

D-Grade self-destructive bridging agent

Provides primary fluid loss control for a desired period of time

Applications

- Self-destructive fluid loss control pills for completion or intervention operations
- Tunable, extra-long delay filtercake breaker for moderate temperatures

How it improves wells

- Offers various size options for blending
- Easily mixes into the fluid system
- Self-degrades without intervention

How it works

D-Grade* self-destructive bridging agent is a versatile additive that can be used both in self-degradable fluid loss pills and filtercake breakers. With sufficient temperature, D-Grade agent reacts with the aqueous phase and dissolves itself, thereby releasing acid that will destroy nearby filtercake components and eliminate the need for postplacement cleanup.

This agent is used in self-degrading fluid loss control pills to provide primary fluid loss control for a desired period of time. D-Grade agent is ground to specific sizes to act as a bridging agent. With an optimized blend of particles, fluid loss control is minimized.

As a bridging solid, concentrations of D-Grade agent range from 10 to more than 70 lbm/bbl [28.5–200 kg/m³], depending on the application. D-Grade agent is available with various particle size distributions. The optimum blend of D-Grade agent sizes is determined using OPTIBRIDGE* bridging agent selection software, and fluid loss is optimized in the laboratory.

D-Grade agent is also used as an internal breaker in the D-Link* self-dissolving fluid loss control pill at concentrations between 1 to 10 lbm/bbl [2.9 to 28.5 kg/m³].

As a filtercake breaker, the agent is used at concentrations of 15 to 100 lbm/bbl [42.8 to 285 kg/m³], depending on the breakthrough time required and composition of reservoir drill-in fluid. SAFE-VIS E* liquid polymer fluid loss control additive at 0.5 to 2.0 lbm/bbl [1.4 to 5.7 kg/m³] is required to suspend solids for filtercake breaker applications.

Degradation time of D-Grade agent will vary depending on the base fluid, density, and bottomhole temperature.

Limitations

- Agent degrades rapidly above 220 degF [104 degC] and may not activate below 170 degF [77 degC]
- Dissolution time is dependent on base fluid and temperature; lab testing required to confirm delay
- Corrosion inhibitor is recommended when used as a breaker

Toxicity and handling

Bioassay information is available on request. Handle as an industrial chemical, wearing protective equipment and observing the precautions as described in the SDS.

Packaging and storage

D-Grade agent is packaged in 50-lbm [22.7-kg] paper sacks. Store in a dry, well-ventilated area. Keep container closed. Keep away from heat, sparks, and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping, or stacking.

Typical Physical Properties	
Physical appearance	Solid
Odor	Sweetish
Specific gravity	1.20 to 1.25

Product Name	Median Particle Size (D50), μm	Recommended Test Procedure
D-Grade 4 agent	2–5	Laser light scattering
D-Grade 10 agent	6–15	Laser light scattering
D-Grade 20 agent	12–25	Laser light scattering
D-Grade 40 agent	31–48	Laser light scattering
D-Grade 100 agent	90–110	Laser light scattering
D-Grade 250 agent	225–275	Dry sieve analysis