



ACUSOL™ HB-1

Detergent Polymer

Introduction

Dow manufactures a wide range of polymers for the cleaning industry. Dow's research effort is application focused. Our background allows us to screen many different combinations of monomers, molecular weight and processes in search of the polymer that will offer the maximum benefit to our customers.

General Application

ACUSOL™ HB-1 detergent polymer is to be used in powder and liquid laundry detergent, laundry additives, industrial and institutional detergents.

Recommended Applications

- Laundry Detergent—Powder, Liquid, Bar and other forms
- Industrial and Institutional Detergent
- Auto-Dish Detergent

Typical Properties

ACUSOL HB-1	Typical	Range	Units
Appearance	Clear, Colorless to Amber	Pass	-
Total Solids	35.0	34-36	%
pH	7.5X	6.5-8.5	-

This does not constitute a product specification.

For product specifications, please contact Customer Information Group, CIG, of The Dow Chemical Company.

Chemistry and Mode of Action

ACUSOL HB-1 is a homopolymer of acrylic acid with a selected molecular weight of approximately 4500 daltons in order to optimize the following properties:

- Anti-precipitation: ACUSOL HB-1 will increase the solubility of precipitating salts by the threshold effect. This allows for a reduction in the wash bath precipitation of inorganic salts (carbonates, phosphates, sulphates of Ca and Mg).
- Crystal distortion: this polymer gets entrapped into crystal lattices, preventing their growth and facilitating their breakage. This minimizes the adherence of salts on surfaces and facilitates their elimination by rinsing.
- Dispersing properties: this polymer is a good dispersant for soils and will help to prevent their redeposition on surfaces (in particular glass and dish wares).
- Processing aids: its polymeric and chemical nature creates binding properties, which can be useful in several detergent manufacturing processes, especially tableting. It also offers benefits in crutcher viscosity in the detergent slurry.

Benefits

By using ACUSOL™ HB-1 detergent polymer, detergent manufacturers will enjoy the following advantages:

- Inhibition of crystal growth, thus preventing precipitation of carbonates phosphates or silicates.
- Dispersion of precipitates in the cleaning bath to avoid settling and scaling on surfaces and fibers.
- Improvement of filming maintenance by soil dispersion—minimizing organic components deposition on glass and dish wares.
- Increase of bleach stability, especially in chlorinated formulations by binding heavy metals that destabilize chlorine species through catalytic reactions.
- Use in medium alkaline to very alkaline formulations, thanks to the high solubility of ACUSOL HB-1 in caustic products. Caustics should be added slowly to a water premix containing polymer to avoid high pH gradients.

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 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.

Contact:

North America: 1-800-447-4369
Latin America: (+55)-11-5188-9000
Europe: (+800)-3-694-6367
(Toll) +31-11567-2626
Asia-Pacific: (+800)-7776-7776
(Toll) +60-3-7965-5392

<http://www.dow.com>

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