CHARACTERISTICS
Rehydragel® adsorbent aluminum hydroxide gels have been used for many years as adjuvants in veterinary vaccines, and are growing in importance in the human biological field. These highly purified aluminum hydroxide gels provide high protein adsorption when used as matrices or carriers for veterinary antitoxins. Rehydragel adjuvants are based on crystalline aluminum oxyhydroxide, known minerallogically as boehmite. They are highly effective in vaccines when there is a need to bind negatively charged proteins. They have a positive charge at physiological pH (7.4) and a point of zero charge of 9 to 12. They are hydrated gels containing crystalline particles with a large surface area (about 525 m²/g). Their Al₂O₃ content ranges from 2% to 10%. The Rehydragel line include products with high Al₂O₃ concentration for economy, as well as highly specialized grades.

TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>Grade</th>
<th>CG</th>
<th>LV</th>
<th>HPA</th>
<th>HS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide (Al₂O₃), %</td>
<td>8.5 - 10.5</td>
<td>1.8 - 2.2</td>
<td>1.8 - 2.2</td>
<td>1.8 - 2.2</td>
</tr>
<tr>
<td>Protein Binding Capacity, mg BSA/mg Al₂O₃</td>
<td>1.0</td>
<td>1.5</td>
<td>2.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Point of Zero Charge</td>
<td>10.5</td>
<td>11.6</td>
<td>12.1</td>
<td>9.4</td>
</tr>
<tr>
<td>Sodium (Na), % max</td>
<td>—</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Chloride (Cl), % max</td>
<td>0.07*</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Sulfate (SO₄), %</td>
<td>0.03*</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Heavy metals (as Pb), ppm max</td>
<td>2.5*</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Arsenic (As), ppm max</td>
<td>0.4*</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>0.001% max</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Gel-like</td>
<td>1000 cps max</td>
<td>Thrixotropic**</td>
<td>1300 cps max</td>
</tr>
<tr>
<td>pH</td>
<td>7.0 - 8.0</td>
<td>5.8 - 6.8</td>
<td>5.5 - 6.5</td>
<td>6.0 - 8.0</td>
</tr>
<tr>
<td>Microbial Limits</td>
<td>&lt;100 colonies/g; no E. Coli, S. Aureus, or P. Aeruginosa</td>
<td>Sterile</td>
<td>Sterile</td>
<td>Sterile</td>
</tr>
</tbody>
</table>

*B: In 2% Al₂O₃ test suspension
**Thrixotropic gel fluidized completely under shear, e.g., when shaken or mixed.

PRODUCT MARKETS AND USES
- Bacterin vaccines for large animals
- Rabies vaccines for companion animals
- Poultry vaccines
- Human vaccines
- Blood separation applications
- Pharmaceutical gels for topical use

BENEFITS
- Excellent binding of acidic proteins
- Customized Al₂O₃ level, rheological properties, and point of zero charge
GRADES & SHIPPING CONTAINERS
Rehydragel® adjuvants are available in a broad array of packaging types and sizes from 1/2-liter glass bottles to 250-lb drums, depending on the grade. Typical packaging types are as follows:

- **Rehydragel® CG** 55 lb. net carboy (7 gal. sterile only) 500 mL. sterile glass container
- **Rehydragel® LV** 55 lb. net carboy (7 gal. sterile only) 500 mL. sterile glass container
- **Rehydragel® HPA** 55 lb. net carboy (7 gal. sterile only) 500 mL. sterile glass container
- **Rehydragel® HS** 55 lb. net carboy (7 gal. sterile only) 500 mL. sterile glass container

SHIPPING LOCATION
- Berkeley Heights, New Jersey USA

SHIPPING REGULATIONS
Not Regulated

STORAGE AND HANDLING
Rehydragel® adjuvants should be stored at or below room temperature. They should never be allowed to freeze, because this destroys their lattice structure and unique adsorbent properties.

SHELF LIFE
Although Rehydragel® adjuvants are exceptionally inert and can be stored indefinitely in their original containers, their stability and sterility should be reevaluated periodically. Timing for reevaluation varies from one year for Rehydragel® CG to two years for other Chemtrade adjuvants from the date on the Certificate of Analysis.

FEEDING METHODS
Rehydragel® adjuvants should be used with low-speed/low-shear pumps, e.g., self-priming diaphragm and peristaltic pumps.

SATISFACTORY MATERIALS OF CONSTRUCTION
Material of construction should be corrosion- and abrasion-resistant and easily sanitized. Suitable materials include 316L stainless steel, polypropylene, polyethylene, fluoro-polymer, fluoroelastomer and neoprene.

PRODUCT SAFETY INFORMATION
As with any chemical, Rehydragel® adjuvants require care in handling. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the Safety Data Sheets (SDS) for these products or you may contact Chemtrade at 416-496-5856.

In the event of an emergency with these products, call the 24 hour Emergency Number: US Only: (CHEMTREC) (800) 424-9300 Canada Only: (CANUTEC) (613) 996-6666

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