

# Raw Materials



As a major supplier of raw materials to the ceramic industry, we strive to offer our customers consistent, top quality materials that are competitively priced. On the following pages you will find a listing of chemicals and materials currently available from Laguna Clay Company. Let us know if you are seeking a material that is not listed here—we may have it.

The materials available through this catalog are in grades of purity that are most useful in the ceramic industry. Some of them are not “pure” compounds, and we are unable to warrant their consistency from batch to batch. We urge you to make thorough tests every time a new material or lot is purchased. **An ever-increasing number of the earth’s raw materials are reported to contain elements deemed “toxic,” “carcinogenic,” or a “potential health hazard.” We have identified these raw materials with an asterisk(\*) by utilizing information provided by California Proposition 65, SARA Title III and manufacturers’ Material Safety Data Sheets (MSDS). The MSDS describes the nature of the potential hazard as well as recommendations for safe use of the material. MSDS reports may be downloaded in the Raw Materials section of [www.lagunaclay.com](http://www.lagunaclay.com).**

## Dry Raw Materials

Laguna Clay Company selects producers who provide the greatest quality and consistency. We offer raw dry materials in full bags as they come to us from the mines, and we also break them down into standard smaller sizes of 1-, 5-, and 10-lb. quantities. A breakdown fee is incorporated into the price of these smaller sizes. Conversely, quantity discounts are offered for larger orders. Go to [www.Lagunaclay.com](http://www.Lagunaclay.com) to find a Laguna distributor near you.



**Albany Slip Substitute\* SG-328**  
Karl Miller developed this slip to reproduce the physical and performance characteristics of the famed Albany (NY) Slip once mined only two hrs. from his ceramic lab. Also

see Alberta Slip and Arroyo Slip clays.



**Alberta Slip Clay\***  
Popular Canadian blended substitute for the old Albany (NY) Slip that was frequently used as a glaze additive, and boasted a high proportion of fluxes, when combined with a very fine grain

caused it to melt at around 1240° C. Also see Albany Slip Substitute and Arroyo Slip.



**Alumina Hydrate\* Al(OH)<sub>3</sub>\***  
Hydrated alumina is a fine granular white powder that remains in suspension better in glaze slurries. Better adhesive qualities than Al<sub>2</sub>O<sub>3</sub>. Small additions

enhance the color of Cr-Al pinks. Larger additions can impart mattiness in the glaze.



**Alumina Oxide\* Al<sub>2</sub>O<sub>3</sub>**  
Intermediate oxide used to stabilize fluxes and glass formers that compose glazes. It is calcined and ground to 325 mesh. Lack of alumina in glazes can also result in glazes being soft and vulnerable to

degradation from culinary acids.



**Antimony Oxide\* Sb<sub>2</sub>O<sub>3</sub>\***  
Derived principally from stibnite. Can be used in combination with rutile and titanium as a yellow body stain and in glass as a decolorizing agent. When used in combination with lead glaze it produces

Naples Yellow. Can produce buff coloration when applied to the surface of red burning clay.

## BALL CLAY

The wide use of ball clay is due to its contribution of workability, plasticity and strength to the bodies in drying. It is typically mixed with non-plastic or less plastic clays for these properties. Ball clay is a variety of Kaolinite, like china-clay, but differs from china-clay in having high plasticity and less refractoriness. In chemical composition, ball and china clays do not differ greatly except that the former contains a larger proportion of silica. The high plasticity of ball clay is attributed to fine-graining and a small amount of montmorillonite.



**Bell Dark Ball Clay\***  
A very plastic ball clay used in industrial and hobby clay bodies of all types. Primary applications are dinnerware and artware. Not stocked in California.



**Black Charm Ball Clay\***  
A coarse-grained, engineered blend offering a high degree of moisture retention, plasticity, and naturally occurring organics. Ideally suited for a variety of bonding applications.



**C & C (Champion & Challenger) Ball Clay\***  
A fine-grained, engineered blend, well known for its excellent plasticity and fired properties. Extremely consistent blend suitable for a variety of forming processes where a high

degree of plasticity is required, such as dry pressing, jiggering, ram pressing and casting.



**Dresden Ball Clay\***  
A fine-grained clay used primarily in moist prepared clay bodies. The organics present contribute to excellent green strength and plasticity.



**Foundry Hill Creme (FHC) Ball Clay\***  
An intermediate-grained, engineered blend offering excellent moisture retention and plasticity properties. Ideally suited for a wide variety of stoneware applications and wet forming process.

## Dry Raw Materials continued



**Kentucky Special Ball Clay\***  
An intermediate-grained ball clay from Gleason, TN, with very good plasticity and strength. For use by the sanitaryware and artware industries.



**Kentucky Stone Ball Clay\***  
A coarse-grained, siliceous clay known for its strength and plasticity.



**KT#1-4 Ball Clay\***  
A coarse-grained, fast casting ball clay from Gleason, TN, used in all types of casting applications. Stocked only in California.



**Old Hickory #5 Ball Clay\***  
An exceptionally low organic, high kaolinite white ball clay.



**OM-4 Ball Clay\***  
A fine-grained clay with excellent plasticity and strength. OM-4 is considered an "industry standard" based on its popularity in both casting and plastic body use.



**Tennessee #1 (SPG #1) Ball Clay\***  
A coarse-grained, fast casting ball clay



**Tennessee 10 Ball Clay\*** Fine-grained with excellent plasticity and strength, and better fired color than Mississippi deposit clays used in tile industry. Not stocked in California.



**XX Sager Ball Clay\***  
A fine-grained secondary clay. Fires to a light cream with 13% shrinkage at Cone 10. Very effective in salt firing and flashes well in wood firing.



**Barnard Clay (Blackbird) Sub SG-1132**  
Historically, a source of iron in dark firing glazes. Has price advantages over using iron oxide and aids in suspending the materials in the slurry. A mixture of 90% Barnard and

20% calcium carbonate will produce a nearly black glaze around Cone 9.



**Barium Carbonate BaCO<sub>3</sub>\***  
The main source of barium oxide in glazes. Functions as a flux and assists in producing matte finishes. Also used to neutralize sulfates in clay bodies.

## Bentonites **AI2O3.5SiO2.7H2O**

A very plastic magnesium clay containing colloidal matter which in small amounts lends plasticity to a clay body. Also used as a suspending agent in glazes.



**BentoLite L-10 Bentonite\***  
This sodium bentonite is our whitest bentonite. For use in clay bodies, especially in conjunction with macaloid in porcelains.



**Ibex 200\***  
Low grade California bentonite.



**HPM-20 Bentonite\***  
Ultra-fine ground, air-purified sodium bentonite recommended when a finer grade than 325 is needed for glaze applications.



**Macaloid (Bentone ma) Bentonite\***  
A suspension agent to increase drying time of water-suspended glazes. Similar to a very clean, white type of bentonite. Used as a plasticizer in fine porcelain.



**Vee Gum-T Bentonite\***  
Macaloid-type bentonite suspension agent for glazes. Also a surface hardener. Extremely plastic hydrous magnesium silicate used to give plasticity to non-plastic whiteware and refractory bodies. Very similar to macaloid.



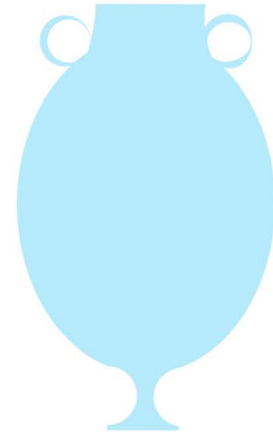
**Bone Ash Ca<sub>3</sub>(P<sub>04</sub>)<sub>2</sub> CaC<sub>03</sub>** An important source of calcium (a flux) phosphate (phosphorous, a glass former). Added in bone china to lower the maturing temperature and add translucency. Gives texture in low fire glazes and brilliance in iron reds.



**Powdered Borax Na<sub>20</sub>-2B<sub>203</sub>**  
Water soluble, low temperature flux that lowers the fusion point of glazes and promotes a smooth melt. Produces bright colors with oxides. Also a source of sodium and boric oxide in glazes. Powder form.



**Granular Borax Na<sub>20</sub>-2B<sub>203</sub>**  
Water soluble, low temperature flux that lowers fusion point of glazes and promotes a smooth melt. Produces bright colors with oxides. Also a source of sodium and boric oxide in glazes. Granular form.



# Dry Raw Materials continued



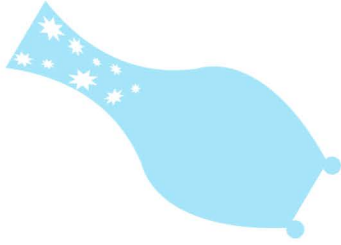
**Brushing Medium**  
A blend of gum and fine bentonite used to suspend and increase drying time. Lends better brushability to glaze.



**Carboxy/Methylcellulose (C.M.C) Powder**  
An organic cellulose gum that functions as a thickener, binder and suspending agent in glazes. Mix with water to dissolve and age before adding to a liquid glaze.



**Calcium Carbonate (Whiting) 325 mesh CaCO<sub>3</sub>\***  
Most common source of calcium in glazes. It is a high temperature flux giving durability and hardness to glazes.



**Marble White 80**  
80 mesh calcium carbonate. Used as an industrial filler.



**Calcium Nitrate Ca(NO<sub>3</sub>)<sub>2</sub>.4H<sub>2</sub>O**  
Water soluble compound used as a thickener in glaze preparation.



**Chromium Oxide Green Cr<sub>2</sub>O<sub>3</sub>\***  
A versatile colorant used in glazes to produce various green tints.



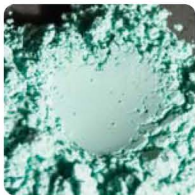
**Cobalt Carbonate CoCO<sub>3</sub>\***  
Fine particled, lavender powder used as a glaze colorant and for brushed decoration. Produces various shades of blue. When manganese is present can give purple.



**Cobalt Oxide Co<sub>3</sub>O<sub>4</sub>, CoO\***  
Reliable, stable, black powdered. Small amounts produce strong blue tones. Used as a glaze colorant and brushing oxide decoration.



**Cobalt Sulfate CoSo<sub>4</sub>.7H<sub>2</sub>O\***  
Water-soluble reddish powder, sometimes used in white clay bodies and glazes to create a cold white appearance as a result of a bluish tint.



**Copper Carbonate CuCo<sub>3</sub> (0H)<sub>2</sub>\***  
A green powder used as a glaze colorant. May produce green, blue-green or copper red depending on conditions and formulation.



**Black Copper Oxide - CuO\***  
The oldest glaze colorant known. It is a strong flux and will produce fluid glazes. Can produce copper reds in reduction firing.



**Red Copper Oxide Cu<sub>2</sub>O**  
Maintains the Cu<sub>2</sub>O structure needed for copper reds if a reduction firing is applied.



**Cornwall Stone Blend NaK<sub>2</sub>O.Al<sub>2</sub>O<sub>3</sub>.8SiO<sub>2</sub>\***  
A type of spar used in clay bodies to give strength while firing. Used in engobes for adhesive properties. With suitable flux, can be used as a glaze. Sometimes called English Cornish Stone.



**Cryolite A<sub>3</sub>Al F<sub>6</sub>**  
Synthetic cryolite (kryolite). Strong fluxing agent with a very low melting point. Good sodium-alumina source. Can be used as opacifier for enamels or to produce crackle glazes.



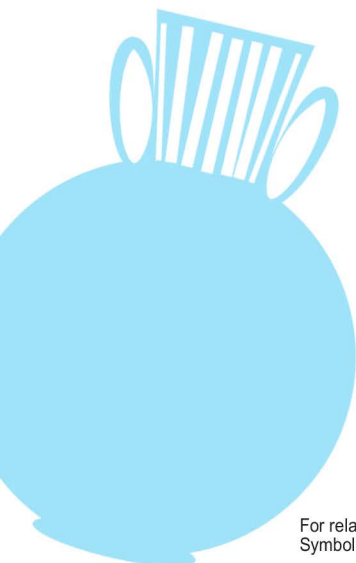
**Dextrin**  
An organic binder used mostly with plaster.



**Dolomite CaMg (C<sub>03</sub>)<sub>2</sub>\***  
Useful as a source of calcium and magnesium. Can be used as a high temperature flux and also to promote crystal formations.



**Dyes** Water soluble. Available in black. These colors are often used by manufacturers to color code similar appearing clay or glaze batches.



**Feldspars\*** Feldspars are made from crushed crystalline rock containing a mixture of aluminum silicates of sodium and potassium (with minor amounts of lithium or calcium). They contain 10-15% alkali (K<sub>2</sub>O, Na<sub>2</sub>O), melt well at medium-to-high temperatures, and are an economic source of flux. Generally, high potash feldspars are employed in bodies to promote vitrification or in glazes to promote melting at medium and high temperatures (feldspars are the primary ingredient in most high temperature raw glazes). Sodium feldspars are most commonly used in glazes as a source of alkalis.



**Custer Feldspar\***  
A standard potash spar used in clay and glaze formulas. Mined in Custer, South Dakota.



**Minspar Soda Feldspar\***  
For use in clay bodies and glaze formulas.



**Mahavir Potash Feldspar\***

For related MSDS sheets and in-depth descriptions including typical uses and chemical analysis, go to [www.lagunaclay.com](http://www.lagunaclay.com).  
Symbol Key: (LOI) Loss On Ignition (PCE) Pyrometric Cone Equivalent

## Dry Raw Materials continued

**Fire Clay** A refractory clay, typically plastic, and with significant iron impurities. Useful in many types of ceramics, including brick, certain types of tile and sculpture, and pottery clays. They impart plasticity and particle size distribution to the body, and counter the early melting of any low temperature clays in the mix. For vitreous fireclay based bodies, considerable feldspar content is necessary.



**Gold Art Fire Clay\***  
A 200 mesh air-floated plastic stoneware clay. Fine properties in a wide firing range and balanced enough to be used alone as a body. Fires to light or golden buff, max. firing range of Cone 10-12.



**Greenstripe Fire Clay\***  
Fine-grained, air-floated, with excellent green strength. Buff in oxidation and quite brown in reduction.



**Hawthorne Bond aka Missouri Fire Clay\***  
Popular buff firing plastic with a fine particle size. Fires a light color with approximately 10% shrinkage at Cone 10. Ground to 40 mesh.



**Imco 400 Fire Clay\***  
Very good plasticity and green strength. Same as Lincoln 60 Fireclay, however it is air-floated to 200 mesh. Buff in oxidation and golden brown in reduction firing.



**Imco 800 Fire Clay\***  
A very smooth plastic clay with kaolin-like working properties. Ground to 200 mesh and tan burning. More like a stoneware. Tends to bloat when fired to Cone 11 or higher.



**Lincoln 60 Fire Clay\***  
Used as a major ingredient in mid fire bodies. Hammer-milled material provides excellent drying properties and high plasticity. Fires buff in oxidation and golden brown in reduction.



**Lincoln 8 Fire Clay\***  
A major ingredient in mid fire bodies. Hammer-milled material provides excellent drying, high plasticity and higher iron content. Fires buff in oxidation and golden tan brown in reduction.



**Roseville Fire Clay\***  
A high iron stoneware. Begins maturation slightly lower than other stonewares. Useful in mid-range clay bodies. Fires to a yellow or tan color. A tendency to bloat. Stocked only in Ohio.



**Fluorspar CaF<sub>2</sub>**  
Crystalline mineral with lower fluxing temperature than other calcium compounds. Can be used as a substitute for whiting to promote more fusible glazes. Insoluble in water, it should be used at 100 mesh or finer as it can cause mottling in glazes.



**Gerstley Borate Na<sub>20.2</sub>Ca<sub>0.5</sub>B<sub>203.16</sub>H<sub>20</sub>**  
A sodium-calcium-borate compound used as a low temperature flux to help prevent crazing. Can act somewhat as an opacifier. Standard substitute for colemanite.

## Grogs\*

A hard-fired clay crushed to various mesh sizes. Added to throwing and sculpture clay bodies to increase working strength and reduce shrinkage. Helps dry thick pieces.



**Mulcoa 47 Grog\***  
An off-white-to-gray mullite grog used in clay bodies.  
*Shown at left: 20 x 50, 20, 48, and 200 mesh.*



**Gum Arabic**  
A powdered, natural gum material used as a binder and suspending agent in glazes.



**Ilmenite, Granular FeO-TiO<sub>2</sub>**: Iron titanium oxide mineral, insoluble at 20°C. Granular Ilmenite is primarily used as an addition to clay or glaze to introduce dark brown, peppery specks.



**Iron Chromate FeCrO<sub>3</sub>\***  
Produces dark colors in engobes and underglazes. Can also be added with manganese compounds to clay bodies as a colorant.

## Iron Oxide

Provides coloration for many buff and terra cotta clay bodies. It is also used as a colorant for tomato red and traditional celadon glazes.



**Iron Oxide: Black 5599 Fe<sub>304</sub>\***  
Ferrous ferric oxide. A more concentrated form of red iron oxide.



**Iron Oxide: Brown 521 Fe<sub>203</sub>\***  
A weak, natural iron oxide. Reddish-brown raw color.



**Iron Oxide: Red 4284 Fe<sub>203</sub>\***  
Ferric oxide. Produces various shades of brown or green when used as a glaze colorant or decorative oxide. In high fire matte glazes, iron oxide and titanium can produce reddish colors. Our most commonly used iron oxide in both clay and glaze.



**Iron Oxide: Red Spanish Fe<sub>203</sub>\***  
81% Fe<sub>203</sub>, this imported natural iron oxide is bright red in its raw form.



**Iron Oxide: Yellow Fe(0H)<sub>3</sub>\***  
A weaker form of iron. High clay content.

## Dry Raw Materials continued

### Kaolin (aka China Clay)

A pure clay mineral crystal of one part alumina and two parts silica. A huge array of kaolin products are available that vary in plasticity, crystal and surface chemistry, particle shape, and size, flow properties, permeability, etc. Pure kaolin is the clay of choice for bodies that need to be clean and white. However, relatively low plasticity generally requires a blend of other clays in non-casting bodies. Kaolins are employed in glaze recipes to keep the flint, feldspar, frit and other particles from settling out, and as the primary source of alumina oxide.



#### #6 Tile Clay Kaolin\*

A highly plastic air-floated kaolin with moderate whiteness. It offers high green strength for superior wet processing properties.



#### EPK Kaolin\*

A unique, high quality water-washed ceramic, white-fired. Unusually good forming characteristics and green strength. Use for clean suspension in glazes.



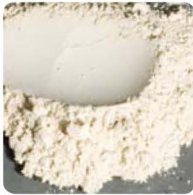
#### Glomax LL Kaolin\*

A 325 mesh, calcined kaolin that imparts dimensional stability and improves thermal shock resistance.



#### Grolleg (English) Porcelain Kaolin\*

A blended china clay with moderate plasticity, high flux content, good translucence and white-fired color. Common ingredient in many porcelains.



#### Helmer Kaolin\*

North American kaolin used primarily for its flashing properties in wood firing.



#### Ione Kaolin\*

A California kaolin with low alkali content and moderate iron content. Stocked only in California.



#### Kingsley Kaolin\*

A course-grained white firing clay used in the dinnerware, tile, art ware and electrical porcelain industries.



#### McNamee Kaolin\*

A plastic kaolin from South Carolina. A course particle-sized kaolin used for many white stoneware bodies. Good throwing properties. Not very translucent.



#### New Zealand Kaolin (Halloysite)\*

Considered by many the whitest clay in the world. Produces some of the highest quality porcelain and bone china. Outstanding strength and translucency.



#### Opticast Kaolin\*

Relatively coarse blended for use in ceramic casting operations. Useful in pressure casting systems where a faster casting is desired.



#### Standard Porcelain Kaolin\*

A white firing, highly plastic English kaolin with good translucent characteristics.



#### Super Standard Porcelain Kaolin\*

An exceptional, white firing, plastic blended kaolin with excellent translucent characteristics.



#### Kryolite

See Cryolite



#### Kyanite 3AL2O3.2SiO2\*

A refractory material used to reduce shrinkage and give strength to the body. Can form mullite during firing.

Shown left to right: 35, 48, 100, and 200 mesh.

## Dry Raw Materials continued



**Lithium Carbonate**  
**Li<sub>2</sub>CO<sub>3</sub>\*** Used as a flux in leadless glazes. A source of lithia, a strong, high-temperature flux. Improves glaze brightness and increases firing range. Reduces thermal expansion. Available in fine or coarse.



**Lithium Fluoride LiF**  
Similar but stronger than carbonate.



**Macaloid**  
*See Bentonites.*



**Magnesium Carbonate**  
**MgCO<sub>3</sub>** Imparts strength and color with little shrinkage. In larger proportions, it produces a dry, opaque quality in glazes.



**Magnesium Oxide MgO**  
Often used for refractory applications.



**Magnesium Sulfate**  
**MgSO<sub>4</sub>.7H<sub>2</sub>O** Also known as Epsom Salts. Can thicken a glaze to improve adhesion to non-porous surfaces. Acts as a suspension agent.



**Magnetite (Granular)**  
**Fe<sub>3</sub>O<sub>4</sub>\*** Mineral form of black iron oxide. When mixed in clay body or glazes, it produces a speckling effect. (Screen due to inconsistent particle sizes).



**Manganese Carbonate**  
**MnCO<sub>3</sub>\*** A weak coloring agent. In an alkaline glaze, a blue-purple or plum color can be obtained. In leadless glazes, a purple-brown may result. A powerful flux.



**Manganese Dioxide**  
**MnO<sub>2</sub>\*** A black powder that gives red, brown, purple or black tones to clay bodies and glazes. A strong flux when added in large amounts to clay bodies. Available in 200 and 325 mesh.



**Manganese Dioxide**  
**MnO<sub>2</sub> Granular\*** A black 40-60 mesh material often used for speckling in clay and glazes.



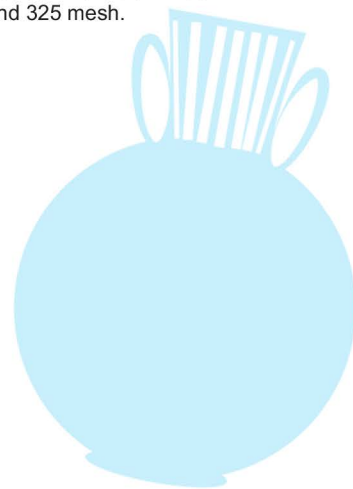
**Mica 325**  
**K<sub>2</sub>Al<sub>4</sub>Al<sub>2</sub>Si<sub>6</sub>O<sub>20</sub>(OH)<sub>4</sub>** Water-ground, 325 mesh powder. Usually added to a glaze formula to aid in craze resistance. Also helps thermal and moisture expansion resistance.



**Molochite**  
Calcined English kaolin. Cleanest, whitest grog available. Used in whitest porcelain bodies to reduce cracking in drying and firing.  
*Shown left to right: 30, 50-80, and 200 mesh. 100 mesh is also available.*



**Mullite 3Al<sub>2</sub>O<sub>3</sub>.2SiO<sub>2</sub>\*** (Calcined kyanite)  
Virginia mullite can be added to a clay body to check thermal expansion and add strength.  
*Shown left to right: 35, 48, 100, and 200 mesh.*



**Nepheline Syenite**  
**K<sub>2</sub>O.3Na<sub>2</sub>O.4Al<sub>2</sub>O<sub>3</sub>.9SiO<sub>2</sub>\*** Similar to a soda spar. Can reduce crazing tendencies. Used in glazes where a soda spar is required. *Shown at left: A-270 (200 mesh) and A-400 (325 mesh).*



**Nickel Carbonate NiCO<sub>3</sub>\***  
Common glaze colorant. Green nickel produces a variety of browns, blues, grays, and yellows depending on the presence of other materials in the glaze.



**Nickel Oxide NiO\***  
Produces browns, blues, grays and yellows in glazes. Can also tone down more intense colorants such as cobalt and copper. Maximum use is usually 3%.



**Ochre Yellow**  
**2Fe<sub>2</sub>O<sub>3</sub>.3H<sub>2</sub>O\*** A variety of limonite containing iron and manganese, which is used in engobes, underglazes, and overglazes.

## Dry Raw Materials continued



**PV SUB(Plastic Vitrox) Clay** in a ceramic casting slip or plastic clay body, has the unique capability to promote plasticity from the clay portion, fluxing action from the feldspar portion, and low shrinkage and stability from the non-plastic quartz portion. Permits low

temp firing in high talc bodies, and resistance to glaze crazing and dunting during cooling.



**Potassium Carbonate K2CO3**

Also known as Pearl Ash. A strong flux and can be used as a color modifier in glazes.



**Navajo Pumice\***

Also known as Volcanic Ash. A type of feldspar used in glazes.



**Petalite Li2O.AL2O3.8SiO2\***

A lithium feldspar used in clay bodies and glazes to help decrease thermal shock problems.



**Pyrophyllite Al2O3.4SiO2.H2O\***

An aluminum silicate that is added to clay bodies to reduce thermal expansion. Pyrotrol (Ohio) and Pyrax HS (higher purity grade) are available.



**Potassium Bichromate or Dichromate\***

Used in glass to give a green color, and in ceramic glazes to produce chrome-tin pink, low fire reds, greens and purplish-red colors.



**Paper Pulp**

Fiber used in making Paper Clay. Suggestion: Add 3-4% pulp to clay.

## Red Clays

Rich in iron and used as a main ingredient in terra cotta clays. Also used as a component of iron-rich glazes and engobes.



**C Red Clay\***

An air-floated, smooth plastic California clay with a moderate red iron oxide content. Gives medium orange to red colors in non-vitreous bodies, browns in vitreous stonewares.



**Laterite Red Clay\***

High iron content that tends to fire on the browner side of the orange-red spectrum.



**Red Art Clay\***

An air-floated, red firing earthenware of moderate plasticity and low shrinkage. Fires light orange to dark red depending on firing temperature from Cone 05-06.



**Raw Sienna\***

An iron-bearing clay used as a colorant in engobes, stains, underglazes and overglaze decoration.



**Rutile TiO2\***

An impure titanium dioxide, tan colorant that contains a small amount of iron. Used for color and tendency to provide mottled textures. Available in Ceramic Grade and Milled (Rflux 61).

**Sand: California\***

Feldspathic silica sand replaces grog to add texture and strength. Begins to soften at Cone 10. Shown left to right: 16, 30 and 60 mesh. 70 mesh is also available at 60M (magnetically cleaned for fewer specks).



**Sand:**

**F-75 Ottawa\***  
A high purity silica sand from Illinois.



**Sand:**

**Oklahoma #90 Glass\***  
A very clean, high purity sand frequently used in glass batches.



**Sand:**

**China\***  
A sand and kaolin mix, approximately 70-90 mesh.



**Silica Imsil A-25 SiO2\***

A microcrystalline silica. A very finely divided or "micro" form of quartz physically bound together as loose agglomerates. More expensive than silica used in ceramic glazes, microcrystalline is considered the ultimate for use in glazes.



**Silica SiO2\***

Also known as flint. Most common source of silica in clay bodies and glazes. Increases thermal expansion in clays, decreases in glazes. Can also raise melting point in glaze. 200 and 325 mesh available.



**Silicone Carbide FFF 400 Grit SiC**

A reduction agent used in glazes. 60 mesh also available.

## Dry Raw Materials continued



**Soda Ash Na<sub>2</sub>CO<sub>3</sub>**  
Sodium carbonate. An active flux that also serves as an important function as a deflocculant in preparing liquid slip. It increases strength and workability and reduces shrinkage.



**Sodium Bicarbonate NaHCO<sub>3</sub>**  
Often used in Egyptian paste clays (baking soda).



**Sodium Nitrate NaNO<sub>3</sub>**  
A source of sodium used in porcelain enamels and glass formulas.



**Sodium Sulfate**  
In the form of salt cake, sodium sulfate is added to glass formulas as a source of sodium and to prevent scumming. Sodium sulfate glasses are harder, stronger and have a higher softening point than soda-lime glasses without the sulfate addition.



**Sub Spodumene LiAlSi<sub>2</sub>O<sub>6</sub>\***  
A source of lithia (a flux) that helps to develop a copper-blue tone glaze. Can replace feldspar. Reduces vitrification temperature and shrinkage rate in glazes and clays. Chemical grade from Australia.



**Strontium Carbonate SrCO<sub>3</sub>**  
Source of strontium oxide in glazes, useful as a flux. Occasionally used as a substitute for barium carbonate.

### Talc 3Mg.04Si02.H20\*

An important source of MgO flux for bodies and glazes. Frequently used in high proportions in low-temp clay bodies and casting slips. Also used to produce thermal shock resistant stoneware bodies where it acts as a low expansion flux reducing body expansion. Such bodies tend to have a narrow firing range.



**Westex(MB92)Talc:65/35**  
27% calcined Texas talc. Usually combined with other talcs and excellent in low fire pressing bodies where minimum shrinkage is desired. Assists in faster casting of low fire casting slips.



**Talc: Pioneer C-98**  
White-burning Texas talc, low calcium, grey in unfired state. High organic talc yielding good green strength and plasticity. A major component in low fire Cone 06-2 whiteware clay bodies.



**Talc: Sierralite 2Mg0.2Si02.Al2O3.H2O**  
Chlorite Montana talc with high alumina content and low fluxing oxides. Used in refractories where low thermal expansion and good thermal shock resistance is required. Adding 3-5% to many bodies can lower maturing point up to 2 cones.



**Tin Oxide SnO<sub>2</sub>**  
The most effective opacifier to produce even, opaque, glossy glazes. Normal use in a glaze is 5-10%. Dull matte glaze can result when used in excess.



**Titanium Dioxide TiO<sub>2</sub>\***  
Insoluble in water. Important opacifier. Often used in glaze to affect acid resistance, color and texture.



**Tri-Calcium Phosphate Ca<sub>3</sub>(P<sub>04</sub>)<sub>2</sub>**  
Similar to Bone Ash. Works well in high or low temperature glazes. White amorphous powder. Insoluble in cold water, decomposes in hot water. When used in most 8-15% glaze bases will produce a lava effect at Cone 06.



**Tri Sodium Phosphate Na<sub>3</sub>(P<sub>04</sub>)<sub>2</sub>**  
Added to glaze to produce a foamy matte surface.



**Umber, Burnt\***  
A hydrated ferric oxide with manganese dioxide. Used for brush decoration to produce a reddish-brown. Can be added to clay bodies to achieve a darker color.



**Volcanic Ash\***  
*See Pumice.*



**Vee Gum-C and Vee Gum T**  
*See Bentonites.*



**Wollastonite CaSiO<sub>3</sub>**  
A natural calcium silicate used to reduce shrinkage in clay bodies and glazes during firing. Can replace silica and whiting. Aids in fast firing of clay bodies.



**Zinc Oxide ZnO\***  
A useful, high temperature flux. It increases the maturing range of glazes and produces bright, glossy colors. Also may be used to give opacity to glazes.



**Whiting CaCO<sub>3</sub>\***  
*See Calcium Carbonate.*



## Dry Raw Materials continued



**Zircon, G Milled ZrSiO4\***  
An opacifier which controls texture and craze resistance in glazes.



**Zircopax Plus ZrSiO4\***  
A very effective zirconium glaze opacifier. Equivalent to Ultrox Extra. Replaced regular Zircopax and Superpax which are no longer available.

### LOOKING FOR MORE?

Only the most commonly used raw ingredients and clays are listed in this catalog.

If you do not find the one you are looking for, please inquire as we may have it in stock.

## Liquid Raw Materials

Available in pint, gallon, 5-gallon, and 55-gallon drums.

**Calcium Nitrate Solution Ca (N02)2 .4H2O** Sets the poise (reducing settling, running, etc.) in dipping and spraying glazes. Used as an oxidizing agent in zircon and titania opacified enamels.

**Cobalt Sulfate Solution Co S04 .7H2O** A liquefied cobalt compound often used to color white clays and glazes with a blue tint. Also used as a decolorizer in clay bodies.

**Darvan #7 (Dispersal)** A deflocculant that is user friendly because it has a wider deflocculation curve. Does not deteriorate molds as actively as does sodium silicate.

**Darvan #811** Similar in use and composition to Darvan #7, but recommended for deflocculating red slips and high iron slips.

**Glycerine C3H5(OH)3** Used to set and harden the surface of glaze and overglaze to facilitate faster glazing procedures.

**Gum Solution (CMC)** A liquefied binder, thickener, suspension and brushing medium made of an organic cellulose gum. Also used to increase plasticity of clay bodies.

**Axner Wax Resist** A435606 (pint) A435608 (gallon) Water-based wax emulsion used for glaze decorating. Glaze will be resisted where wax is applied. Dries quickly on bisque and in a consistency favorable to brush work.

**Dispersal 105** An alternative to sodium silicate or dispersal and ideal when deflocculation is affected by the water or the clays within the body. Particularly useful when thick slurries are desired.

**Pure Lube** A pure liquid, non-detergent, soap separator used as a release when casting plaster/gypsum into a plaster mold, and to prevent plaster/gypsum products from adhering to most porous surfaces. May be used full strength or diluted with water.

**Sodium Silicate Na20.SiO2** Liquid "N" brand is used as a major deflocculant in preparing slip. It reduces the amount of water needed, reducing shrinkage. A pure sodium silicate that must be mixed with water to a 50/50 solution before adding to most casting bodies.

# MASON<sup>®</sup>

## COLOR

SM6001	6001 ALPINE ROSE	SM6242	6242 BERMUDA
SM6020	6020 MANG AL PINK	SM6266	6266 PEACOCK
SM6021	6021 RED (OLD # K-5987)	SM6304	6304 VIOLET CHROME TIN
SM6026	6026 LOBSTER	SM6315	6315 ZIRCONIUM VANADIUM BLUE
SM6027	6027 TANGERINE	SM6371	6371 DARK TEAL
SM6028	6028 ORANGE	SM6385	6385 PANSY PURPLE
SM6030	6030 MANGO	SM6404	6404 VANADIUM YELLOW
SM6032	6032 CORAL	SM6450	6450 PRASEIODYMIUM YELLOW
SM6088	6088 DARK RED (OLD # K-5988)	SM6479	6479 SUNSHINE
SM6107	6107 DARK GOLDEN BROWN	SM6500	6500 SAGE GREY
SM6213	6213 HEMLOCK	SM6600	6600 BEST BLACK
SM6223	6223 IVY	SM6612	6612 ONYX BLACK
		SM6650	6650 COBALT FREE BLACK



6001  
Alpine Rose



6020  
Manganese  
Alumina Pink



6021  
Dark Red



6026  
Lobster



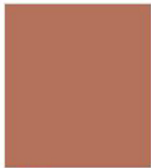
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Tangerine



6028  
Orange



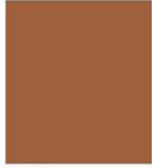
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Mango



6032  
Coral



6088  
Dark Red



6107  
Dark Golden



6213  
Hemlock



6223  
Ivy



6242  
Bermuda



6266  
Peacock



6304  
Violet Chrome Tin



6315  
Zirconium  
Vanadium



6371  
Dark Teal



6385  
Pansy Purple



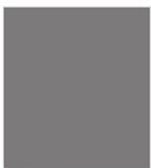
6404  
Vanadium Yellow



6450  
Praseodymium



6479  
Sunshine Stain



6500  
Sage



6600  
Best Black



6650  
Cobalt-Free



6612  
Onyx