Ammonium Chloride 99%

SINGLE SALT BLENDS

Overview
A dry, 99% purity salt, ammonium chloride is used as weight material to increase density of completion fluids ranging from 8.4 lb/gal to 8.9 lb/gal. Ammonium chloride is an effective clay stabilizer and can be used to prevent formation damage after an acid treatment.

It is used to prevent the formation of insoluble fluorosilicates when hydrofluoric (HF) acid (mud acid or clay acid) is used.

Features and Benefits

- Inhibitive properties can prevent hydration and migration of swelling clays.
- Can be used to avoid scaling and precipitation problems in certain environments.
- Generally compatible with most oilfield elastomers.

Caution: Fluid additives, formation water and other contacting fluids should be screened for compatibility with the brine prior to use.

Application Information
Ammonium chloride can be added to fresh makeup water through the rig hopper while agitating until crystals dissolve. An endothermic reaction occurs during mixing, thus resulting in a decrease in fluid temperature.

Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Odorless, colorless crystals</td>
</tr>
<tr>
<td>pH</td>
<td>5 @ 10 wt%</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.53</td>
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<tr>
<td>Water Solubility</td>
<td>24% @ 45°F</td>
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</tbody>
</table>

Packaging Information

Bulk Liquid

Recommended Treatment
The recommended treatment concentration is as necessary for density adjustment. Consult a TETRA representative for specific recommendations.

Safety and Handling
Avoid skin and eye contact, inhalation or ingestion. For skin contact, wash with soap and large quantities of water. For eye contact, flush with large quantities of water. Use properly designed respirator if adequate ventilation is not available. Refer to the Safety Data Sheet for specific details.