

# AMERICAN GILSONITE

Improves performance, extends thermal life and reduces cost



## Proven safe and effective for deepwater operations

Gilsonite® is a safe, naturally occurring hydrocarbon resin with unique chemical properties. Added to drilling fluids, it increases performance and reduces cost in deepwater drilling while minimizing risk.



### Gilsonite meets all EPA requirements for Gulf of Mexico discharge

	EPA Static Sheen	96 Hours LC50 Aquatic Bioassay >30,000 ppm SPP	EPA (RPE) Fluorescence	GCMS Crude Oil <1%	Sediment Toxicity <1.0
Synthetic-Based Mud (SBM)	✓ Pass (No sheen)	✓ Pass (929,380)	✓ Pass (No fluorescence)	✓ Pass (0.06)	✓ Pass (0.3)
SBM + 3 ppb <b>Gilsonite</b>	✓ <b>PASS</b> (No sheen)	✓ <b>PASS</b> (933,350)	✓ <b>PASS</b> (No fluorescence)	✓ <b>PASS</b> (0.06)	✓ <b>PASS</b> (0.22)
SBM + 6 ppb <b>Gilsonite</b>	✓ <b>PASS</b> (No sheen)	✓ <b>PASS</b> (890,670)	✓ <b>PASS</b> (No fluorescence)	✓ <b>PASS</b> (0.06)	✓ <b>PASS</b> (0.22)

## The deeper you look, the more benefits you'll see

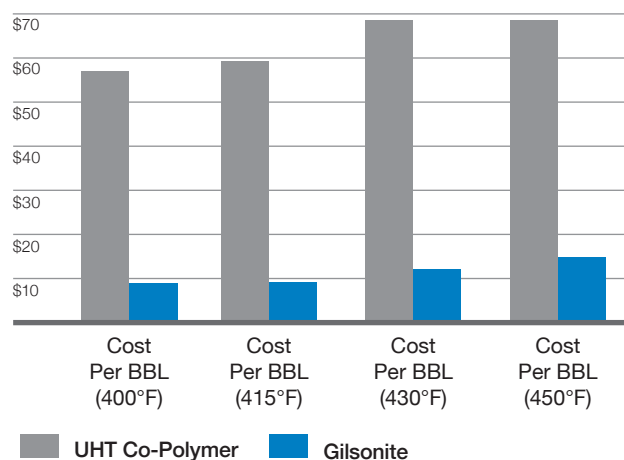
Gilsonite has been proven safe and effective in more than 60 years of oilfield performance. With natural bonding and plugging properties and a high softening point, it is a cost-effective, multi-purpose additive.

- > Extends thermal life 10% or more
- > Prevents lost circulation
- > Minimizes differential sticking
- > Stabilizes shales
- > Performs in WBM and SBM
- > Performs in HP/HT environments
- > Reduces cost vs. polymers
- > Delivers higher performance with no HSE risk

## Gilsonite reduces costs more than 80%

Gilsonite is a fraction of the cost of premium polymers. With its high softening point, it delivers greater cost advantages at higher temperatures.

Gilsonite improves performance at a fraction of the price of synthetics alone.

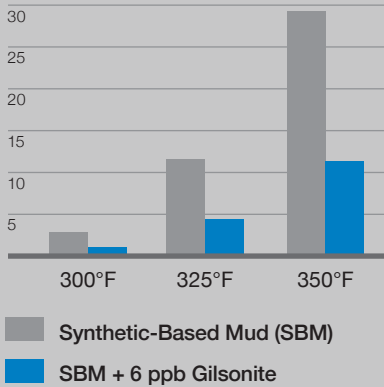


## Gilsonite extends thermal life

American Gilsonite Corporation's mines have yielded variations of uintaite with a range of softening points. Carefully selected varieties of pure Gilsonite have been combined to perform to customers' specifications, at temperatures as high as 500°. Adding Gilsonite extends the thermal life of synthetic-based mud and water-based mud formulations by 10% or more.

### HT/HP Fluid Loss (ml)

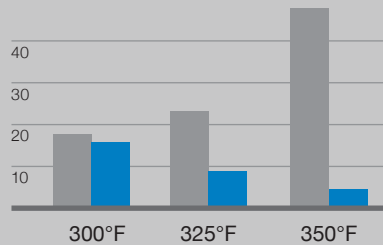
Up to 66% reduction in fluid loss



### Particle Plugging Test (PPT)

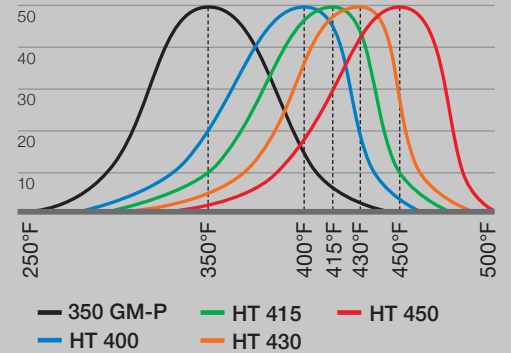
@2000 psi, 10 Microns Disk (ml)

Up to 91% improvement in particle plugging



### High Softening Points (% Cumulative Particle)

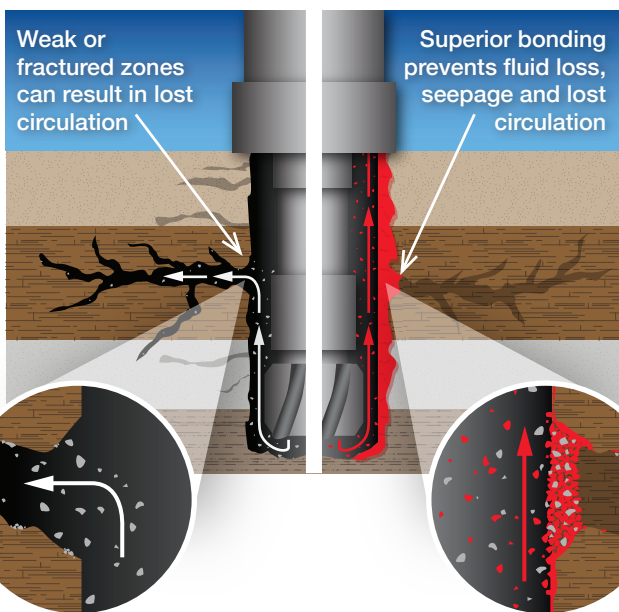
Gilsonite products offer a variety of softening points to meet drilling requirements



## Unique bonding and plugging properties prevent formation damage

Gilsonite forms a physical and chemical bond with permeable formations, creating an effective seal to prevent the passage of drilling fluid. By uniquely functioning as both a malleable and solid plugging agent, Gilsonite controls fluid loss and seepage, prevents lost circulation and protects reactive and low-reactive shale surfaces, even at elevated bottomhole temperatures.

### Without Gilsonite



## A case history: Gilsonite eliminates deepwater differential sticking

An international oil company drilling below 16,000 ft. in the Gulf of Mexico encountered a major pressure regression, and the pipe became differentially stuck. Unable to free the stuck pipe, the oil company and the drilling fluids provider decided to sidetrack the well, re-drilling the section with a zero fluid loss WBM.

Onsite testing indicated that sized particles and calcium carbonate in combination with high concentrations of Gilsonite resulted in < 0.5 cc HPHT fluid loss, and fluid loss was nil as measured with a permeability plugging apparatus. Using the reformulated WBM, drilling proceeded through the major pressure regression without any sticking tendencies in the problematic wellbore. Gilsonite is proven under pressure.®

## Gilsonite is naturally better®

Gilsonite is a naturally occurring hydrocarbon resin (uintaite) found only in northeastern Utah. Gilsonite has significant health advantages over synthetic products.

- > Gilsonite is:
  - Non-toxic (unlike coal or fly ash)
  - Non-carcinogenic
  - Non-mutagenic
- > No extreme safety measures are needed to handle Gilsonite