Carbopol® Aqua 30 Polymer
A Versatile Liquid Rheology Modifier for Surfactant-Based Household and I&I Applications

Introduction
Carbopol® Aqua 30 polymer is a liquid rheology modifier designed to suspend, stabilize and thicken products containing surfactants and detergents. It provides numerous benefits including thickening and stabilizing of low pH systems in a cost-effective and easy-to-use product.

Carbopol Aqua 30 polymer is a cross-linked acrylic polymer dispersion with the following characteristics:

<table>
<thead>
<tr>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
</tr>
<tr>
<td><strong>Odor</strong></td>
</tr>
<tr>
<td><strong>Active Polymer</strong></td>
</tr>
<tr>
<td><strong>pH (as supplied)</strong></td>
</tr>
<tr>
<td><strong>Mucilage Viscosity</strong></td>
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</tbody>
</table>

**Benefits**
- Easy-to-use liquid form
- Excellent suspension and stabilization
- High yield value and enhanced vertical cling (even at low viscosity)
- Thickening and flow control
- Allows for creation of clear formulations
- pH flexibility
- Excellent compatibility with surfactants
- Salt thickening, “back-acid” thickening, post thickening
- Emulsion stabilization

**Applications**
- Car Wash Applications
- Hard Surface Cleaners
- High Surfactant Gel Applications
- Liquid Water Softeners
- Manual Dishwashing Liquids
- Emulsions

**Product Use**
Carbopol Aqua 30 polymer use level is dependent on desired characteristics, including yield value and viscosity, as well as other formulation ingredients. The following graphs show basic polymer properties in water:

Carbopol® Aqua 30 Polymer Viscosity vs. pH – As the polymer in water is neutralized, the system changes from a milky emulsion to a clear gel.

**Viscosity vs. pH**
1.0 wt.% Active Polymer in Water

Viscosity data obtained using Brookfield RVT at 20 rpm
Carbopol® Aqua 30 Polymer Viscosity / Yield Value vs. Wt% Polymer Actives in Water – The graph below shows that Carbopol Aqua 30 polymer has high suspending and stabilizing capabilities even at low viscosity.

**Order of Addition**

To ensure maximum benefit and efficiency from the polymer, we recommend the following order of addition:

1. Add Carbopol Aqua 30 polymer to the deionized water.
2. Add primary surfactants or detergents.
3. Neutralize to pH 6.5 - 7.0.
4. Add remaining surfactants.
5. Add other ingredients including fragrances, dyes and preservatives.
6. If desired, decrease pH. (This will increase efficiency; citric acid is suggested.)
7. If desired, add sodium chloride to further increase viscosity.

**Formulating Guidelines**

- The typical use level of Carbopol Aqua polymer in surfactant-based products is 5.0 wt% as supplied (1.5 wt% active polymer).
- Carbopol Aqua 30 polymer works best at an active surfactant level of 10 - 20 wt% though products can be formulated at surfactant active levels from 8 - 25 wt%.
- Clear systems are easily formulated at pH 6.2 - 6.7.
- Carbopol Aqua 30 polymer is stable in acidic systems containing hydrogen peroxide, pH 2.5 - 4.0.
- Carbopol Aqua 30 polymer enhances the appearance and visual stability of pearlizing ingredients in surfactant systems.

Carbopol® Aqua 30 Polymer: Effect of Salt on Viscosity – Carbopol Aqua 30 polymer is compatible with salt; low levels of sodium chloride (~0.5 wt%) increase viscosity when the polymer is formulated with certain surfactants.

**Handling and Storage**

**Packaging:** 55 gal (208 liter), 480 lb (217 kg) net weight drums.

**Shelf-Life:** 9 months.

**Storage Temperature:** 60-86°F (15-30°C). DO NOT FREEZE.

Consult the Carbopol Aqua 30 polymer MSDS for additional pertinent information.

**Additional Literature**

Please visit [www.lubrizol.com/homecare](http://www.lubrizol.com/homecare) for other Technical Data Sheets as well as Specifications, Formulations, Toxicology Studies and TSE-GMO Certificates.
# Carbopol® Aqua 30 Polymer

## General

**Appearance:** White-colored liquid, free of foreign materials  
**Odor:** Low characteristic odor

<table>
<thead>
<tr>
<th>PRODUCT SPECIFICATION</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
<th>TEST FREQUENCY</th>
<th>LUBRIZOL TEST PROCEDURE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Solids, as supplied (wt%)</td>
<td>28.5</td>
<td>31.5</td>
<td>Once / Lot</td>
<td>TP-745-C</td>
</tr>
<tr>
<td>pH, as supplied</td>
<td>2.2</td>
<td>3.8</td>
<td>Once / Lot</td>
<td>TP-92-B</td>
</tr>
<tr>
<td>Viscosity, as supplied, Diluted to min Total Solids, Brookfield LV, (mPa·s) (60 rpm @ 25°C)</td>
<td>2</td>
<td>25</td>
<td>Once / Lot</td>
<td>TP-94-D</td>
</tr>
<tr>
<td>Viscosity, 1.0 wt% TS Mucilage*, Brookfield RVT, (mPa·s) (20 rpm @ 25°C)</td>
<td>2,500</td>
<td>6,500</td>
<td>Once / Lot</td>
<td>TP-SAF-067</td>
</tr>
<tr>
<td>Salt Viscosity, 1.0 wt% TS Mucilage* with 0.2 wt% NaCl, Brookfield RVT, (mPa·s) (20 rpm @ 25°C)</td>
<td>400</td>
<td>1,200</td>
<td>Once / Lot</td>
<td>TP-SAF-067</td>
</tr>
<tr>
<td>Turbidity, 1.0 wt% TS Mucilage* (NTU)</td>
<td>0</td>
<td>50</td>
<td>Once / Lot</td>
<td>TP-SAF-067</td>
</tr>
</tbody>
</table>

*A mucilage is defined as a 1.0 wt% TS dispersion in water neutralized to pH 7.5 with NaOH.*

**NOTE:** Lubrizol Standard Test Procedures should be followed to insure reproducibility with Certificate of Analysis results.