

# Binary foam fracturing services

## Reduce water use while optimizing stimulation

### Applications

- Hydraulic fracturing operations in low-pressure or water-sensitive reservoirs
- Hydraulic fracturing operations in areas where water use is limited due to environmental regulations or availability
- Multistage hydraulic fracturing where mechanical diversion is inadequate to ensure treatment of the full length of each stage

### Features and Benefits

- Low water requirement
  - Improves cleanup time from low-pressure wells
  - Minimizes formation damage
  - Limits environmental impact
- Low viscosity
  - Enables proppant transport
  - Reduces fluid loss to the formation, enabling deeper penetration
  - Enables diversion in long well segments
- Combination of N<sub>2</sub> and CO<sub>2</sub>
  - Reduces risks of thermal shock damage to tubulars and downhole equipment
  - Reduces risk of carbonic acid damage
  - Reduces pipe friction pressure

Baker Hughes controls proppant flowback and reduces crushing effects, resulting in improved fracture conductivity and long-term stimulation performance.

These additives are deformable particles, which are combined with proppants and fluids during fracture stimulation operations. As the formation closes, the proppants press into the deformable particles, cushioning them from damaging

stresses and locking them into place. This minimizes the risk of proppant flowback and fines generation.

### Safety

Compatibility testing is recommended prior to the job.

### Reference

System component MSDS

### Typical properties

Typical temperature range	90 to 275°F (32 to 135°C)
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