

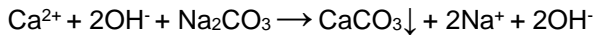
Soda Ash

Description

Soda Ash is the common name for sodium carbonate (Na_2CO_3) used to precipitate soluble calcium in drilling fluids. It is the water-soluble sodium salt of carbonic acid and is a white, anhydrous, powdered or granular material containing more than 99% sodium carbonate. Soda Ash is an alkali that has a high pH in concentrated solutions.

Applications

Soda Ash is very effective in removing soluble calcium from water based drilling fluids. It is normally added to the make-up water to avoid high content of soluble calcium ion and to raise pH. The chemical reaction is as follows:



It can be used as a pretreatment when gypsum or anhydrite is anticipated to be encountered while drilling. Treating cement contamination with Soda Ash is limited to high pH drilling fluids. In low pH drilling fluids, sodium bicarbonate is the best option. Soda Ash is also used as pH buffer in brines for drilling and completion operations.

Using Soda Ash will increase the performance of bentonite and polymer drilling fluids due to the fact of lowering calcium content.

Features and Benefits

- Treat soluble calcium contamination which can lead to undesirable increases in rheology, gel strengths and filtration.
- Provides a source of carbonate ions (CO_3) to tie up free calcium as insoluble calcium carbonate.
- Increase effectiveness of polymers
- Easily available and economic source of carbonate ion.

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Typical Properties

Appearance	Powder
Color	White
Specific Gravity	2.51
pH (1.0% Sln. @25°C)	11.4
Solubility in water (30°C)	51 g/100 ml

Recommended Treatment

Concentration of Soda Ash to be added to make-up water will depend on its actual calcium ion content.

Required amount of Soda Ash (lb/bbl)

$$= \text{Total Hardness (mg/L)} * 0.000928$$

Do not use Soda Ash to treat massive cement contamination. Overtreatment with Soda Ash can result in carbonate contamination.

Soda Ash is normally mixed through the chemical barrel or mud hopper.

Safety and Handling

Prior to using this product, refer to the safety data sheet for information on use of personal protective equipment, safe handling, storage, transport, and disposal.

Packaging

Soda Ash is available in 50 lb (22.7 kg) and 55 lb (25 kg) bags.