ACUSOL™ 588
Polyphosphate and Silicate Scale Inhibitor for Laundry and Automatic Dishwashing Detergents

Description

ACUSOL 588 is a unique copolymer specifically designed for phosphate and reduced/no phosphate compositions containing formulations in powder, liquid, or tablet form. Its chemical structure and molecular weight are optimized to provide calcium polyphosphate and magnesium silicate inhibition properties, resulting in reduced filming on glasses and dishes in automatic dishwashing.

Typical Properties
These properties are typical but do not constitute specifications.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Slightly viscous, golden colored solution copolymer</td>
</tr>
<tr>
<td>Chemical structure</td>
<td>Acrylic/Sulfonic</td>
</tr>
<tr>
<td>Nature</td>
<td>Anionic</td>
</tr>
<tr>
<td>Solids content (%)</td>
<td>36–38</td>
</tr>
<tr>
<td>pH</td>
<td>3.5–4.5</td>
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<tr>
<td>Molecular Weight</td>
<td>12,000</td>
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</tbody>
</table>

Use and Properties

ACUSOL 588 is a water-soluble copolymer supplied as the partially neutralized sodium salt in water.

This polymer is typically used in automatic dishwashing detergent formulations where it shows exceptional calcium polyphosphate dispersing properties. It will therefore contribute to the prevention of film formation on glasses and dishware, especially due to polyphosphate precipitation when under-built conditions are encountered.

ACUSOL 588 does not require any special use precautions.

Chemistry and Mode of Action

ACUSOL 588 is a copolymer of acrylic and sulphonic acids with a molecular weight around 12,000 in order to optimize the following features:

- Anti-precipitation: ACUSOL 588 will prevent precipitation of calcium polyphosphate and insoluble silicate salts in the wash bath due to absorption properties on seeds and growing particles. The controlled precipitation of these sparingly soluble salts will reduce the phenomenon of filming, which is due to deposition of precipitating builders on the various surfaces encountered in automatic dishwashing: stainless steel, ceramics, and glass.

- Dispersing properties: ACUSOL 588 is an excellent dispersant for calcium polyphosphate and magnesium silicate based scales. It will keep them dispersed in the wash bath and avoid their deposition and build-up that would cause filming on surfaces.

ACUSOL 588 can be combined with acrylic homopolymers such as ACUSOL 445 G, ACUSOL 445 NG, ACUSOL 420 NG, ACUSOL 425N or ACUSOL 441 in order to boost the filming inhibition performance due to specific calcium carbonate inhibition properties. This combination is particularly recommended for the all-in-one tablets, to alleviate the heavy precipitating conditions arising from higher calcium and magnesium levels in the wash bath.

Characteristics of the Product

- Effective dispersant for a wide choice of formulations
- Very good filming inhibition performance on glasses and dishes
Dose Rates

To obtain an optimal efficiency, ACUSOL 588 polymer should be used at levels between 50 and 500 ppm in the wash bath for household or industrial purposes.

This will correspond to 1-8% of ACUSOL 588 in the washing powders. ACUSOL 588 is suitable for P-containing detergents and can be advantageously combined with either ACUSOL 445G, ACUSOL 445NG, ACUSOL 420NG, ACUSOL 425N, or ACUSOL 441 depending on the carbonate level in the formulation.

Storage Recommendation

As ACUSOL 588 is sensitive to ambient water, it is recommended to keep open bags under appropriate storage conditions and avoid wet environments.

Material Safety Data Sheets

MSDS are available for all Rohm and Haas products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products.

We recommend that you obtain copies of the MSDS from your Rohm and Haas technical representative, or from the sales office nearest to you, before using our products in your facilities. We also suggest that you contact your suppliers of other materials recommended for use with our products for appropriate health and safety precautions before using them.

To obtain samples, technical assistance, a Material Safety Data Sheet (MSDS) or to have a technical representative call for an appointment, contact the nearest Rohm and Haas branch office.

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