PhenoFlake®

Lost Circulation Material

Description

PhenoFlake® is a rigid phenolic resin laminate lost circulation material engineered for cementing operations where moderate to severe fluid losses are encountered. The product consists of durable flake-shaped particles designed to mechanically bridge and seal fractures, vugs, and permeable formations during cement placement. The laminate flake geometry forms overlapping mechanical barriers within the loss zone, helping reduce slurry invasion into the formation and maintain circulation during placement.

By improving slurry retention and placement efficiency, PhenoFlake® helps operators mitigate lost returns, reduce remedial squeeze operations, and achieve reliable zonal isolation in challenging formations. PhenoFlake® is chemically inert and thermally stable up to 500°F, enabling reliable performance in high-temperature well environments.

Advantage

- PhenoFlake mechanically bridges and seals permeable formations, reducing cement slurry loss during placement.
- The rigid phenolic resin composition offers up to 500°F temperature stability, supporting performance in elevated downhole temperatures.
- It is chemically inert and compatible with oil-based, water-based, and synthetic cementing systems.
- PhenoFlake has proven effectiveness compared to nutshells, mica, fibers, and their blends in both cement and drilling fluid environments.
- The material aids in reducing bit balling and can assist with pipe and casing movement in loss zones.

Application

- PhenoFlake® is used in primary cementing applications to mitigate fluid losses in permeable and fractured formations.
- It is effective in remedial cementing where lost returns compromise zonal isolation.
- The additive may be integrated into conventional or lightweight cement slurries tailored for loss control performance.
- PhenoFlake is suitable for cementing in wells with variable fracture widths and complex loss mechanisms.

Environmental Advantage

- PhenoFlake® mechanically seals fractures and permeable zones, significantly reducing cement slurry losses to the formation and minimizing material waste at the source.
- Its robust loss control performance lowers the probability of repeat remedial squeeze operations, reducing total cement consumption and associated rig time.
- Enhanced placement efficiency streamlines cementing operations and contributes to reduced fuel usage and overall operational emissions.
- The rigid phenolic resin laminate structure delivers consistent high-temperature performance, decreasing long-term intervention frequency and improving well lifecycle reliability.

Treatment Recommendations

- PhenoFlake® dosage should be determined based on loss severity, formation characteristics, and cement slurry design objectives.
- Laboratory evaluation is recommended to confirm effects on slurry rheology, thickening time, and loss control performance prior to field application.
- The material can be dry blended, or bulk blended for uniform distribution within the cement slurry.
- Monitor returns continuously during placement to evaluate efficacy and adjust concentration as needed.

Physical Properties

Appearance: Rigid laminate flakes in various colors

Specific Gravity: 1.3

Absolute Density: 76 lb/ft^3

Temperature : Up to 500°F (260°C)

Solubility: Phenolic resin composition is chemically inert; soluble in acid under specific conditions.

Handling and Storage

PhenoFlake® should be stored in a dry, well-ventilated area and protected from moisture prior to blending. Packaging should remain sealed until use to prevent contamination. Standard bulk material handling procedures should be followed, and personnel should consult the Safety Data Sheet for proper safety guidance and personal protective equipment.

Packaging

- PhenoFlake® is packaged in 40 lb bags, with 50 bags per pallet.
- The product is also available in 2- 1,000 lb supersacks per pallet for high-volume cementing operations.

The information in this data sheet is provided as general knowledge only. The conditions of use of this product are beyond the seller's control, the product is sold without warranty either express or implied and upon condition that purchaser test the product to determine the suitability for purchaser's application. Purchaser assumes all risk of use, dosage, and handling of this product.

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