



Drilling Fluids, Inc.

Commercial Chemical

SODA ASH

Description

SODA ASH is the common name for sodium carbonate (Na_2CO_3) used to precipitate soluble calcium in drilling fluids.

Uses

SODA ASH is very effective in removing soluble calcium from drilling fluids. The chemical reaction is as follows: $\text{NaCO}_3 + \text{CaOH} \rightarrow 2\text{NaOH} + \text{CaCO}_3$. As a pretreatment when Gypsum is anticipated SODA ASH may be added to spud mud. Treating cement contamination with SODA ASH is limited to high pH drilling fluids. In low pH drilling fluids, SODIUM BICARBONATE is recommended. Removing Calcium from makeup water requires the use of SODA ASH to form calcium carbonate. Reducing the pH will reverse this process.

SODA ASH can also be used to increase the density of workover and completion fluids to 10 ppg, and is acid soluble.

Benefits

SODA ASH is used to treat soluble calcium contamination in drilling fluids. Calcium ions will react with many anionic polymers (i.e., CMC, Polyacrylate, PHPA) and render them ineffective. The concentration of soluble calcium will determine the amount of SODA ASH required to treat the mud.

Treatment

To treat calcium out of makeup water, multiply the total hardness of the water (mg/l) by .0009 to find the ppb of SODA ASH to add. SODA ASH can be used for treating cement contamination. The solubility of SODA ASH is suppressed by high pH. Do not use SODA ASH to treat massive cement contamination. Over treatment with SODA ASH can result in carbonate contamination. SODA ASH is not effective for treating hardness from soluble magnesium. SODA ASH may be mixed through the chemical barrel or mud hopper. To avoid settling, the chemical barrel should have some agitation. A solution of SODA ASH should always be prepared by the addition of SODA ASH to the water. Adding water to SODA ASH will result in the formation of a solid cake, making dissolution more difficult. Do not mix CAUSTIC SODA and SODA ASH together. SODA ASH is commonly added slowly through the hopper.



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SODA ASH (continued)

Function

Calcium contamination in mud may cause undesirable increases in rheology, gel strengths, and filtration problems, as well as inhibit the viscosity and gel properties of dry bentonite when added to water. SODA ASH provides a source of carbonate ions (CO_3) to tie up free calcium as insoluble calcium carbonate.

Typical Physical Properties

Appearance:white, fine powder
Specific gravity:2.5
Solubility in water:33.2 maximum

Safe Handling Recommendations

Utilize normal precautions for employee protection when handling chemical products. Use of appropriate respirator, gloves, goggles, and apron is recommended for employee comfort and protection. See Material Safety Data Sheet (MSDS) for this product prior to use.

Packaging

SODA ASH is packaged in 50 pound multiwall bags.