



AES DRILLING FLUIDS

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Revision 1.01

ENER-GS[†]

RESILIENT SYNTHETIC GRAPHITE

BENEFITS

- Performs as a wellbore strengthening agent or as lost circulation material.
- Reduces API and HPHT fluid loss to aid in stuck pipe prevention.
- Resiliency allows particles to expand or compress in fractures or pores without being dislodged or collapsed.

APPLICATIONS

- 4 - 8 lb/bbl (typical) or as recommended from upfront testing and modeling for wellbore strengthening.
- 15 - 30 lb/bbl (typical) for seepage losses or up to 50 - 100 lb/bbl (typical) for severe losses.
- 3 - 12 lb/bbl for lubricity.

PROPERTIES

- Appearance: Black powder
- Specific Gravity: 2.20 - 2.25
- Carbon content: > 99%

TREATMENT RECOMMENDATIONS

Lost circulation treatments will vary by severity. For seepage losses, 15 - 30 lb/bbl is recommended. In severe lost circulation scenarios, 50 - 100 lb/bbl may be required for pills or sweeps. To enhance lubricity, treatments range from 3 - 12 lb/bbl.

For a wellbore strengthening application, 4 - 8 lb/bbl of ENER-GS is typically included as part of an optimized blend of particles. Lab testing will aid to verify concentrations and appropriate blends for a target fracture width.

As with any lost circulation material, confirm that surface and downhole equipment will tolerate the distribution and concentration of particles present prior to use.

Particle Size Distribution
(typical, microns)

| | |
|-----------------|-----|
| D ₁₀ | 156 |
| D ₅₀ | 391 |
| D ₉₀ | 778 |

PACKAGING AND HANDLING

ENER-GS is available in 50 lb sacks. Handle ENER-GS as an industrial chemical wearing protective equipment and observing precautions as described in the Safety Data Sheet (SDS).



Under pressure, ENER-GS has the ability to compress and exhibit a resiliency that allows it to remain closely packed within fractures and pores across a wide range of drilling fluid densities and temperatures.



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