

# Hot Lime

## Description

Hot Lime or Quick Lime is Calcium Oxide with chemical formula  $\text{CaO}$ . When mixed with water at 1:1 mol ratio, it hydrates to form Lime or  $\text{Ca}(\text{OH})_2$  which dissolves in water and produces Calcium ions and hydroxyl ions, and increases the solution pH. Hot Lime is a dry powder obtained by heating high calcium limestone ( $\text{CaCO}_3$ ).

## Applications

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

In oil-based drilling fluids, Hot Lime also enhances the performance of emulsifiers (especially fatty acids). It is preferred over Hydrated Lime due to its exothermic reaction with water which may further increase the emulsifier activation and performance, and organoclay activation in OBM.

Hot 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.

It is also used for drying water based drill cuttings.

## Features and Benefits

- Enhances emulsifier performance in oil-based drilling fluids
- Helps control  $\text{H}_2\text{S}$  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	3.25 – 3.28
pH (Sat. Soln.)	12.45
Solubility in water	0.125 g/100 g at 20°C

## Recommended Treatment

Hot 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 ( $1 \text{ kg/m}^3$ ) is used. Caution should be exercised as excess lime will cause thickening of some mud systems and high pH solutions will burn exposed areas.

## 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

HOT LIME is available in 55 lb (25 kg) sacks.

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