USG Industrial & Specialty Solutions

USG POTTERY PLASTER

SOUTHARD, OK

DESCRIPTION

USG Pottery Plaster is an economical all-purpose pottery plaster. Specifically formulated for most slip casting applications in the ceramic industry, USG Pottery Plaster produces more absorbent pottery molds. If information for a specific use is needed, please contact your local USG Sales Representative for further assistance.

TYPICAL PHYSICAL PROPERTIES

Normal Consistency	65 lbs. water/100 lbs. product (29 kg water/45 kg product)
Machine Mix Vicat Set, Target (minutes)	14 - 24
Compressive Strength, One Hour After Set	850 psi (5.9 MPa)
Compressive Strength, Dry	1600 psi (11 MPa)
Density, Wet	97.6 lbs./cu. ft. (1567 kg/m^3)
Density, Dry	66.0 lbs./cu. ft. (1057 kg/m^3)
% Maximum Expansion	0.19%

NOTE The *Typical Physical Properties* in the above table were achieved under controlled laboratory conditions with freshly produced material, results may vary. Other set times may be available; call your USG Sales Representative for more information. Hand mix times will be longer.

MIXING INSTRUCTIONS

MIX PREPARATION

Use potable water at temperatures between 70 °F (21 °C) and 100 °F (38 °C). Because variations in slurry (USG Pottery Plaster and water mixture) temperature produce variations in set time, it is important to keep both the USG Pottery Plaster and water in a stable temperature environment prior to use. The higher the temperature of the slurry, the shorter the set time. Conversely, the lower the temperature of the slurry, the longer the set time.

Weigh both the USG Pottery Plaster and the water prior to use for each mix. The water-to-USG Pottery Plaster ratio is critical because it governs the strength and absorptivity of the mold.

SOAKING

Sift or strew USG Pottery Plaster into the water slowly and evenly. Do not drop large amounts of USG Pottery Plaster directly into the water as proper soaking of the USG Pottery Plaster may not occur. USG Pottery Plaster should be fully dispersed in the water prior to mixing. Small batches require less soaking time than large batches. See USG IG503 *Plaster Mixing Procedures* for specific soaking instructions.

MIXING

Mixing USG Pottery Plaster slurry is one of the most important steps in producing USG Pottery Plaster molds with maximum strength, absorption, hardness and other important properties.

Mechanically mixed slurries develop uniform molds with optimal strengths. USG Pottery Plaster can be mechanically mixed through both batch and continuous processes. Proper blade and bucket dimensions are important for obtaining the best batch mix (see USG IG503 *Plaster Mixing Procedures* for details).

Longer mixing times result in higher mold strength and shorter set times.

POURING

To prevent air entrainment and provide a uniform, smooth surface, careful pouring of USG Pottery Plaster slurry is necessary. Agitation/vibration of the filled mold is a further step used to prevent air at or near the mold surface. Whenever possible, USG Pottery Plaster slurry should be poured carefully in the deepest area so that the slurry flows evenly across the surface of the case mold.

Pouring a large amount of slurry directly on the face of the case mold may result in slight densification of the USG Pottery Plaster mold at the point where it strikes the surface of the case. This produces a hard spot, giving uneven absorption.

DRYING

All pottery molds should be dried as quickly as is safely possible after manufacture so that maximum physical properties can develop. Dry to a constant weight.

The best drying rooms or ovens provide 1) uniform and rapid circulation (minimum of 15-30 fps (4.6-9.1 mps)) of air with no “dead spots” having little or no air movement, 2) equal temperatures throughout the entire area, and 3) provisions for exhausting a portion of the air while replacing it with fresh air. High humidity surrounding the drying room or oven inhibits drying efficiency because the air pulled into the room is incapable of picking up much moisture from the molds.

The maximum temperature at which USG Pottery Plaster molds are safe from calcination is 120 °F (49 °C). With substantial free water in the mold, a higher drying temperature can be used without difficulty. As drying progresses, the temperature must be reduced to prevent calcination. Before removing molds from the dryer, the temperature should approach that of the area around the dryer to prevent thermal shock. See IG502 *Drying Plaster Casts* for additional information.

STORAGE AND USE

When properly used, USG Pottery Plaster is easy to work with and complies with the federal Labeling of Hazardous Art Materials Act, 12 U.S.C. Section 1277 and ASTM D4236. Keep indoors at temperatures between 65 °F – 75 °F (18 °C – 24 °C) and 45% – 55% RH. Do not stack more than two pallets high. Keep from drafts. Rotate stock. USG Pottery Plaster should be used within six months of the manufacturing date located on the package. Always follow handling and use directions and safety warnings on the package.

PRODUCT INFORMATION
See usg.com for the most up-to-date product information.

CAUTION
When mixed with water, this material hardens and becomes very hot sometimes quickly. DO NOT attempt to make a cast enclosing any part of the body using this material. Dust from mixing may cause irritation to eyes, skin, nose, throat and upper respiratory tract. Use only in a well-ventilated area, wear a NIOSH/MSHA-approved respirator. Wear eye protection. If eye contact occurs, flush thoroughly with water for 15 minutes. If on skin: Wash with plenty of water. If swallowed and/or irritation persists, call physician. For more information call Product Safety: 800-507-8899 or see the SDS at usg.com
KEEP OUT OF REACH OF CHILDREN.

NOTE
The information in this document is subject to change without notice. USG Corp. assumes no responsibility for any errors that may inadvertently appear in this document. Consult your USG Company sales office or representative for information.

NOTICE
We shall not be liable for incidental or consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instruction or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

SAFETY FIRST!
Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

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