Technical Data

ACUMER™ 9420

High-Performance Dispersant for Mineral Slurries

Product Description

ACUMER™ 9420 high-performance mining polymer is efficient to stabilize mineral slurries and to minimize the viscosity to low level at the time of initial formulation and to maintain a low viscosity during storage. It exhibits superiority for the lowest viscosities in high solids mineral slurries, even under the most extreme conditions (such as under heat conditions).

Physical Properties

Property	Typical Value
Appearance	Clear, light amber solution[1]
Chemical nature	Polycarboxylate
Grade	Sodium salt
Average molecular weight (Mw)	3500
Total solids (%)	~42.5
pH as is (at 25°C)	~8
Bulk density (at 25°C)	~1.3
Brookfield viscosity (mPa.s/cps at 25°C)	~400

These properties do not constitute specifications

[1]A slight haze may appear; this does not affect the intrinsic properties of the product or its performance.

Dosage

Kaolin	
Hydrated, calcined, delaminated	
70-75% slurries	0.2-0.5% w/w dry
Calcium Carbonate	
Coarse ground	
71-76% solids, 60% <2 micron	0.2-1.0% w/w
Fine ground	
71-78% solids, 90% <2 micron	0.4-1.2% w/w

For fine ground calcium carbonate (FGCC), typically a fully neutralized product (ACUMER 9400) is used in conjunction with a partially neutralized one (ACUMER 9410 or ACUMER 9460).

Viscosity Brookfield RVT Results

Polymer % dry/dry	20 rpm	100 rpm	pH
		73.5 % solids	
0.105	3675	910	7.71
0.120	2325	680	7.55
0.130	1600	575	7.53
0.146	1525	535	7.64
0.161	1425	485	7.51
0.175	1525	510	7.71

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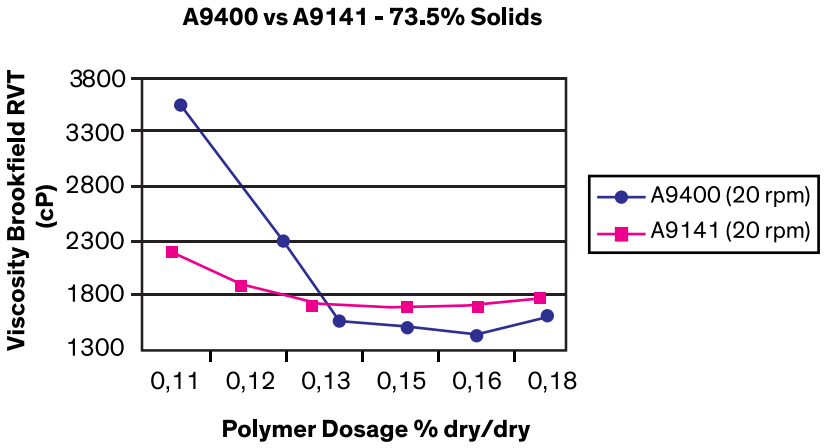
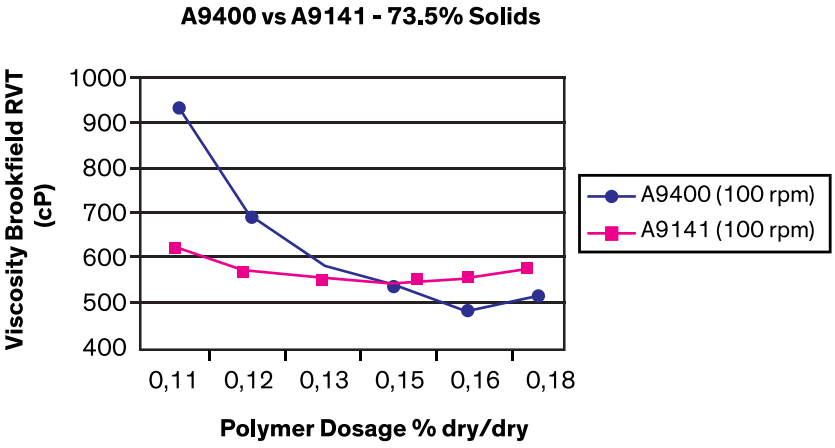
Dispersion Curves (viscosity vs. dosage)

73.5% slurries solids content. The viscosity curves below show that ACUMER™ 9400 has better performance than ACUMER 9141 at 73.5% solids with lower viscosity.

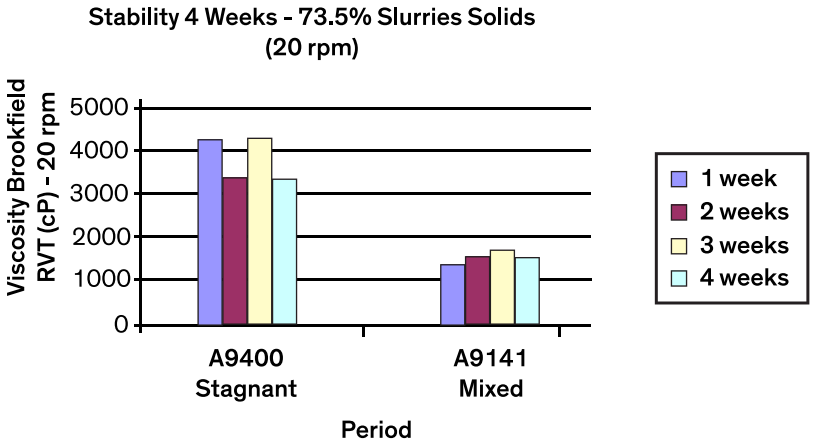
Kaolin Slurry

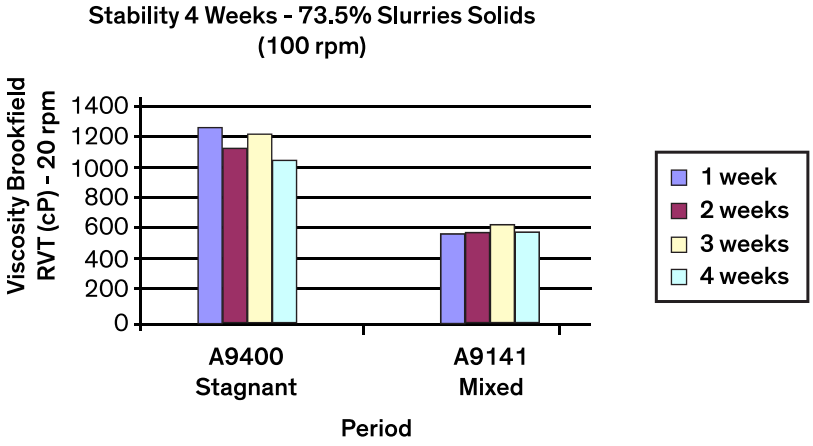




Stability Tests

(73.5% Slurries Solids Content, 0.16g dry polymer/g dry kaolin)
No phase separation nor sedimentation was observed in stagnant or mixed slurries after 4 weeks.
73.5% kaolin slurries with ACUMER™ 9400 showed good stability after 4 weeks.





Storage Recommendation

Freezing or long-term cold storage of ACUMER™ 9420 may cause some separation of the components. Although product performance is not impaired as long as the whole container is heated and well mixed, it is recommended to keep ACUMER 9420 out of freezing temperatures.

FDA Clearance

ACUMER™ 9420 dispersant polymer complies with the FDA Food Additives regulations indicated below, provided that the final formulation meets the limitations and other conditions prescribed by the regulation.

- 21 CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty food
- As a pigment dispersant in coatings at a level not to exceed 0.25% by weight of the pigment
- 21 CFR 176.180 Components of paper and paperboard in contact with dry food
- 21 CFR 176.110 Not to exceed 2% of paper or paperboard weight (based upon solids of product)

For specifics on any limitations, please contact your local Dow sales representative.

Product Stewardship

When considering the use of any Dow products in a particular application, you should review the latest Material Safety Data Sheets from Dow and ensure that they are intended for safe use. For Material Safety Data Sheets and other product safety information, contact Dow. Before handling any other products mentioned in the text, you should obtain available product safety information and take necessary steps to ensure safety of use.

No chemical should be used as or in a food, drug, medical device or cosmetic, or in a product or process in which it may contact a food, drug, medical device or cosmetic until the user has determined the suitability and legality of the use. Since government regulations and use conditions are subject to change, it is the user's responsibility to determine that this information is appropriate and suitable under current, applicable laws and regulations.

Dow requests that the customer read, understand, and comply with the information contained in this publication and the current Material Safety Data Sheet(s). The customer should furnish the information in this publication to its employees, contractors and customers, or any other users of the product(s), and request that they do the same.

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