



# PENETREX ROP enhancer

Increases drilling ROP by reducing torque and drag, and preventing bit balling and associated vibration

The **PENETREX™ rate-of-penetration (ROP) enhancer** is designed for use in water-based drilling fluid systems such as the **PERFORMAX™ high-performance water-based drilling fluid system**. It also works effectively with the Baker Hughes, a GE company (BHGE), **Talon™ high-efficiency PDC drill bit** for faster drilling, superior directional control, and enhanced durability.

The organic, surface-acting PENETREX ROP enhancer forms a hydrophobic coating on the bit, bottomhole assembly (BHA), and cuttings, reducing balling and accretion. The minimization of this buildup reduces the tendency of the BHA to vibrate and leads to an overall improvement in ROP.

## Recommended treatment

An initial treatment of 0.25 gpm directly to the pump suction is adequate, but it can be increased by up to 5–6% volume, depending on the ROP achieved, amount of shale encountered, type of mud system, and the interval length.

## Environmental information

The PENETREX ROP enhancer has been evaluated in BHGE Drilling and Completion Fluids' Bioassay Program. The United States Environmental Protection Agency (US EPA) Drilling Fluids Toxicity Test gave it an LC50 of > 1 million suspended particular phase (SPP) for 5% volume in a generic #7 mud system.

For information concerning environmental regulations applicable to BHGE drilling fluids products, contact the Health, Safety, and Environment Department.

## Safe handling recommendations

Use normal precautions and safety equipment for employee protection and comfort when handling chemical products. Please see the safety data sheet prior to use.

## Applications

- Medium to hard shales onshore or offshore
- Horizontal, deviated, and extended-reach wells
- Water-based drilling fluid systems (pH in excess of 12 may cause increase in rheological properties)

## Benefits

- Reduces torque and drag
- Minimizes bit-balling and accretion and associated vibration
  - Significantly enhances drilling ROP while optimizing drilling efficiency
  - Decreases nonproductive time
- Provides a lower emulsification than other ROP enhancers
- Works effectively with Talon PDC drill bit
  - Gives superior directional control, longer run life, improved ROP, and enhanced durability

## Shipping and packaging

Transportation of the PENETREX ROP enhancer is not restricted by either international or US regulatory agencies. It is packaged in 55-gal (208.2-liter) drums and can be supplied in bulk form.

### Typical properties

Appearance	Clear liquid
Specific gravity	0.84
Flash point	> 100°C (> 212°F)
Pour point	-25°C (-13°F)

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