

Hydrated Lime

Description

Hydrated Lime or lime is Calcium Hydroxide with chemical formula $\text{Ca}(\text{OH})_2$. When mixed in water, it dissolves and produces Calcium ions and hydroxyl ions, and increases the solution pH.

Hydrated Lime is a dry powder obtained by mixing hot lime or quicklime with a sufficient amount of water to satisfy the hot lime natural affinity for moisture.

Applications

Hydrated Lime can be used to raise the pH and alkalinity of all drilling muds (WBM and OBM/SBM).

In oil-based drilling fluids it enhances the performance of emulsifiers (especially fatty acids).

Hydrated Lime is added to the sump water to increase the pH and to provide calcium ions resulting in solids/clay flocculation in clear water drilling.

In a Gypsum-based mud system, Hydrated Lime is added to maintain a fluid pH of 10 - 11.

Features and Benefits

- Enhances emulsifier performance in oil-based drilling fluids
- Helps control H_2S in drilling fluids
- Alleviates the corrosion rate by ensuring an alkaline environment in drilling fluids
- Cost effective for increasing fluid pH

Typical Properties

Appearance	Powder
Color	Grey-White
Specific Gravity	2.2
Solubility	Slightly soluble in water

Recommended Treatment

Hydrated Lime should be premixed with water in chemical barrel and trickled in. Concentrations will vary and pH must be monitored during additions to determine amounts. Commonly, a concentration of 0.35 lb/bbl (1 kg/m^3) is used. Caution should be exercised as excess lime will cause thickening of some mud systems and high pH solutions will burn exposed areas.

In general, for treating carbonates and bicarbonates 0.09 – 0.12 lb/bbl ($0.25 - 0.3 \text{ kg/m}^3$) will remove 100 lb/bbl of CO_3^{2-} (or 50 lb/bbl of HCO_3^-).

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

Hydrated Lime is supplied in 22 lb (10 kg), 44.1 lb (20 kg), 50 lb (22.68 kg) and 55 lb (25 kg) bags.

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