

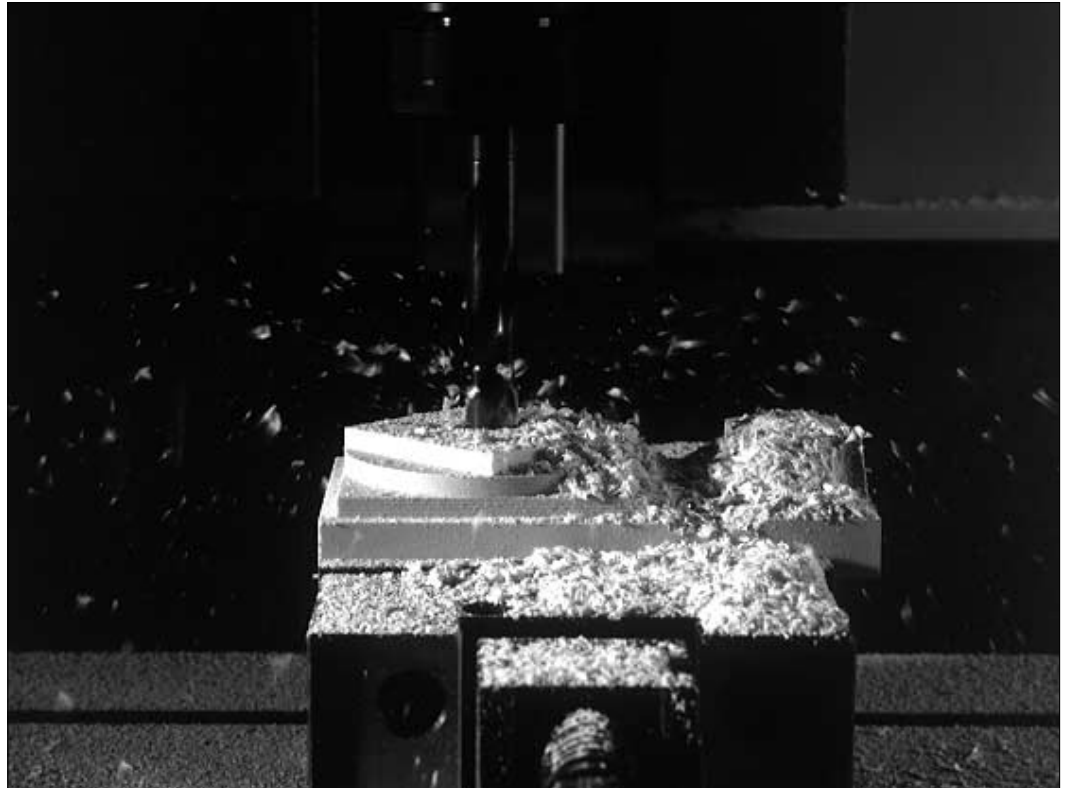


**Rayite™ 100**  
**MACHINABLE**  
**MEDIA**

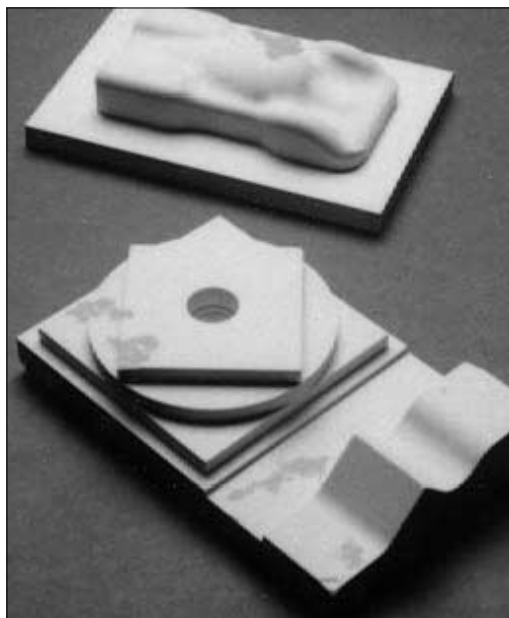
**Mix it. Cast it. Machine it.**

RAYITE™ 100 Machinable Media is a new mineral-based material developed by United States Gypsum Company for prototyping, mold making, tape proofing, models and tooling aids. Used with all machining processes, this super-tough material machines smooth with outstanding edge definition. The results are sharp, precise cuts with minimal loading on milling machines and cutting tools.

RAYITE 100 Machinable Media simplifies your preparation time by eliminating labor-intensive gluing and clamping of board-type machinable products. Just mix it, cast it and machine it.



Rayite 100 media “chipping” as it is machined—there’s no dust!



Machined pieces of Rayite 100 media show outstanding edge definition.



Rayite 100 media being machined on CNC-type milling equipment.

## RAYITE 100 Machinable Media

- Low abrasion and friction causes less tool wear.
- Ability to cast in any shape means less waste and increased versatility.
- Mineral-based, non-combustible, non-toxic formula offers safe mixing and casting.
- Ease of use means you just mix with water.
- High quality surface reduces surface prep time and patching.
- Dimensional stability provides a shield against wide swings in temperature and humidity conditions.
- Unique formulation results in dust-free milling.
- No special handling of shavings and waste means easy clean up.

### Equipment Requirements

1. Mixing vessel
2. Accurate scale
3. Mixing device
4. Spatula or steel straight edge
5. Mixing motor

Use proper sized vessel and mixing equipment. Follow chart below for equipment recommendations.

### Mixing Instructions

1. Weigh water.
2. Weigh RAYITE 100.
3. Sift RAYITE 100 into water.
4. Soak for 2 minutes.
5. Mix for 2-3 minutes.

Use spatula or other device to scrape sides of mixing vessel.

### Typical Physical Properties

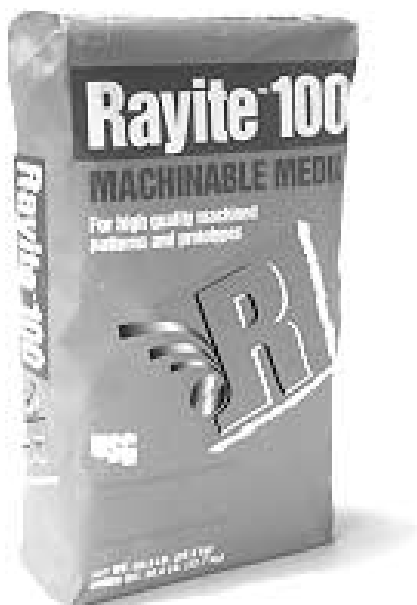
Typical Physical Properties		Test Method
Use Consistency, (cc/100g) (modified)	30cc	ASTM C472
Vicat Set Time, Machine Mix (modified)	50-60 (±5) min.	ASTM C472
Wet Compressive Strength (one hour)	1,000 psi	ASTM C472
Dry Compressive Strength	4,000 psi	ASTM C472
Tensile Strength	900 psi	ASTM D638-94
Elongation	0.17%	ASTM D638-94
Flexural Strength	1,800 psi	ASTM D790-92
Tangential Flexural Modulus	1,000,000 psi	ASTM D790-92
Unnotched Izod Impact Strength	0.235 ft. lbs./in.	ASTM D4812-93
Wet Density @ 30cc	109 pcf	ASTM C472
Dry Density @ 30cc	97 pcf	ASTM C472
Heat Deflection	300 °F	ASTM D648-88
Coef. of Linear Thermal Expansion	1.22 x 10 <sup>-5</sup> in./in./°F	ASTM D648-91
Thermal Analysis		
Major Melt Point	302 °F	See Note 1
Minor Melt Point	356 °F	See Note 1
Dimensional Stability	Excellent	See Note 2
Expansion, Maximum (3 hour) (modified)	0.164%	ASTM C472
Expansion, Final (modified)	0.164%	ASTM C472

1. Thermal Analysis was performed utilizing a Dupont Model 910 Differential Scanning Calorimeter.
2. Dimensional Stability represents a seven step environmental test. Changes in dimensions were measured after each environmental immersion. The difference between the initial and the final dimensions were compared. Rayite 100 exhibited "excellent" dimensional stability (with 0.001"/in. ft.).

### Recommended Mixer/Vessel Relationships

Batch Size		Vessel Dimensions		Blade-Size/Type	Mixing Motor
RAYITE 100	Total Mix Volume	h=height d=diameter	Volume		
<20 lbs.	<1.8 gal.	h=10" d=8.5"	2.46 gal.	2-3" prop/Jiffy®	3/8", 2500 RPM drill
20-50 lbs.	1.8 to 4.5 gal.	h=13" d=11"	5.35 gal.	4" prop/3.75" Jiffy®	3/8", 2500 RPM drill
50-100 lbs.	4.5-9 gal.	h=17" d=12"	11.8 gal.	4" prop/3.75" Jiffy®	1/2", 1200 RPM drill
		h=22" d=14"	14.7 gal.	4" prop/5" Jiffy®	1/2", 1200 RPM

1. Mixing vessel should be appropriately sized to contain RAYITE 100 slurry volume assuming that density of slurry is approximately 109 lb./ft.<sup>3</sup> at a water to RAYITE 100 weight ratio of 0.3 to 1.
2. Mixing vessel dimensions should maximize height and minimize diameter such that the height:diameter ratio is 1.2-1.6.
3. Either a Jiffy® mixer or prop blade should be used for agitation. The blade diameter should be approximately 1/3 the diameter of the mixing vessel. Mixing motor should provide 1200-2500 RPM under load.



**Note:** Photos courtesy of Advanced Machinery Sales, Inc., Elgin, Illinois.

**Trademarks:** Rayite is a trademark of United States Gypsum Company. Jiffy® is a trademark of the Jiffy® Mixer Co. Inc.

**For more information about RAYITE 100 Machinable Media, please call (800) 487-4431.**

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