foam latex is a skill, and it can be tricky. Please call for information, schedules or technical support.

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Before starting, have your molds ready. A thin coating of GM Foam Mold Release should be brushed onto the interior surfaces of both positive and negative, and allowed to dry thoroughly. Whisk away excess when dry.

2-1/2 BATCH MIX Soft mix: 6 to 6-1/2 volumes Temp 68-70° F, humidity about 45-55%

1. SHAKE THE BOTTLES OF COMPONENTS BEFORE YOU USE THEM.

2. Into the large Mixmaster bowl, add the following:

LATEX BASE	375 gms
FOAMING AGENT	85 gms
CURING AGENT	40 gms.

3. Into a small cup, weigh 35 gms GELLING AGENT. Set aside.

4. Process the foam according to the following schedule:

<u>speed</u>	<u>minutes</u>	<u>elapsed</u>	
1	1	1	Mix ingredients.
12	7	8	Whip. Height less than 1" from rim of bowl. Can backbowl for more volume, if needed.
8	2	10	Continue rising slightly. Height about 3/4" from rim of bowl.
4	3	13	Occasionally backbowl to break up bubbles in center.
2	3	16	Finish refining. Prepare to add gel.
2	1/2	16-1/2	Take 30-seconds to pour the gel.
2	1/2	17	Backbowl (slowly turn the bowl backwards by hand).
1	1/2	17-1/2	Continue mixing until 17-1/2 minutes, when the mixer is turned off.

5. NOW FOLLOW STEPS 5 THROUGH 8 ON THE SMALL BOWL SCHEDULE FOR FILLING, CURING, AND DEMOLDING (on the reverse of this page).

Backbowling (turning the bowl backwards by hand) is the most effective way to disperse the GELLING AGENT. Do it slowly, so air won't be mixed in. Variations in the above schedule are to be expected, since weather conditions are so different. Temperature and humidity variations affect the working time of the foam. The main principles to remember are: **HIGHER TEMPERATURES MAKE THE FOAM GEL FASTER**, and **HIGHER HUMIDITY MAKES THE FOAM GEL FASTER**.

To correct for these conditions, use these tips: In hot and/or muggy conditions, cut the GELLING AGENT DOWN TO 30 GRAMS, AND CUT A MINUTE OR TWO OFF THE REFINING TIME. In other words, pour less GELLING AGENT into the mix, and pour it sooner. You may have to pour at 14 or 15 minutes elapsed time, instead of 16, as the schedule shows.

In colder and drier conditions, the reverse is true. To prevent a very slow gel, you can use more GELLING AGENT (for example, 40 gms), and ADD A MINUTE OR MORE TO THE REFINING TIME.

Where very soft batches are desired, HIGH RISE FOAMING AGENT may be substituted for some of the FOAMING AGENT, for example: 50 gms FOAMING AGENT + 35 gms HIGH RISE FOAMING AGENT. The resulting batch can be whipped close to the top of the bowl, if desired, or any height less than that. Remember that the higher you whip the foam, the softer it will be, but it becomes more difficult to pour, and tends to trap more air, since it is thicker at high volumes. When using HIGH RISE FOAMING AGENT, do not let your gel time be too slow, or cell breakdown can occur. Gel time should be ten minutes or less.

Using foam latex is a skill, and it can be tricky. Please call for information, schedules, or technical support.

150 GRAM BATCH—Normal room conditions of 69-72° F, and 45-55% humidity

150 gms	Latex Base
30 gms	Foaming Agent
15 gms	Curing Agent
14 gms	Gelling Agent

Weigh the first three components and add to the 5-qt. bowl. Weigh the Gelling Agent into a small cup, and set aside. While holding the whisk inside the bowl, carefully place the bowl onto its holding pins and snap it in place, then attach the whisk to its shaft on the mixer. Using the handle on the right side of the machine, raise the bowl to its mixing position. You are now ready to use the following schedule:

<u>speed</u>	<u>minutes</u>	<u>elapsed time</u>	
1	1	1	Mix ingredients
10	4	5	Whip
4	1	6	Break the largest bubbles
1	4	10	<u>Refine foam to a fine-celled consistency. Prepare to add gel.</u>
1	2	12	OFF At 10 minutes, add gel, then continue mixing until 12 minutes.

At 10 minutes, add the Gelling Agent. Slowly drip it into the mix. After all the Gelling Agent is added, use the handle on the right side of the mixer to drop the bowl while the mixer is turning. This allows the "dead spot" of unblended material inside the whisk to drain out and be mixed into the rest of the batch. Raise the bowl to its normal position after two or three revolutions of the whisk. Use this lowering procedure two or three times in the final minutes of your schedule. At 12 minutes, turn the mixer off. Detach the whisk before trying to remove the bowl. Your foam is now ready to fill molds.

450 GRAM BATCH—Normal room conditions of 69-71° F, and 45-55% humidity.

450 gms	Latex Base
90 gms	Foaming Agent
45 gms	Curing Agent
42 gms	Gelling Agent

Weigh the first three ingredients, and add to the bowl. Weigh the Gelling Agent into a small cup, and set aside. Assemble the bowl and whisk, and use the following schedule:

<u>speed</u>	<u>minutes</u>	<u>elapsed time</u>	
1	1	1	Mix ingredients
10	4	5	Whip to approx. 1-1/4" from rim of bowl
4	10	15	Gain about 1/8" height
1	4	25	<u>Refine. Drop bowl periodically while refining.</u>
1	2	27	OFF At 25 minutes, slowly drip in the Gelling Agent. Drop the bowl at least two or three times in the last two minutes.

TIPS FOR USING GM FOAM

MOLD PREPARATION FOR ULTRACAL 30 AND OTHER STONES

1. New damp molds should be sealed with wax before applying GM Foam Mold Release. Failure to do so usually results in pocked surfaces on the finished foam, and loose skin. An effective wax sealer can be made by thinning Johnson's Paste Wax (or any other commercial carnauba type paste wax) with 99% alcohol. This thin wax sealer is painted into the mold, then dried. It is also useful to bake the empty molds at 150° F for at least an hour. Thick molds can take many hours to dry properly. A second coat of wax sealer can now be applied, dried, and brushed out with a dry brush. A sheen usually develops on the mold surface.
2. On the sealed, buffed mold surfaces, paint a thin layer of GM Mold Release and allow to dry. Whisk any excess dried release away with a dry brush. Molds are now ready to be used.

FOAM TIPS

1. Please READ THE INSTRUCTIONS prior to starting your foam job. Your supplier can also provide you with Materials Safety Data Sheets for the foam components, which you should also read.
2. If your foam GELS TOO FAST, cut your refining time by a minute or two. This means you will be pouring your Gelling Agent a minute or two sooner. In extreme cases of heat and humidity, you may need to cut down the time and use less Gelling Agent. You can use as little as 10 or 11 gms Gelling Agent per 150 gms Latex Base.
3. If your foam GELS TOO SLOWLY, add a minute or more to your refining time. In extreme cases of coldness and low humidity, you may need to add minutes to your refining time, and also add more Gelling Agent, up to 20 gms Gelling Agent per 150 gms Latex Base.
4. SLUGGISH OR UNDERCURED FOAM can be remedied by curing for a longer time. If your oven is tightly packed with molds, you will need to allow extra time for heating, and you'll need to leave enough space between molds to allow even heating. Overcured foam loses tear strength and stretch. Cure for less time in such cases.
5. PIGMENTATION is best achieved by using GM Foam Water Base Pigments. These are specially formulated to be colorfast in the foam, and will not overplasticize the foam the way Universal Tints will.

DEMOLDING

1. Demolding is easiest when the molds have cooled to 120-130° F. This is warm to the touch. You can demold at higher temperatures, but it is hard on the molds, and causes cracking. It helps to have a thin wooden stick to insert between the mold halves as they are opening. This wooden stick can be used to carefully pull the foam away from one side of the mold, leaving it intact on the other side. The foam is then powdered with baby powder and removed from the second half of the mold.
2. IT IS VERY IMPORTANT TO WASH FOAM PIECES. They should be placed in a container of warm water with a few drops of liquid dish washing soap or baby shampoo added. Do not use too much soap. Gently squeeze the water into and through the pieces. Rinse in clear water until no trace of soap or residue is left. Press the water out of the pieces on cloth or paper towels. Do not wring. Dry pieces flat, or on forms that match their natural curvature, so wrinkles won't set in. IT IS IMPERATIVE TO DRY THE PIECES BEFORE STORING. Wet pieces stored in airtight baggies will develop a sulfur smell. When dry, pieces may be powdered and stored in baggies or other appropriate containers.
3. When molds are used repeatedly, a brown residue builds up on the mold surfaces. This buildup can be scrubbed out with 99% alcohol and a short bristled brush. Only use enough pressure to lift the residue; excessive scrubbing can remove precious mold detail.

STORAGE OF PIECES

When foam pieces have been washed, dried, and powdered, they are best stored in airtight containers away from light. It is convenient to use either zip-lock plastic bags, or plastic refrigerator containers that have airtight lids. These baggies or plastic containers are then stored in a cardboard box or any other opaque container that can keep out the light. If stored in this way, pieces can be stored for years without any deterioration.

SAFETY INFORMATION

1. Read the instructions before starting.
2. Have adequate ventilation to remove ammonia fumes.
3. Wear safety goggles and gloves when working with foam.
4. Do not let foam components come into contact with skin. If this accidentally happens, wash with soap and water as soon as possible. Clean up spills.
5. Wash your hands after working with foam. Never eat, drink, or smoke without washing first.

**WARNING: Never use a household oven for curing foam.
Fumes given off by curing foam are toxic for food use.**

GM FOAM INSTRUCTIONAL VIDEO IS AVAILABLE FOR THOSE WHO WANT TO SEE HOW IT WORKS.