



## ACUSOL™ MILLENNIUM ER

A new HASE Rheology modifier delivering suspension properties

### Features & Benefits

- Excellent at suspending actives and visual cues
- Very efficient at viscosity building
- Compatible in high surfactant systems (up to 30% for high duty liquid laundry formulations)
- Stable in acidic media
- Soluble in glycols and surfactants
- Allows formulators to create multi-functional detergents
- Effective over a broad pH range, from 4 to 9
- Exhibits clear formulations
- Efficient suspension aids of actives (beads, air bubbles, fragrance, oils)
- Ease of handling

### Applications

- Light duty liquid laundry
- High duty liquid laundry (up to 30% surfactants)
- Hand dish wash formulations

### Typical Properties

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

Property	Unit	Result
Recommended use levels	%	3.0–9.5 as is
Ionic nature		Anionic
Appearance		White liquid emulsion
Solids	%	30–32
pH	%	3.5–4.5

### Mechanism of Action

ACUSOL™ MILLENNIUM ER thickens by swelling on neutralization. Due to its hydrophobe, it can also create structure with surfactants and other hydrophobe in the matrix. Suspension performance of ACUSOL™ MILLENNIUM ER will be dependent on the surfactant total concentration and the types of surfactants used. Adjustment of use level is required to adapt to these formulation conditions. ACUSOL™ MILLENNIUM ER has demonstrated versatility with a variety of surfactant systems and thus opens up new opportunities for formulators.

**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 products in tightly closed original containers 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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