

Sodium Bicarbonate

Description

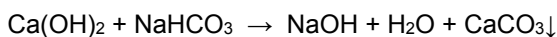
Sodium Bicarbonate (NaHCO_3) is commonly known as Bi-Carb, Baking Soda or Bicarbonate of Soda.

Applications

Sodium Bicarbonate (NaHCO_3) is utilized to precipitate soluble calcium in water-based drilling fluids. It is used primarily for treating cement contaminated drilling fluids. Anhydrite (CaSO_4) contamination can also be treated with Sodium Bicarbonate, but it will result in a reduction in the pH of the mud system.

It can be used as a pre-treatment when cement is going to be drilled out or when formations containing calcium are expected to be drilled.

When used to treat cement contamination, the reaction is as follows:



Sodium Bicarbonate is also used as pH buffer in brines for drilling and completion operations.

Features and Benefits

- Treat soluble calcium contamination. Calcium contamination can lead to undesirable increases in rheology, gel strengths and filtration.
- Provides a source of bicarbonate ions (HCO_3^-) to tie up free calcium as insoluble calcium carbonate.
- Increase effectiveness of polymers
- Easily available and economic source of bicarbonate ion

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Typical Properties

Appearance	Powder
Color	White
Specific Gravity	2.16
pH (1.0% Sln.@25°C)	8.5
Solubility in water (30°C)	9.6 g/100 ml

Recommended Treatment

Concentration of Sodium Bicarbonate to be added to the drilling fluid will depend on the calcium content.

Required amount of Sodium Bicarbonate (lb/bbl)

$$= \text{Calcium (mg/L)} * 0.00074$$

Do not use Sodium Bicarbonate to treat out calcium of make-up water, use Soda Ash instead. Overtreatment with Sodium Bicarbonate can result in bicarbonate or carbonate contamination which will result in filtration and rheological problems. Sodium Bicarbonate 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

Sodium Bicarbonate is available in 50 lb (22.7 kg) and 55 lb (25 kg) bags.