

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 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 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.

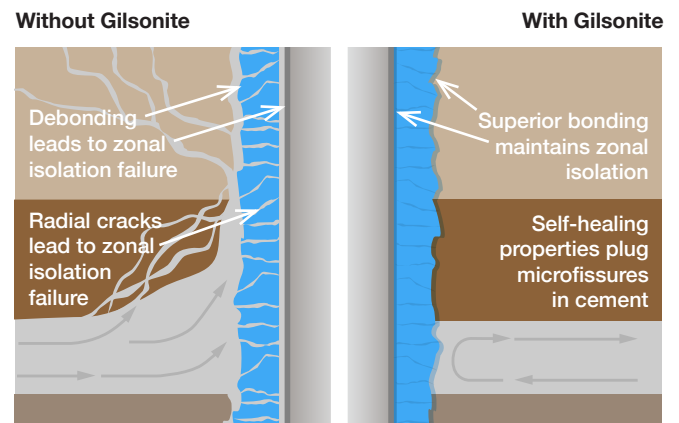
Free Water Comparison (12.5 ppg at 140°F/100°F)



Similar results were obtained with different temperatures and slurry densities.

Self-healing properties help maintain zonal isolation

Gilsonite 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 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 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

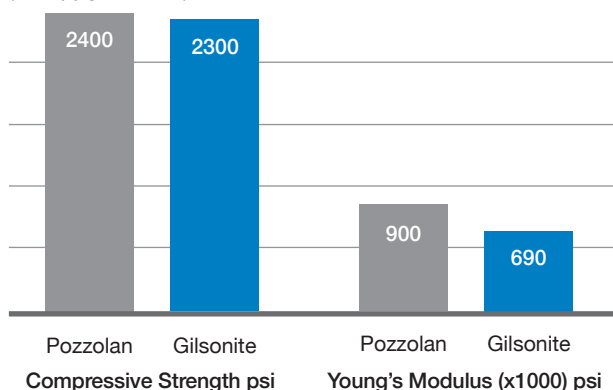
No extreme safety measures are necessary when handling Gilsonite. It passes RPE, GCMS, LC50 and SedTox. Gilsonite is even approved for use as a coating on surfaces that contact food.

Durability for today's wells

Wells with long laterals and/or multiple zone completions require a durable cement. Gilsonite 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)

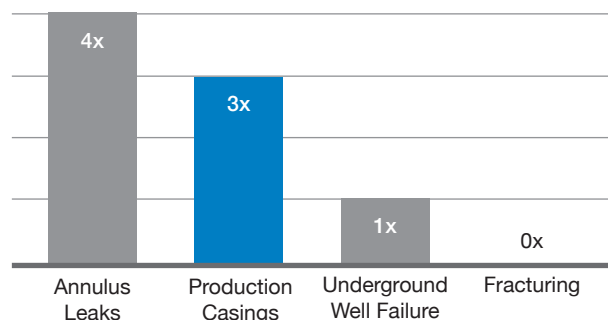


Cementing is critical to environmental and financial responsibility

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 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 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.®

