

# LC-LUBE

## Control drilling fluid losses and strengthen formations

### Applications

- All drilling fluids
  - Water-based and invert emulsion drilling fluid systems
- Loss of circulation, from seepage loss to total loss of returns

### Features and benefits

- Excellent sealing and bridging properties
  - Reduces HP/HT fluid loss
  - Strengthens fractured and porous formations
- Functions as a solid lubricant and friction reducer
  - Ideal for use as a sliding aid to increase weight transfer to bit
  - Aids in running liners
- Chemically inert
  - Works with all drilling fluid additives
- Thermally stable under HP/HT conditions
  - Works effectively in a wide range of temperatures

The Baker Hughes **LC-LUBE™ synthetic graphite particulate** is specially formulated to control circulation loss and partial seepage losses of drilling fluids. The size, shape, and durable nature of the LC-LUBE particulate makes it ideal for pre-emptive use in highly depleted reservoirs and depleted, high-pressure/high-temperature (HP/HT) wells. It is also able to function as a solid lubricant in majority of drilling fluids.

The LC-LUBE particulate is a component of the Baker Hughes **MAX-BRIDGE™ advanced bridging solution**. Due to its inert nature, the LC-LUBE particulate is fully compatible with water-, synthetic-, and oil-based drilling fluids.

There are no adverse effects on chemical properties. There is no increase in fluid rheology, even when adding up to 30 lb/bbl (85.8 kg/m<sup>3</sup>) throughout the mud system.

### Recommended treatment

Seepage losses should be treated with the LC-LUBE particulate at a dose of 6.0 to 20.0 lb/bbl (17.2 to 57.2 kg/m<sup>3</sup>). The LC-LUBE particulate can be pretreated prior to drilling into a known loss zone. Total loss of returns should be treated with high concentrations of the particulate (up to 40 lb/bbl [114.4 kg/m<sup>3</sup>]) formulated as a pill and spotted across the loss zone.

The LC-LUBE particulate can be run in the active circulating system without bypassing the shale shakers. Coarse screens are recommended for the first few circulations, after which the product will grind down. Some coarse particles will be stripped out and will need to be replaced with new material.

### Environmental information

The LC-LUBE particulate has been given a Group E rating from the Offshore Chemical Notification Scheme (OCNS) for use in the United Kingdom.

For information concerning environmental regulations applicable to this product, contact the Health, Safety, and Environmental department of Baker Hughes.

### Shipping

Transportation of the LC-LUBE particulate is not restricted by either international or United States regulatory agencies.

### Safe handling

#### recommendations

Use normal precautions for employee protection when handling chemical products. See Safety Data Sheet (SDS) prior to use.

### Packaging

The LC-LUBE particulate is packaged in 50-lb (22.7-Kg) multi-walled sacks.

#### Typical properties

<b>Appearance</b>	Dark gray/black granular material
<b>Specific gravity</b>	2.25
<b>Solubility in water</b>	Insoluble
<b>pH (10% solution)</b>	6.5 to 10.5