

AMERICAN GILSONITE

Enhances properties of cement, reduces the cost and complexity of using multiple additives

Gilsonite® can assure zonal isolation, reduce environmental risk, improve ultimate recovery, and reduce total cost of ownership for the life of a well.

Wellbore architecture and cement integrity are integral to well performance and total recovery. With a number of unique chemical properties and physical characteristics, Gilsonite® uintaite is the ideal cementing additive for simple to complex wellbore configurations.

Cement slurry benefits

- > Increases yield
- > Reduces slurry weight
- > Controls free water
- > Lowers slurry water ratio
- > Promotes favorable rheologies resulting in lower ECDs
- > Prevents lost circulation
- > Scours wellbore/enhances mud removal

Set cement benefits

- > Supports compressive strength development
- > Increases flexibility
- > Reduces cracking
- > Heals microfissures
- > Reduces permeability
- > Strengthens bond to the formation and the casing
- > Reduces environmental risk
- > Complies with regulations

Gilsonite® eliminates the problems of free water

By controlling free water, Gilsonite® uintaite helps stabilize slurry and eliminates the need for – and cost of – additional free-water-control agents. It also improves zonal isolation by preventing water channeling on the upper side of the wellbore.

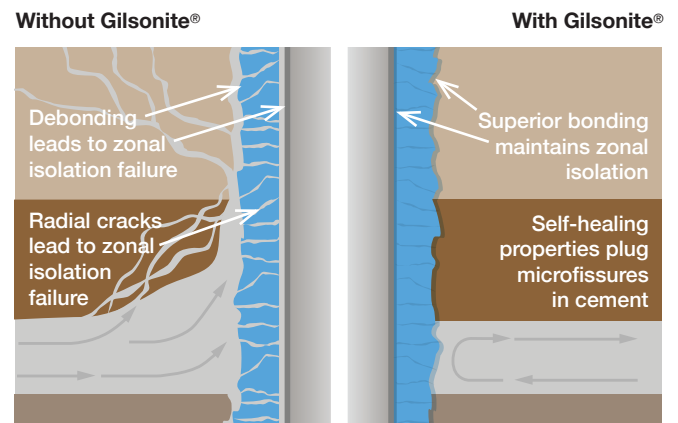
Free Water Comparison (12.5 ppg at 140°F/100°F)



Similar results were obtained with different temperatures and slurry densities.

Self-healing properties help maintain zonal isolation

Gilsonite® uintaite is flexible, deformable, swellable, impermeable and non-porous. These characteristics give Gilsonite® self-healing properties that can plug induced microfissures in the cement sheath.



When microfissures develop, Gilsonite® expands to seal the cracks.

Fracture Closure (13.4 ppg Slurries)



Properties that make Gilsonite® uintaite an ideal cement additive

- > Low specific gravity (1.04-1.06 @ 77°F)
- > High softening points (>340°F)
- > Semi-polymeric behavior
- > Low moisture content (<1.5%)
- > Does not impact thickening time
- > Difficult to fuse (no remassing)
- > Compatible with paraffins, resins, oils, asphalts and elastomers
- > Compatible with other cement additives
- > High purity
- > Cost effective
- > Reliable quality
- > Versatile

Gilsonite® is naturally better®

Gilsonite® uintaite is a naturally occurring asphalt-like solid hydrocarbon rock (uintaite) found only in northeastern Utah. Gilsonite® has significant health advantages over synthetic products. OSHA Material Safety Data Sheets classify Gilsonite® as:

- > Non-toxic
- > Non-carcinogenic
- > Non-mutagenic

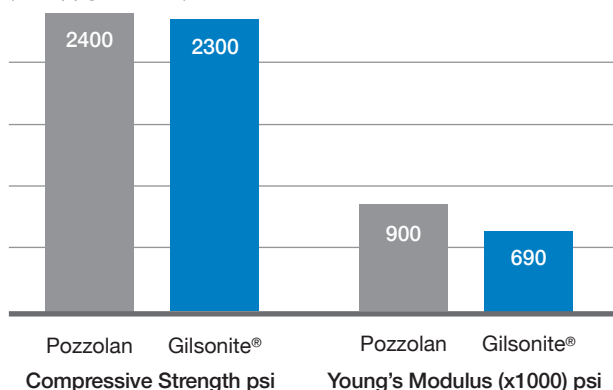
No extreme safety measures are necessary when handling Gilsonite®. It passes RPE, GCMS, LC50 and SedTox. Gilsonite® is even approved for use as a coating on surfaces that contact food.

Durability for today's wells

Wells with long laterals and/or multiple zone completions require a durable cement. Gilsonite® uintaite lowers Young's Modulus of Elasticity which increases cement's flexibility and durability. It provides for life-of-well protection to withstand the rigors of drilling subsequent hole sections, cyclic pressures and temperatures of multizone completions, and long-term production with no sacrifice to compressive strength development.

Comparative Mechanical Properties

(13.7 ppg @ 190°F)

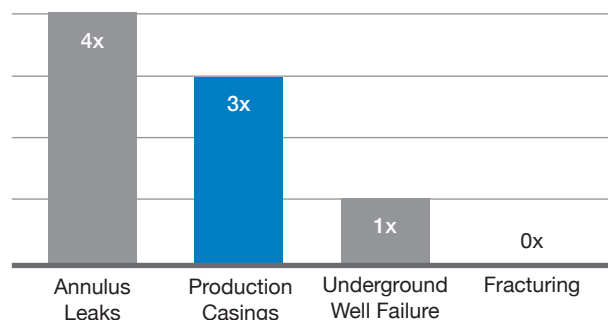


Cementing is critical to environmental and financial responsibility

According to the Proceedings of the *National Academy of Sciences Journal* of September 15, 2014, "Well integrity problems, not horizontal drilling or hydraulic fracturing, are responsible for contamination of surface aquifers."

Sources of Fugitive Gases

(Proceedings of the *National Academy of Sciences Journal*)



The exceptional properties of Gilsonite® uintaite help provide assurance that your cementing job is the foundation of well integrity, compliance and long-term production with minimal environmental impact.

- > Zonal isolation for the life of the well
- > Elimination of fluid crossflow
- > Prevention of gas migration to the surface
- > Protection of fresh water aquifers

Proven in more than 60 years of oilfield performance

The effectiveness of Gilsonite® uintaite as a versatile additive has been documented in approximately 50 SPE and other peer-reviewed presentations.

Gilsonite® is our trademarked brand name for uintaite:

There's only one source of Gilsonite®.

Proven under pressure®

