

## PORCELAIN POWDER, TECHNICAL BULLETIN

This is a fine grade of 325 mesh the correct fineness for cold casting. Porcelain or other stone-based powders are added to polyester resin, polyurethane resin, epoxy, gypsum cement or other binders. Small objects are cast and cured in suitable molds. To conserve powder when casting large pieces you can dust (salt) the mold surface, brush a thin coating on the surface, spread or roll the metal on or spray a thin coating. The mold is then backfilled with resin or fiberglass, iron or steel shot, sand or calcium carbonate to increase the weight to give it the heft and feel of a hot foundry 'pour.'

Porcelain Powder is used with KastEZ Casting Resin to achieve the look and feel of cold cast porcelain. It is also the additive to use in casting resin to give castings the appearance of marble. Use the porcelain powder combined with the Cirius polyurethane flesh tone dyes to duplicate one of a kind dolls and sculptures. Porcelain powder is alumina, silica.

Alumina silica is produced from a naturally occurring mineral, calcined mullite, that is precisely sized as either flour or grain and is therefore subject to variability. It is typically available in three alumina contents: 47%, 60% and 70%. The standard alumina content in the investment casting industry is 47%; which provides a very economical and consistent product. These products are low in iron, alkaline and alkaline earth elements.

### COMPOSITION:

Alumina (Al <sub>2</sub> O <sub>3</sub> )	≥46.0
Silica (SiO <sub>2</sub> )	50.0
Titania (TiO <sub>2</sub> )	1.89
Ferric Oxide (Fe <sub>2</sub> O <sub>3</sub> )	≤1.0
Calcium Oxide (CaO)	0.04
Magnesium Oxide (MgO)	0.08
Sodium Oxide (Na <sub>2</sub> O)	0.09

Potassium Oxide (K <sub>2</sub> O)	0.09
Phosphorous Pentoxide (P <sub>2</sub> O <sub>5</sub> )	0.11
Specific Gravity (gm/ml)	2.62
PCE Temperature Value	3245°F (1785°C)

#### **MIXING INSTRUCTIONS:**

The standard mix ratio for cold casting is 1/3 porcelain powder and 2/3rds resin. To assure a good mix, add about half of the porcelain powder to Part A of the resin and the balance of the porcelain powder to Part B. Mix both parts well to make certain the porcelain powder is suspended in the resin in each container. Then in a separate container add both parts together and again mix well.

Adding porcelain powder to resins will slow set time. Make certain the resin has completely cured without tackiness before demolding.

You can also lighten the piece by added hollow glass beads to your backup casting mix. After curing and removal from the mold the object must be gently abraded or burnished with fine steel wool (triple 0 grade), a Scotch Brite® pad, or sand blasted to remove the microscopic film of binder from the surface of the powder particles. This exposes the pure material beneath.

#### **FOR FURTHER INFORMATION**

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