

The Ceramics Department of R.T. Vanderbilt Company, Inc. markets many raw materials used extensively in the manufacture of ceramic products. This folder provides our customers with general information about the products we handle. Specialized literature with technical information is available describing the products listed and their uses.

## SILICATE MINERALS

### *Pyrophyllite*

**PYRAX® HS** pyrophyllite is primarily used in rapid-fire ceramic wall tile bodies. It lowers firing temperature; produces low moisture expansion bodies with good craze resistance; increases thermal shock resistance; and greatly increases firing strength in vitreous bodies. **PYRAX HS** promotes the development of mullite when substituted for an equivalent amount of feldspar or quartz. **PYRAX RG** refractory grade pyrophyllite is used in insulating firebrick, metal pouring refractories, alumina-silica monolithic refractories, ramming mixes, gunning mixes, castable mixes and kiln car refractories.

### *Wollastonite*

**VANSIL® W** wollastonite is a white nonmetallic, naturally-occurring mineral identified chemically as calcium metasilicate,  $\text{CaSiO}_3$ . It is used in ceramic wall and floor tile bodies, in glazes (matt and high gloss), and in frits for glazes and enamels. Additionally, wollastonite is used in ceramic pigments and body stains. In refractory and electrical applications, wollastonite is used in bonds for vitrified grinding wheels, in electrical insulators, and as an auxiliary flux. **VANSIL W** is supplied in several grades of fineness: **VANSIL W-10** (200 mesh), **VANSIL W-20** (325-mesh), **VANSIL W-30** (superfine 325-mesh), **VANSIL W-40** (400 mesh) and **VANSIL W-50** (1250 mesh). Also available as acicular grades are **VANSIL WG**, **HR 325**, **HR 1500** and **HR 2000**.

Established benefits include: Improved green strength, minimal gassing, improved melt control, improved thermal expansion control, improved impact resistance, reduced drying time, improved surface appearance in glazes, improved transparency in glazes, prevention of bubbles when formulating leadless glazes.

## KAOLIN CLAYS

**PEERLESS® 2** and **3** secondary kaolin clays are moderately coarse-grained, and impart more plasticity to a cast piece than similar clays produced by fractionization. **PEERLESS** kaolins have excellent casting and pressing qualities and are currently used in sanitaryware, artware, generalware, floor tile, electrical porcelain, chemical porcelain, fiberglass and special refractories. **DIXIE CLAY®** is an extremely fine kaolin with a surface area of about  $26 \text{ m}^2/\text{g}$  compared to **PEERLESS** with  $16 \text{ m}^2/\text{g}$ .

## SUSPENSION AGENTS/BINDERS

**VEEGUM®** is a complex colloidal magnesium aluminum silicate. Its aqueous dispersions are high viscosity thixotropic gels at low solids. **VEEGUM** is not subject to attack by microorganisms. **VEEGUM T** is used as a suspending agent for glazes, as a plasticizing agent for nonplastic formulations such as high alumina or zirconia bodies, and as a nonmigrating binder in extruded bodies. **VEEGUM CER** is a mixture of **VEEGUM T** and medium viscosity sodium carboxymethylcellulose that gives optimum surface hardening of unfired ceramic glazes for safer handling of the ware. It serves as a hardener, suspending agent and viscosity stabilizer in glazes.

**VEEGUM PRO™** is **VEEGUM** treated with amine to improve dispersability. **VEEGUM PRO** hydrates readily in hot or cold water to form high viscosity dispersions. It is recommended for use where a minimum amount of water is required and/or slow type mixers are available.

## ORGANIC DISPERSING AGENTS

### *Sodium Types*

**DARVAN® 811** dispersant is a low molecular weight, short chain polymer for use in vitreous and semivitreous bodies and in glazes. In comparison to the conventional soda ash-sodium silicate systems, this polyelectrolyte produces slips with a longer casting range, higher solids content, improved viscosity stability, fewer "soda" or "hard spots", and significantly increased mold life.

**DARVAN 7-N** is a high molecular weight, long chain polymer that has been used successfully as a general purpose dispersing agent for both ceramics bodies and glazes. This polyelectrolyte has the same advantages as **DARVAN 811**. Slips prepared with **DARVAN 7-N** show little tendency to thicken on standing.

Depending on the type of body and preparation, either the long chain polymer, **DARVAN 7-N**, or the short chain polymer, **DARVAN 811** will be more advantageous. **DARVAN 7N-S** and **DARVAN 811-D** offer dry powder versions for use in low moisture applications.

### *Ammonium Types*

**DARVAN 821A** and **DARVAN C-N** satisfy the need for dispersants in electronic and specialty ceramic products.

**DARVAN 821A** is a low molecular weight short chain polymer, with very low ash content. It has recently been successfully employed where prolonged ball milling or high shear mixing is necessary and where electrical properties are of prime concern.

**DARVAN C-N** is the high molecular weight, long chain polymer that has been used successfully for many years in electronic and specialty ceramic products.

Both **DARVAN C-N** and **DARVAN 821** should be used in dispersing alumina, electronic and specialty ceramic products.

## BACTERICIDES

**VANCIDE®** fungicide is the trade name for R.T. Vanderbilt Company's line of bactericides. In ceramics, **VANCIDE** is used to prevent glazes and slips from deteriorating due to bacteria and fungi. **VANCIDE TH**, a liquid industrial preservative, is easily added to water suspensions such as ceramic glazes and slips. Other **VANCIDE** products are available to suit specific needs.

## CARBON BLACKS

Carbon blacks are available. Please contact your Technical Sales Representative for more information.

## **XANTHAN GUM THICKENER/SUSPENDING AGENT**

Xanthan Gum is a versatile polysaccharide thickener and suspension agent produced by the fermentation and extraction of the naturally-occurring plant bacteria *Xanthomonas campestris*.

**VANZAN®** Xanthan Gum - Industrial grade  
**VANZAN® D** - Rapid dispersing industrial grade

Please contact us for further information on the Vanderbilt products described in this folder. Samples and Technical Data Sheets are available on request.

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Ceramics Department  
of  
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