

Ultra LiteCRETE

Ultralightweight cement for single-stage operations

APPLICATIONS

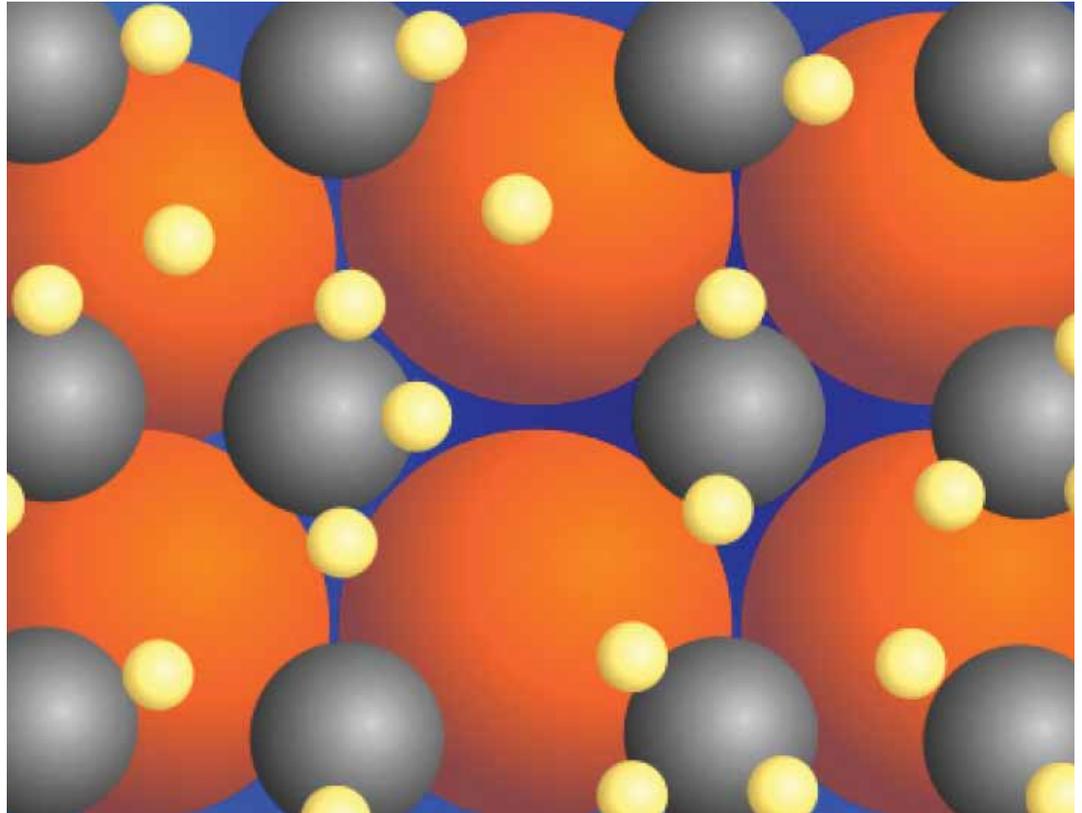
- Extremely fractured or depleted formations
- Production liners and casing
- Corrosive environments

BENEFITS

- Less top-up jobs, saving time
- Reduced cost through
 - elimination of stage tools and rig time between stages
 - elimination of workovers and remedial cementing

FEATURES

- Low slurry density (899 kg/m³ [7.5 lbm/galUS])
- Optimized particle-size distribution
- Good compressive strength (CS)—up to 105 kg/cm² [1,500 psi]
- Production-quality cement with low porosity



The particle-size distribution of the 899-kg/m³ [7.5-lbm/galUS] Ultra LiteCRETE system maximizes the solids content to improve slurry and cement properties.

Isolating the pay zone in highly fractured or weak formations—especially those with a severe to total loss of circulation—usually requires multistage cementing. Ultra LiteCRETE* low-density cement system can achieve an unprecedented 899-kg/m³ [7.5-lbm/galUS] density. Such a density enables single-stage cement operations and produces better-performing set cement than conventional and foam lightweight cements.

ENGINEERED PARTICLE SIZE TECHNOLOGY

The Ultra LiteCRETE system is a three-component blend. Using a combination of three particle sizes, the water content of Ultra LiteCRETE slurry is reduced, and the slurry properties can be controlled, which results in

- improved flow properties
- low permeability
- high CS
- resistance to corrosive brines.

Additionally, the Ultra LiteCRETE system readily solves severe to total lost circulation by applying synergistic technologies such as CemNET* advanced fiber cement. Using CemNET fibers to form a mat at the point of lost circulation, the Ultra LiteCRETE slurry quickly bridges the voids created by the pore spaces of the CemNET fibers. Thus, circulation is regained, and cement slurry is brought back to the surface.

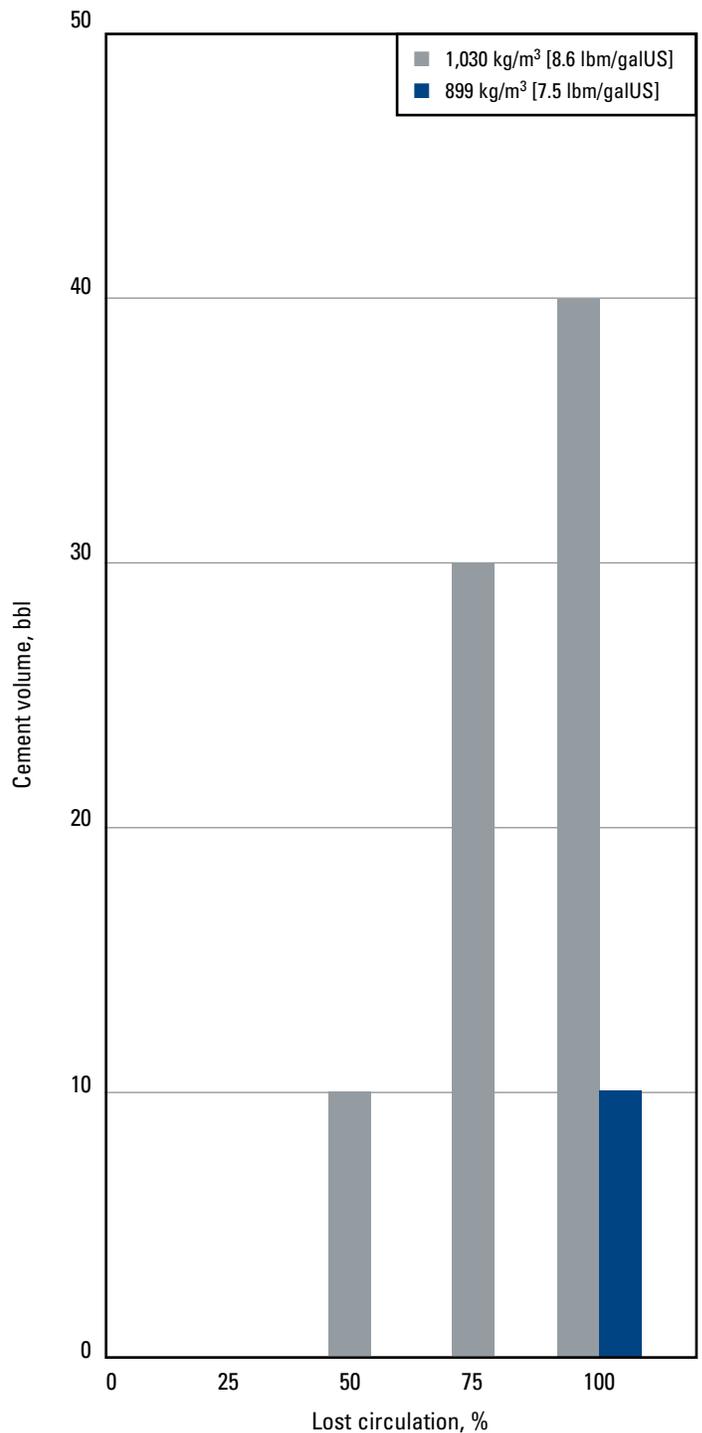
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CASE STUDY—KUWAIT

A joint operations company faced major cementing challenges in the Dammam and first Maestrichtian limestone formations of the Wafra field in Kuwait. Formation integrity was insufficient to withstand the hydrostatic pressure applied while drilling with water. Conventional attempts to reduce the severe to total circulation losses, such as viscous sweeps and pills of lost circulation materials, raised the equivalent circulating density and resulted in more losses.

Because local regulations required cement coverage from TD to the surface, stage tools were necessary with conventional slurry systems. Multiple top-up cementing jobs down the annulus achieved zonal isolation and brought the cement to surface. The low-density 899-kg/m³ [7.5-lbm/galUS] slurry system that combined Ultra LiteCRETE slurry with CemNET fibers made it possible to cement in a single stage.

The application of Ultra LiteCRETE and CemNET technologies reduced top-up jobs by 90% and reduced operating time by 8 to 10 hours per well. Workovers and remedial cementing were no longer necessary to repair leaking stage tools and corroded casing. By eliminating the stage tools and the rig time between stages, the client saved USD 40,000 per well.



Reducing the cement density from 1,030 to 899 kg/m³ [8.6 to 7.5 lbm/galUS] greatly decreased the top-up cement required for Wafra field operations by controlling the circulation losses.

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