

# SODA ASH

Soda Ash ( $\text{Na}_2\text{CO}_3$ ) is the common name for sodium carbonate, which has a molar mass of 105.9888 g/mol (anhydrous).

Soda ash is inexpensive and used as an economical method for removing soluble calcium. Magnesium is similarly precipitated as insoluble magnesium carbonate; however, a more effective treatment for magnesium hardness is caustic soda, which precipitates magnesium hydroxide.

## Application/Function

Soda Ash is used to precipitate Calcium in make-up water or while drilling anhydrite stringers.

Provided the saturation level of the Calcium salt has not been exceeded, the amount of Soda Ash required to treat out the calcium can be approximated by 350 mg/L Calcium ions requires 1.0 kg/m<sup>3</sup> of Soda Ash.

Soda Ash effectively and economically removes Calcium from anhydrite by precipitation as Calcium Carbonate. Over-treatment with Soda Ash can result in a Carbonate alkalinity and as consequent, excessive gel strength.

## Advantages

- Widely available and economical source of carbonate ions to precipitate calcium while increase pH
- Concentrate chemical: effectively removes calcium in most drilling fluids at small dosage
- Effective flocculants for spud mud

## Recommended Treatment

Add Soda Ash in concentration of 0.4 -1.2 lb/bbl (1.0 – 3.0 kg/m<sup>3</sup>) to any system. Mix slowly through a jet mixer or sift slowly into the vortex of a high-speed stirrer.