Aluminum Hydroxide Fluid Gel
Safety Data Sheet
According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada’s Hazardous Products Regulation, February 11, 2015
Revision Date: 09/25/18       Date of Issue: 05/01/15       Version: 2.0

SECTION 1: IDENTIFICATION

Product Identifier
Product Form: Mixture
Product Name: Aluminum Hydroxide Fluid Gel
Alternate Names: Rehydragel™ AB, Rehydragel™ HPA, Rehydragel™ HS, Rehydragel™ HS 1.3, Rehydragel™ HS 1.5, Rehydragel™ LV, Rehydragel™ LV-S, Rehydragel™ PM, Rehydragel™ SP

Intended Use of the Product
Pharmaceutical Ingredient. Vaccine adjuvant, protein separations. For professional use only.

Name, Address, and Telephone of the Responsible Party
Manufacturer
CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For MSDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number
Emergency Number: Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture
Classification (GHS-US)
Not classified

Label Elements
GHS-US Labeling  No labeling applicable

Other Hazards
Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US)  Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum hydroxide (Al(OH)₃)</td>
<td>(CAS No) 21645-51-2</td>
<td>1.45 - 3.4</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures
General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).
Inhalation: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin Contact: Remove contaminated clothing. Rinse affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists.
Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.
Ingestion: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell.

Most Important Symptoms and Effects Both Acute and Delayed
General: None expected under normal conditions of use.
Inhalation: May cause irritation to the respiratory tract.
Skin Contact: May cause skin irritation.
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Eye Contact: May cause eye irritation.
Ingestion: Ingestion is not likely to be harmful or have adverse effects. May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract.
Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed
If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media: None known.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.
Explosion Hazard: Product is not explosive.
Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.
Firefighting Instructions: Do not breathe fumes from fires or vapors from decomposition. Use water spray or fog for cooling exposed containers.
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.
Hazardous Combustion Products: None known.
Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures Not available

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container. Contact competent authorities after a spill.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.
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Specific End Use(s) Pharmaceutical Ingredient. Vaccine adjuvant, protein separations. For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters
For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure, but are not required. Product to be handled under strictly controlled conditions. Ensure all national/local regulations are observed.

Personal Protective Equipment: Not generally required. The use of personal protective equipment may be necessary as conditions warrant. Protective goggles. Gloves. Protective clothing.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>White, gelatinous precipitate</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>5.5 - 8</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative Vapor Density at 20 ºC</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Notavailable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.01 - 1.25</td>
</tr>
<tr>
<td>Solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Partition Coefficient: N-Octanol/Water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Mechanical Impact</td>
<td>Not expected to present an explosion hazard due to mechanical impact.</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Static Discharge</td>
<td>Not expected to present an explosion hazard due to static discharge.</td>
</tr>
</tbody>
</table>
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SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.
Chemical Stability: Stable under normal conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Incompatible materials.
Hazardous Decomposition Products: Hydrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Not classified
pH: 5.5 - 8
Serious Eye Damage/Irritation: Not classified
pH: 5.5 - 8
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not classified
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: May cause irritation to the respiratory tract.
Symptoms/Injuries After Skin Contact: May cause skin irritation.
Symptoms/Injuries After Eye Contact: May cause eye irritation.
Symptoms/Injuries After Ingestion: Ingestion is not likely to be harmful or have adverse effects. May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract.
Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

<table>
<thead>
<tr>
<th>Aluminum hydroxide (Al(OH)₃) (21645-51-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral Rat</td>
</tr>
<tr>
<td>&gt; 5000 mg/kg</td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Persistence and Degradability

<table>
<thead>
<tr>
<th>Aluminum Hydroxide Fluid Gel, Rehydragel™ AB, Rehydragel™ HPA, Rehydragel™ HS, Rehydragel™ HS 1.3, Rehydragel™ HS 1.5, Rehydragel™ LV, Rehydragel™ LV-S, Rehydragel™ PM, Rehydragel™ SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and Degradability</td>
</tr>
<tr>
<td>Not established.</td>
</tr>
</tbody>
</table>

Bioaccumulative Potential

<table>
<thead>
<tr>
<th>Aluminum Hydroxide Fluid Gel, Rehydragel™ AB, Rehydragel™ HPA, Rehydragel™ HS, Rehydragel™ HS 1.3, Rehydragel™ HS 1.5, Rehydragel™ LV, Rehydragel™ LV-S, Rehydragel™ PM, Rehydragel™ SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative Potential</td>
</tr>
<tr>
<td>Not established.</td>
</tr>
</tbody>
</table>

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.
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SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT  Not regulated for transport
14.2 In Accordance with IMDG  Not regulated for transport
14.3 In Accordance with IATA  Not regulated for transport
14.4 In Accordance with TDG  Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations
Aluminum hydroxide (Al(OH)_3) (21645-51-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State Regulations
Aluminum Hydroxide Fluid Gel, Rehydragel™ AB, Rehydragel™ HPA, Rehydragel™ HS, Rehydragel™ HS 1.3, Rehydragel™ HS 1.5, Rehydragel™ LV, Rehydragel™ LV-S, Rehydragel™ PM, Rehydragel™ SP
Neither this product, nor its chemical components, appear on an US state lists.

Canadian Regulations
Aluminum Hydroxide Fluid Gel, Rehydragel™ AB, Rehydragel™ HPA, Rehydragel™ HS, Rehydragel™ HS 1.3, Rehydragel™ HS 1.5, Rehydragel™ LV, Rehydragel™ LV-S, Rehydragel™ PM, Rehydragel™ SP
WHMIS Classification  Uncontrolled product according to WHMIS classification criteria
Aluminum hydroxide (Al(OH)_3) (21645-51-2)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification  Uncontrolled product according to WHMIS classification criteria
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date  : 09/25/18
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada’s Hazardous Products Regulations (HPR) SOR/2015-17..

GHS Full Text Phrases:  : Not applicable

Party Responsible for the Preparation of This Document
CHEMTRADE LOGISTICS INC.
(416) 496-5856

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA’S “Right to Know” (29 CFR 1910.1200) and Canada’s WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.