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.

EPA TESTED SAFE

Gilsonite meets all EPA requirements for Gulf of Mexico discharge

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

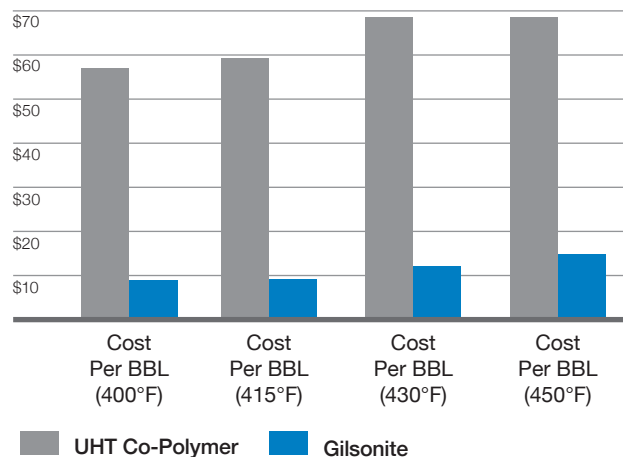## The deeper you look, the more benefits you'll see

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.

Bar chart comparing UHT Co-Polymer and Gilsonite cost per BBL at 400°F, 415°F, 430°F, and 450°F.

■ UHT Co-Polymer ■ Gilsonite

AMERICAN GILSONITE COMPANY

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.
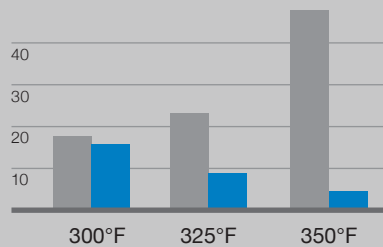
HT/HP Fluid Loss (ml)
Up to 66% reduction in fluid loss

- Synthetic-Based Mud (SBM)
- SBM + 6 ppb Gilsonite
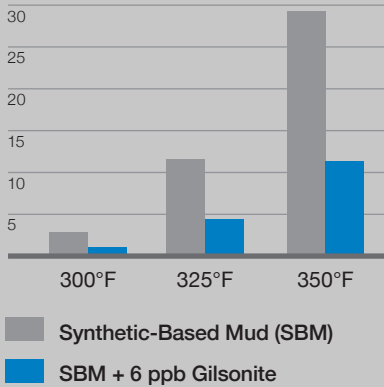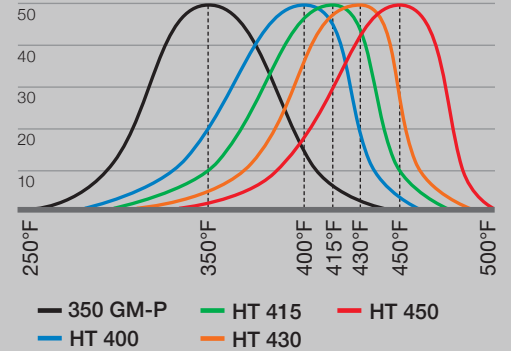
Particle Plugging Test (PPT) @2000 psi, 10 Microns Disk (ml)
Up to 91% improvement in particle plugging
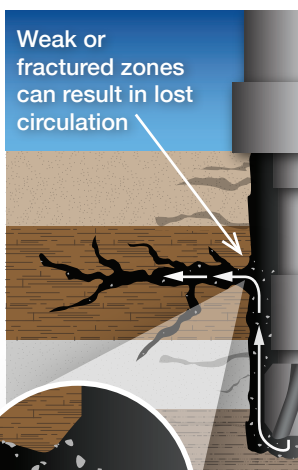

High Softening Points (% Cumulative Particle)
Gilsonite products offer a variety of softening points to meet drilling requirements

- 350 GM-P
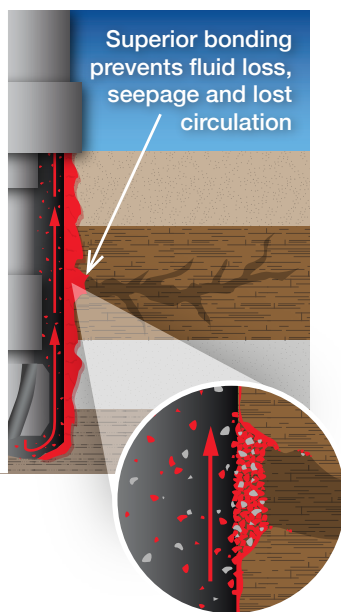- HT 400
- HT 415
- HT 430
- HT 450

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

Weak or fractured zones can result in lost circulation

With Gilsonite

Superior bonding prevents fluid loss, seepage and lost circulation

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