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# VANDERBILT

## Minerals Technical Data

### DARVAN<sup>®</sup> 7-N Dispersing Agent

Sodium Polymethacrylate  
for Ceramic Bodies and Glazes

**DARVAN 7-N**, is a clear to slightly opalescent solution of sodium polymethacrylate. It shows very little tendency to foam.

#### PHYSICAL PROPERTIES

Molecular Weight:	10,000 to 16,000
Total Active Solids:	25.0 ± 2.0%
Density at 25°C:	1.16 ± 0.02 Mg/m <sup>3</sup>
Weight per gallon:	9.5 to 9.8 lbs
pH:	9.5 to 11.5
Viscosity at 25°C:	75 cps maximum
Solubility:	Very soluble in water systems.
Stability:	Stable in the presence of acids and alkalies over a wide pH range.
Storage:	Freezes at -5°C. Protect from freezing. Partial freezing does not affect the product's dispersing properties.

#### APPLICATIONS

**DARVAN 7-N** is recommended for use in the preparation of casting slips made from whiteware and refractory compositions. It is also used in glazes for rheological stability.

**DARVAN 7-N** produces slips with a wide casting range. Furthermore, the casting rate is not decreased to a marked degree, even though the slip is near the minimum viscosity point.

**DARVAN 7-N** produces slips that show little tendency to thicken on standing, or to become thixotropic. Ware cast from these slips is very plastic and easy to "scrap".

#### DARVAN 7-N in Whiteware Bodies

Most whiteware bodies are readily dispersed by the addition of 0.2 to 1% of **DARVAN 7-N**, based on dry body weight.

During the casting process, very little **DARVAN 7-N** is absorbed by the molds, and, under most factory conditions, a good casting slip can be made from 100% scrap just by adding water to give the desired fluidity.

**DARVAN 7-N** gives plaster molds a longer life than does the use of sodium silicate and soda ash.

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Both drain and solid castware made from slips containing **DARVAN® 7-N** Dispersing Agent can be left in the molds for long periods of time without cracking. Hobbyware consisting of difficult shapes is now made successfully on a commercial scale by leaving the ware in the molds for 6 to 24 hours. If the ware is to be left in the mold for a long time, the drain hole in the mold must be covered or the mold inverted onto a flat surface, in order to prevent surface drying around the drain hole.

A long set in the molds produces ware that is very easy to handle, and decreases the tendency of large pieces, e.g. vases, planters or sanitaryware, to warp or distort while drying.

Ware made from slips containing **DARVAN 7-N** can also be removed from the molds in the usual time of one to two hours, with the exception of heavy types of solid casts.

### **DARVAN 7-N for Glaze Dispersion**

**DARVAN 7-N** provides sprayed glazes with outstanding viscosity stability.

### **DARVAN 7-N in Ceramic Compositions**

**DARVAN 7-N** can be used where sodium oxide is not detrimental:

- Casting of Barium Titanate
- Casting of Zirconium Oxide
- Casting of Aluminum Oxide

### **DARVAN 7-N as a Grinding Aid**

**DARVAN 7-N** has been tested in various applications as a grinding aid. Depending on the application, 0.005% to 0.1% has been reported to help dry grinding.

### **DARVAN 7-N as a Binder for Spray-Dried Bodies**

**DARVAN 7-N** can be used as a binder in addition to its dispersing properties, at levels of about 2%.

### **DARVAN 7-N in Wastewater Treatment**

**DARVAN 7-N**, either alone or in combination with flocculants, has proven successful in removing solids during wastewater treatment.

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