OROTAN™ Kuai Yi™ Dispersant

Waterborne Pigment Dispersant

Regional Product Availability

- Asia-Pacific

Description

OROTAN™ Kuai Yi™ Dispersant is a highly effective polycarboxylic acid dispersant supplied at 45% solids in the sodium form. It is suggested for use in waterborne paint and coatings formulations where it offers a wide range of performance and formulation benefits.

OROTAN Kuai Yi Dispersant is highly compatible with anionic HASE and ACRYSOL™ DR Rheology Modifiers, offering excellent heat age and viscosity stability. It is very low foaming and is very efficient in dispersing mineral slurries.

OROTAN Kuai Yi Dispersant facilitates the formulation of a wide range of coatings, including flat primers, low VOC paints, interior and exterior flat and semi-gloss paints. Use levels are in the range of 0.2% to 0.8% based on solid dispersant to solid pigment plus extenders.

Key Features

- Low mill-base viscosity for efficient dispersion.
- Low foaming in mill-base.
- An excellent choice for flat to semi-gloss paints and other coating formulations.
- Highly compatible with anionic HASE, ASE, and DR-type rheology modifiers.
- Excellent color acceptance with high reproducibility.
- Excellent heat-age and shelf stability.
- Low odor.
- Cost effective and versatile dispersant for a wide range of paint formulations.

Typical Properties

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

Property	Typical Values
Appearance	Clear, amber liquid
Solids, by weight, %	45.0
Density, wet, (g/ml)	1.30
pH	7.0
Viscosity (Brookfield LV #2, 12 rpm, 25 °C), cps	< 1400
Chemical Type	Sodium salt of polyacid

Formulating Guidelines

Use Levels for OROTAN™ Kuai Yi™ Dispersant has been designed to efficiently disperse and stabilize waterborne paints containing high level calcium carbonate and Kaolin clay extenders. We recommend that the level of use for OROTAN Kuai Yi Dispersant be determined for each formulation using Dispersant Demand test methods as detailed below.

Dispersant Demand Method

1. Weigh out 500g of water into a mill-base container.
2. Place under the high speed disperser and begin stirring at the lowest speed.
3. Add pigment to the water until a high viscosity paste is achieved, then record the weight of the pigment added.
4. Transfer approximately 250ml of pigment slurry to a 300ml plastic jar, and record the weight.
5. Measure the viscosity of the pigment slurry using the Brookfield viscometer at 12rpm.
6. Add 0.05% w/w (based on pigment solids) OROTAN™ Kuai Yi™ Dispersant, record the exact weight, high speed disperse, to re-measure the viscosity.
7. Repeat step 6, until the minimum viscosity point is reached, then plot the viscosity versus the percentage dispersant on graph paper.
8. The optimum dispersant level is calculated as 1.5x the dispersant level at the minimum point.

Heat Age Storage Stability

Once the optimum dispersant level has been determined using the method described above, it is essential to confirm that the chosen level provides good grind rheology and adequate stability in the actual paint formulation. The Heat Aged Stability Test is used by Dow Coating Materials to give an indication of long-term storage stability.

A 250ml sample of the paint is placed in an oven set at 60°C for 10 days. After this time, the heat aged sample is removed from the oven, allowed to cool to 25°C and then evaluated for changes in viscosity, pH, appearance, the occurrence of syneresis (the separation of a clear watery layer at the top of the paint) and/or pigment settling (the collection of soft packed or hard packed pigment at the bottom of the paint). A paint, with good storage stability, should not show any significant changes in any of these properties.

In addition, Dow Coating Materials also recommends that other properties influenced by dispersant type and/or level should be evaluated prior to deciding upon a dispersant level. Such properties may include; gloss development, colour development (tinting strength), colour acceptance (rub up), water resistance and scrub resistance. Test methods for the evaluation of these methods are available from your Dow Coating Materials representative if required.

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 within the Asia-Pacific 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 Asia-Pacific Product Line

Product availability and grades vary throughout the countries in Asia-Pacific. 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.

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