



**AES DRILLING FLUIDS**

## 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 without being dislodged or collapsed

## APPLICATIONS

- In lost circulation applications typical concentrations are 15-30 lb/bbl for seepage losses or up to 50-100 lb/bbl for severe losses
- 3-12 lb/bbl for lubricity
- As part of a wellbore strengthening treatment, 4-8 lb/bbl is typical

## PHYSICAL PROPERTIES

- Particle Size Distribution (Typical, microns)

D <sub>10</sub>	156
D <sub>50</sub>	391
D <sub>90</sub>	778

- Appearance: Black Powder
- Specific Gravity: 2.20–2.25
- Carbon Content: > 99%

# ENER-GS<sup>†</sup>

ENER-GS is a high performance resilient synthetic graphite designed to allow particles to expand or compress in fractures or pores without being dislodged or collapsed due to changes in differential pressures used for wellbore strengthening, lubrication and lost circulation.



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.

## Treatment Recommendations

ENER-GS is a resilient synthetic graphite added to drilling fluid systems to aid in wellbore strengthening, lost circulation control, or lubricity with minimal impact on rheology across a wide range of drilling fluid densities and temperatures.

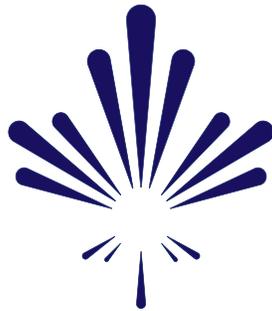
Lost circulation treatments vary by severity. 15-30 lb/bbl is typically used to address seepage losses, while severe losses may require 50-100 lb/bbl or more as pills or sweeps. To enhance lubricity, treatments range from 3-12 lb/bbl.

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.

## 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).



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