



TECH DATA SHEET

PRODUCT DESCRIPTION: **HDD Defense** is a blend of environmentally safe sealants and swellable materials designed to remediate inadvertent return events in HDD applications.

Designed to be applied at the onset of inadvertent returns, **HDD Defense** should be spotted as a pill on bottom (in the inadvertent return zone), with typical concentrations varying from 1 – 1.5 lb/gallon.

APPLICATIONS AND USE: At the onset of inadvertent returns, pumping should be stopped while mixing the **HDD Defense** pill. Isolate a mixing tank suitable of holding the desired finished volume, and fill with fresh mud. Add the required **HDD Defense** through the mixing hopper. Once the pill is mixed, the entire pill should be picked up and pumped down the drill pipe. Chase the pill with active mud until the tail of the pill is outside of the bit. Stop pumping and pull pipe out of the hole to position the bit behind the tail of the pill. Begin circulating at a slow rate while monitoring returns. Stage the pumps up slowly and circulate behind the pill for 1-2 hours to allow the material to create a seal.

- 50 sacks **HDD DEFENSE** in 1,000 gallons of fresh mud
- 100 sacks **HDD DEFENSE** in 2,000 gallons of fresh mud
- 200 sacks **HDD DEFENSE** in 4,000 gallons of fresh mud

PHYSICAL PROPERTIES:

Appearance:	Light tan
Bulk Density:	1.85 SG
pH:	NA

PACKAGING:

HDD Defense is available in 25 lb. bags