



Distributed in the Interest  
of Product Development

# VANDERBILT

## *Technical Data*

### **DARVAN<sup>®</sup> 811**

#### **Organic Sodium Dispersing Agent for Ceramic Bodies and Glazes**

**R.T. Vanderbilt Company, Inc.**  
**30 Winfield Street, P.O. Box 5150, Norwalk, CT 06856-5150**  
**Telephone: (203) 853-1400**  
**Fax: (203) 853-1452, Web Site: [www.rtvanderbilt.com](http://www.rtvanderbilt.com)**

Before using, read, understand and comply with the information and precautions in the Material Safety Data Sheets, label and other product literature. The information presented herein, while not guaranteed, was prepared by technical personnel and, to the best of our knowledge and belief, is true and accurate as of the date hereof. No warranty, representation or guarantee, express or implied, is made regarding accuracy, performance, stability, reliability or use. This information is not intended to be all-inclusive, because the manner and conditions of use, handling, storage and other factors may involve other or additional safety or performance considerations. The user is responsible for determining the suitability of any material for a specific purpose and for adopting such safety precautions as may be required. R. T. Vanderbilt Company does not warrant the results to be obtained in using any material, and disclaims all liability with respect to the use, handling or further processing of any such material. No suggestion for use is intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patent or to violate any federal, state or local law or regulation.

Ceramics Department

## **DARVAN® 811**

Organic Sodium Dispersing Agent  
for Ceramic Bodies and Glazes

**DARVAN 811** is a sodium polyacrylate. In appearance it is a light amber liquid.

### **PHYSICAL PROPERTIES**

Molecular Weight:	3500
Total Active Solids:	43%
Density at 25°C:	1.30 Mg/m <sup>3</sup>
Weight Per Gallon:	10.6 to 10.9 lb.
pH at 25°C:	7.0
Viscosity:	180 cps
Solubility:	Very soluble in water systems.
Stability:	Stable in the presence of acids and alkalis over a wide pH range.
Storage:	Product should be stored above 10°C (50°F). Partial freezing does not affect the product's dispersing properties.

### **APPLICATIONS**

**DARVAN 811** is used successfully in vitreous and semivitreous bodies, and in glazes. A slip deflocculated with **DARVAN 811** provides the following advantages over the conventional soda-ash, sodium silicate system used to disperse ceramic bodies:

- Longer casting range.
- Higher solids content.
- Controlled thixotropy.
- Improved viscosity stability.
- Does not block the pores of molds and significantly increases the life of plaster of paris molds.
- Reduces hard spots", "yellow spots", or "soda spots".
- No calcium silicate scum and consequently less glaze rejection.

**DARVAN 811**'s compatibility with other dispersing agents should be considered. A study conducted by Vanderbilt's Ceramics Laboratory on sanitaryware bodies demonstrated that **DARVAN 811** was most effective when used without primary dispersing agents.

over

## COMPATIBILITY OF DARVAN 811 WITH OTHER DISPERSANTS

<u>CPS 1420</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
			25.8%	F-4 feldspar			
			21.2%	325m silica			
			16.0%	O.M. #4 ball clay			
			11.6%	Tenn. #5 ball clay			
			25.4%	<b>PEERLESS® #2 clay</b>			
			100.0%	Total			
			38.8%	Controlled water*			
Soda Ash	0.05%	0.05%	---	---	---	---	---
Sod. Sil.	0.168%	0.10%	---	---	---	---	0.10%
<b>DARVAN 811</b>	---	0.05%	0.09%	0.021%	0.09%	0.085%	0.089%
TSP	---	---	---	0.05%	---	---	---
DTPA**	---	---	---	---	0.10%	---	---
NaOH	---	---	---	---	---	0.025%	---
Viscosity after preparation (cps.)							
10 rpm	12,440	11,980	21,400	10,700	19,020	20,960	20,080
Viscosity after standing overnight							
10 rpm	2,600	4,500	7,310	7,160	8,080	9,830	20,080
Adjusted	---	---	0.009%	0.008%	0.014%	0.009%	---
10 rpm	2,600	4,500	2,990	2,510	5,000	4,150	5,340
Viscosity after standing for two nights (total)							
10 rpm	1,520	2,900	3,190	1,830	5,450	3,220	5,140
Viscosity after standing for three nights (total)							
10 rpm	1,090	2,010	2,340	1,270	3,740	2,300	3,290
Viscosity after standing for 11 nights (total)							
10 rpm	1,060	1,030	1,050	940	1,340	1,260	1,420
20 rpm	925	875	830	835	1,035	1,020	1,090
50 rpm	704	628	580	636	702	696	726
100 rpm	584	534	493	566	567	559	569
10 at 3 minutes	2,040	1,930	1,740	2,000	2,060	2,080	2,190
Casting Characteristics							
Outflow:	good	good	good	good	good	good	good
Firmness:	slightly hard	slightly hard	slightly hard	slightly hard	good	good	good
Mold Release:	good	good	good	good	good	good	good
Casting Rate:	88.1	87.2	91.7	89.7	89.8	89.0	95.7
% Water Ret.:	21.3	21.8	21.8	21.7	22.0	21.7	22.6

\*Water controlled to have a specific resistance of 13,000 Ohms

\*\*((Carboxymethylimino)-bis(ethylenedinitrilo)-tetraacetic acid pentasodium salt.

DARVAN and PEERLESS are registered trademarks of R.T. Vanderbilt Company, Inc.

**For additional information regarding our  
high quality minerals and chemicals,  
please visit our website:**

**[www.rtvanderbilt.com](http://www.rtvanderbilt.com)**

- Technical data sheets
- MSDS information
- Sample requests
- Specifications
- Product brochures
- Articles
- Presentations
- Reports