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### R-Clean DM-3 Casing Scrubber for Well Completion Operations

**Description:** R-Clean DM-3 is a proprietary blend of selected water-soluble surfactants specifically designed for the clean-up of casing, drill pipe, and surface equipment during completion operations. R-Clean DM-3 is specifically designed to work on diesel based, mineral oil based, and water based drilling fluids.

#### Physical Properties:

☞ Appearance.....	Green liquid
☞ Specific Gravity.....	1.045
☞ Density (lbs/gal).....	8.7
☞ Flash Point.....	> 201° F
☞ pH.....	8.0 – 8.5

#### Advantages:

- ☞ Non-flammable and non-corrosive
- ☞ Biodegradable, non-toxic, and non-hazardous
- ☞ Disperses oil and oil coated solids in to small droplets
- ☞ Reduces or eliminates the need for filtering brine completion fluids
- ☞ Leaves a water wet surface after displacement with no oily film on metal surfaces
- ☞ When used as directed, does not form or create a surface sheen on receiving water

#### Application:

R-Clean DM-3 is used to displace mud systems prior to completion operations and to thoroughly clean tubing O.D. and casing I.D for gravel packing operations. R-Clean DM-3 should be used at a  $\pm$  3% concentration with water or brine and circulated to remove residual mud. Total “pill” volume should be calculated to maximize time of contact while being circulated in turbulent flow. If more specific application recommendations are require, a **Reliant®** engineer will be happy to assist.

#### Handling:

Improper handling of this product can cause injuries to workers. Observe all safety precautions shown on the label and on the Material Safety Data Sheet.

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### **R-Clean DM-3 Displacement Procedures**

#### **Directions for Seawater Displacement**

- 1) Circulate well with seawater until the returning water appears clean. Mix a “pill” containing 1% - 3% R-Clean DM-3 in seawater, depending on the type of mud to be removed (oil based mud or water based mud). Pump the “pill” in turbulent flow.
- 2) Circulate the pill around and continue circulating until the water behind the pill appears clean.
- 3) Displace the seawater with a clean completion fluid.

#### **Generalized Procedure for Direct Displacement of Mud with Completion Fluid**

- 1) Pump a 30 – 50 barrel “spacer” containing 4 pounds per barrel HEC.
- 2) Immediately follow the “spacer” with a 100 barrel “pill” containing 1% - 3% R-Clean DM-3 in either seawater (or freshwater, if desired). Pump in turbulent flow.
- 3) Follow the R-Clean DM-3 “pill” with a 30 – 50 barrel “pill” containing 4 pounds per barrel HEC.
- 4) Follow the last “pill” with clean completion fluid. Discard all the “pills” before final filtering of the completion fluid.

**Reliant can engineer a specific displacement procedure for any given situation.**

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