USG Industrial & Specialty Solutions

USG NO. 1 MOULDING PLASTER

SOUTHARD, OK

DESCRIPTION

USG No. 1 Moulding Plaster is a high purity general purpose plaster that can be used in a wide variety of applications including architectural ornamentation and dental use. The physical properties can be varied depending upon the desired end use, while the use consistency can vary from a practical range of 45 lbs. water/100 lbs. of plaster to as high as 100 lbs. water/ 100 lbs. of plaster.

USG No. 1 Moulding Plaster is noncombustible. With a coefficient of thermal conductivity (k) of 0.25 to 4.0 depending on density and additives, USG No. 1 Moulding Plaster can help to provide a high degree of fire resistance. When dry, USG No. 1 Moulding Plaster is electrically nonconductive and makes a good insulating medium. When properly used, USG No. 1 Moulding Plaster is safe to handle and easy to work with. Always follow handling and use directions and safety warnings on the package.

Please contact your local USG Sales Representative for further assistance for specific use information.

TYPICAL PHYSICAL PROPERTIES

Normal Consistency (lbs. water/100 lbs.)	63 - 73
Hand Mix Vicat Set (Range)(minutes)	25 - 50
% Passing 50 mesh screen	99 - 100
% Passing 100 mesh screen	98.5 - 100
Compressive Strength, One Hour After Set (psi)	850 - 1250
Compressive Strength, Dry (psi)	1700 – 2500
% Expansion	0.15% - 0.20%

NOTE: The *Typical Physical Properties* in the above table were achieved under controlled laboratory conditions with freshly produced material, results may vary.

MIXING INSTRUCTIONS

MIX PREPARATION

Use potable water at temperatures between 70 °F and 100 °F. Because variations in slurry (USG No. 1 Moulding Plaster and water mixture) temperature produce variations in set time, it is important to keep both the USG No. 1 Moulding 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 No. 1 Moulding Plaster and the water prior to use for each mix. The water-to-USG No. 1 Moulding Plaster ratio is critical because it governs the strength and the density of the final cast.

SOAKING

Sift or strew USG No. 1 Moulding Plaster into the water slowly and evenly. Do not drop large amounts of USG No. 1 Moulding Plaster directly into the water as proper soaking of the USG No. 1 Moulding Plaster may not occur. USG No. 1 Moulding 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 No. 1 Moulding Plaster slurry is one of the most important steps in producing USG No. 1 Moulding Plaster casts with maximum strength, absorption, hardness and other important properties.

Mechanically mixed slurries develop uniform casts with optimal strengths. USG No. 1 Moulding 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.

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POURING

To prevent air entrainment and provide a uniform, smooth surface, careful pouring of USG No. 1 Moulding 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 No. 1 Moulding 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 No. 1 Moulding Plaster mold at the point where it strikes the surface of the case. This produces a hard spot, giving uneven absorption.

DRYING

All casts 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) 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 No. 1 Moulding Plaster molds are safe from calcination is 120 °F. 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 No. 1 Moulding Plaster is safe to handle and easy to work with. Keep indoors in a dry, stable environment. Do not stack more than two pallets high. Keep from drafts. Rotate stock. 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.

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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