TenEx Technologies develops proprietary, materials-based technology solutions for the oil & gas industry. TenEx focuses on generating the lowest cost per barrel of oil using innovative and cost-effective products that can be tailored for every reservoir.





MICROHOLD™

MicroHOLD™ is an engineered microparticle slurry designed to penetrate and prop complex and extended shale microfracture networks which proppants can not access

How does MicroHOLD™ Work?

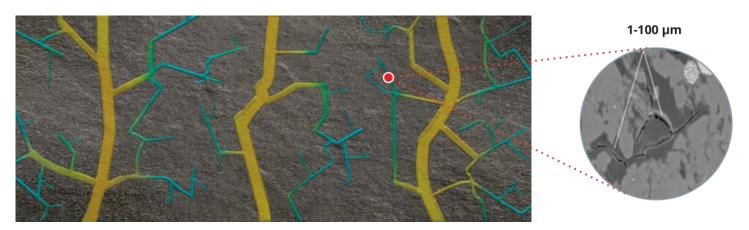
MicroHOLD™ is as an aqueous slurry containing ~50 wt% tailored microparticles made from glass-quality quartz. The microparticles are selectively engineered to prop the microfractures that other proppants are unable to access.

In addition to keeping these fractures open, the microparticles help reduce treatment fluid leak-off, which offers operational cost savings by reducing pump times and pressures, and they scour fracture entry-points, resulting in substantial production and operational benefits.

MicroHOLD™ uniquely targets a formation's microfracs

Extensive networks of microfractures (1–100 µm) exist in most shales, primarily located in organic-rich zones (see figure below). Up to 90% of the chemical and frac fluid can access the microfractures, but no proppant can — not even 200 mesh (74 μm).

Microfracs can contribute to initial production but only until they close, and they are directly linked to critical shale problems such as closure of unpropped fracs, pressure dependent leak-off, well communication, capillary-trapped oil, capillary water blockage, and more.



Microfractures in organic-rich zone - MicroHOLD™ is precisely sized to be able to access shale microfractures

TenEx Technologies develops specialty chemicals that reduce your cost per barrel.

For more information, please contact us at: sales@tenextechnologies.com or call us at 484-324-1316

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MicroHOLD™ delivers superior physical characteristics

MicroHOLD's superior crush strength allows it to perform under extreme closure pressures. Third-party laboratory testing has shown MicroHOLD™ (with mean particle size of 625M) experienced extremely low crush at 15,000 psi (see top figure to the right).

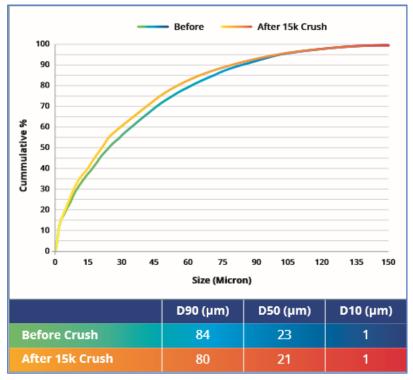
And, small particle size and the proprietary manufacturing process promotes a very low settling velocity, aiding in MicroHOLD™'s ability to deeply penetrate microfractures (see bottom figure to the right).

Superior application and cost efficiency

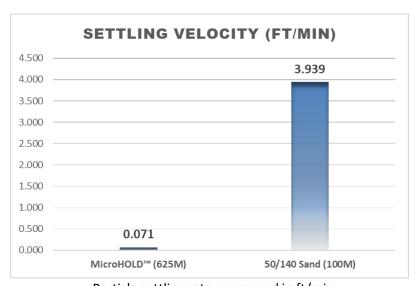
MicroHOLD™ offers important operational and safety benefits, including:

- Delivered as a slurry, so there are no dust or silica handling considerations
- Delivered to the wellsite via standard fluid containers
- Injected via standard chemical pumps
- Can be mixed on-the-fly with the pad fluid at low concentrations

MicroHOLD™ is also significantly less expensive than alternative ceramic microproppants.



Particle crush measurement as a function of pressure



Particle settling rate, measured in ft/min

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