

# CARBO-MUL HT

## Delivers emulsion stability and oil wetting in invert emulsion drilling fluid systems

### Applications

- Invert emulsion drilling fluids
  - Compatible with diesel, mineral oil, and synthetic base fluids

### Features and benefits

- Does not require lime hydrate for activation
- High flash point
  - Not classified as flammable liquid
- Stable to temperatures up to 350°F (177°C)
  - Can be used in conjunction with CARBO-TEC emulsifier and lime to prepare fluids to withstand temperatures in excess of 400°F (204°C)

The **CARBO-MUL™ HT emulsifier** from Baker Hughes is a high-temperature, high-performance, oil-soluble polyamide used as an emulsifier and wetting agent in invert emulsion drilling fluids such as the **CARBO-DRILL™ oil-based fluid systems**.

Extremely low concentrations of CARBO-MUL HT emulsifier reduce the interfacial tension between the aqueous, internal phase of oil muds/inverts and the external oil phase, and emulsify the two together into a stable system. CARBO-MUL HT additive can also be used to treat water contamination.

CARBO-MUL HT emulsifier is compatible with a wide range of internal phase salinities and can be used to emulsify calcium chloride and sodium chloride brines, seawater, and freshwater. CARBO-MUL HT adsorbs onto mineral surfaces, reducing interfacial surface energy and rendering oil-wet **MIL-BAR™ weighting agent** and drilled solids.

Unlike soap surfactants, CARBO-MUL HT does not require lime hydrate to function effectively and is an ideal surfactant for low-colloid, relaxed invert systems.

The CARBO-MUL HT emulsifier can be used in high-temperature, high-pressure (HT/HP) fluid formulations in conjunction with **CARBO-TEC™ emulsifier**, lime, and filtration control additives to withstand temperatures in excess of 400°F (204°C).

### Recommended treatment

The CARBO-MUL HT emulsifier may be used as the primary or sole emulsifier and wetting agent in the CARBO-DRILL oil-based fluid systems. Concentrations of 0.42 to 2.1 gal/bbl (10 to 50 L/m<sup>3</sup>) of CARBO-MUL HT will be required depending on bottomhole temperature and fluid properties such as density, oil/water ratio, and solids content.

CARBO-MUL HT emulsifier may also be used in the formulation of low-colloid/relaxed-filtrate oil mud systems. Relaxed-filtrate oil mud systems will typically require 0.40 to 0.75 gal/bbl (9.5 to 17.9 L/m<sup>3</sup>) of CARBO-MUL HT. When used as a wetting agent while weighting up, approximately 1.0 gal/bbl (23.8 L/m<sup>3</sup>) of CARBO-MUL HT per 25- to 100-lb (11.34- to 45.36-kg) sacks of MIL-BAR weighting agent is required.

### Environmental information

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

### Shipping

Transportation of the CARBO-MUL HT emulsifier is not restricted by international or USA regulatory agencies.

## Safe handling

### recommendations

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

### Packaging

CARBO-MUL HT emulsifier is packaged in 52.8-gal (200-L) and 55-gal (208.2 L) nonreturnable drums.

### Typical properties

<b>Appearance</b>	Dark amber liquid
<b>Specific gravity</b>	0.92
<b>Flash point (Closed cup)</b>	178°F (81.1°C)
<b>Pour point</b>	12.2°F (-11°C)