



## ACUSOL™ 441 Dispersant Polymer

ACUSOL™ 441 Dispersant Polymer is a homopolymer of acrylic acid with an optimized molecular weight to be used in different applications such as: liquid fabric wash, laundry additives, industrial and institutional detergents.

### Features & Benefits

- Very good/excellent dispersant and encrustation inhibitor for inorganic scale (most notably for CaCO<sub>3</sub>) in laundry and I&I formulations
- Enhanced stability of hypochlorite or peroxygen based bleaches (chelation of transition metals)

### Applications

- Powder laundry
- Automatic dishwashing powders, liquids/gels, tablets and unit dose
- Industrial and institutional laundry and warewash
- Industrial and institutional CIP, bottle washing, metal cleaning

### Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Unit	Result
Appearance		Clear/hazy, colorless to yellow liquid
Molecular weight	g/mole	3,500
Total solids	%	51
pH		3.0–3.5
Charge		Anionic
Viscosity <sup>1</sup>	cP	< 2000

1. Viscosity Brookfield (mPa.s), LV, Spindle #2, 12 rpm, 25°C

### Performance Properties

These are typical properties, not to be construed as specifications.

Properties	Specific Action	Rating
Crystal growth inhibition	Calcium carbonate	Very good
	Silicate salts	Average
	Calcium polyphosphate/polyphosphonate	Average
	Sulfate salts	Very good

## Performance Properties (Cont.)

Properties	Specific Action	Rating
Dispersion of insoluble salts and particles	Calcium carbonate	Very good
	Calcium polyphosphate/polyphosphonate	Average
	Organic salts	Good
	Lime soap and proteinaceous food soils	Not recommended
	Zeolite	Good
Hypochlorite/peroxygen (bleach stability of the polymer)		Excellent
Processing aid for spray dried powders and agglomerates		Very good
Bleach stabilizers	Chelation of transition metal ions	Excellent

### Dose Rate

To obtain an optimal effectiveness this polymer should be used at levels between 5 and 225 ppm in the automatic dishwasher wash baths (household) and 20 to 200 ppm for industrial purposes. This will generally correspond to around 0.5%–5% (as solid) in detergent formulations for household applications and around 2%–10% (as solids) in detergent formulations in industrial and institutional applications.

ACUSOL™ 441 Dispersant Polymer can be advantageously combined with other polymers, such as, ACUSOL™ 445 Dispersant Polymer product family, ACUSOL™ 420N Dispersant Polymer, ACUSOL™ 425N Dispersant Polymer, ACUSOL™ 460N Dispersant Polymer, ACUSOL™ 573 Dispersant Polymer and/or ACUSOL™ 588 Dispersant product family for optimal performance.

### Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

### Usable Life and Storage

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

### Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

### Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, [dow.com](http://dow.com) or consult your local Dow representative.

## **Disposal Considerations**

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 Technical Representative for more information.

## **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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