



OROTAN™ 850 Dispersant
OROTAN™ 851 Dispersant

Polyacid Pigment Dispersants For Latex Paints

Regional Product Availability

- Latin America

Description

OROTAN™ 850 Dispersant and OROTAN™ 851 Dispersant are polyacid pigment dispersants. They are versatile, low-cost, low-foaming dispersants which offer excellent performance in a wide range of latex paint formulations.

OROTAN 850 Dispersant is ammonia free ⁽¹⁾ and is supplied at 30% solids. OROTAN 851 Dispersant, also supplied at 30% solids, is both ammonia-free ⁽¹⁾ and free of added formaldehyde or formaldehyde generators ⁽²⁾.

They are recommended for flat through semi-gloss acrylic, styrene/acrylic, and vinyl acrylic formulations. In addition to good efficiency, these polyacid dispersants offer excellent stability in formulations containing zinc oxide.

OROTAN 850 Dispersant and OROTAN 851 Dispersant are highly compatible with anionic HASE associative rheology modifiers. They offer excellent performance for viscosity stability and color acceptance with ACRY SOL™ Designed Rheology™ products.

Key Features

- Low cost / high performance.
- Broad formulating range.
- Rheology modifier compatibility.
- Excellent color compatibility.
- Excellent viscosity stability.
- Low foam.
- Offers formulation stability in the presence of zinc oxide pigments.

Benefits

- Offers Lower formulated cost.
- Wide versatility. Can be used in flats through high-gloss formulations.
- Compatibility with anionic HASE type rheology modifiers.
- Excellent color acceptance with high reproducibility.
- Excellent heat-age and shelf stability.
- Easy to process and handle.
- Excellent heat-age and shelf stability.

(1) Manufactured without the use of aqueous ammonia.

(2) Formaldehyde is a ubiquitous material in our environment. Currently there is no accepted regulatory or industry definition of "Formaldehyde-Free." Therefore, we purposely refrain from using the term "Formaldehyde-Free." However, for OROTAN™ 851 Dispersant, we do not intentionally add Formaldehyde or Formaldehyde generators.



Typical Properties

(These properties are typical but do not constitute specifications).

Property	Typical Values
Appearance	Clear / Hazy, Yellow Liquid
Solids, by weight, %	30
Density (g/ml), wet	1.2
pH	9.7
Viscosity (Brookfield LV #2, 60 rpm, 25°C), cps	< 325
Chemical type	Anionic polyelectrolyte

Dispersing Efficiency

OROTAN™ 850 / 851 Dispersants should be tested at 0.5% to 1.0% active ingredient based on total pigment weight. It is important to determine the proper level for the finished paint formulation. If a low level is used, the dispersion may be incomplete providing an inadequate grind that will not have the required gloss, hiding, or stability. High levels of dispersant may lead to increased water sensitivity.

Reactive Pigment Stability

Table 1 compares the excellent stabilizing efficiency of OROTAN™ 850 Dispersant to that of two general-purpose dispersants in zinc-oxide containing exterior flat formulations. OROTAN 850 Dispersant offers excellent reactive pigment stability with a variety of binders, while the other dispersants fail the severe heat stability test across the board.

Heat stability and resulting adhesion performance of an exterior semi-gloss formulation are shown in Table 2. Although the competitive dispersants pass the heat stability test along with OROTAN 850 Dispersant, performance differences between the dispersants surface in the adhesion test results. Only the paint containing OROTAN 850 Dispersant tests blister-free; the other dispersant systems show severe blistering and loss of adhesion over acrylic chalk.

Table 1

Comparison of Dispersant Stabilizing Efficiency in Exterior Flat Formulations (45 PVC/36 VS) Containing Zinc Oxide

	28 Day Heat Stability Test	
	PRIMAL™ AC-264 Acrylic Emulsion	PRIMAL™ Multilobe 200 Emulsion
OROTAN™ 850 Dispersant	P 28	P 28
Colloid 226	F 28	F 14
Nopcosperse 44	F 28	F 14
P = Pass; F = Fail; Number of days at Pass / Fail point.		



Table 2

Comparison of Heat Stability and Early Blister Resistance in an Exterior Semi-gloss Formulation (22.5 PVC/35 VS) Containing Zinc Oxide

	28 Day Heat Stability Test ⁽¹⁾	Early Blister Resistance Over Latex Chalk ⁽²⁾
OROTAN™ 850 Dispersant	P 28	10
Colloid 226	P 28	2 D
Nopcosperse 44	P 28	4 D
Daxad 30	P 28	2 D
(1) Heat Aging up to 28 days at 60 °C		
(2) The early blister resistance test involves applying two coats of the test paint over a chalky latex board with a five-hour room temperature dry between coats. The painted board is dried overnight in a constant temperature room. The next day, the board is placed in a fog box and rated for blistering after five hours of exposure as follows: Blister size = ASTM scale of 1 (very big) to 10 (none) Blister Density (#1 unit area) = Few (F), Moderate (M), Moderate/Dense (MD), and Dense (D).		

**Handling
Precautions**

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

Storage

Store products in tightly closed original containers at temperatures recommended on the product label.

Disposal

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Coating Materials Technical Representative for more information.

**Chemical
Registration**

Many countries require the registration of chemicals, either imported or produced locally, prior to their commercial use. Violation of these regulations may lead to substantial penalties imposed upon the user, the importer or manufacturer, and/or cessation of supply. It is in your interests to ensure that all chemicals used by you are registered. Dow does not supply unregistered products unless permitted under limited sampling procedures as a precursor to registration.

**Note on
Product Line**

Product availability and grades vary throughout countries. Please contact your local Dow Coating Materials representative for further information and samples.

**Product
Stewardship**

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

For further information contact:
North America +800-783-825 (free)
Europa, India, Africa, Middle East:
+800-3-694-6367 (free)
America Latina: +55-11-5188-9000
Pacífico: +800-7776-7776 (free)

www.dow.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.



UNRESTRICTED – May be shared with anyone

©™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow
OROTAN™ 850 / 851 Dispersants / Dow Coating Materials

883-00802-01-1220 DOW
12/2020, Rev.1