Southern Premium™ Hydraulic Fracturing Sand



This Southern Premium™ quartz proppant is produced from the traditional southern sand deposits, such as the Hickory and Queen City Sand formations. Sand from these deposits has been used for decades in the oil and gas industry due to its close proximity to southern oil and gas drilling locations, such as the Permian Basin, Eagle Ford Shale and Haynesville Shale. Southern Premium™ sand can generally be delivered to the wellhead at lower cost than Northern White sand. For some wells, Southern Premium™ sand will produce a superior return on investment relative to Northern White deposits.

SUPERIOR VALUE



ADVANTAGES AND BENEFITS:

- Proppant specific gravity of 2.65 enables maximum suspension and lateral fracture placement.
- Enables enhanced hydrocarbon production for the LIFE of vour well®.

APPLICATIONS:

 All sandstone and fractured shale formations requiring high-strength quartz proppants.

- · Economic alternative to "Northern White Sand".
- Compatible with all hydraulic fracturing fluids.
- Meets or exceeds API RP-19C and ISO 13503-2 specifications for particle distribution, roundness and sphericity, turbidity, and solubility.
- Recommended for formations requiring high relative conductivity for effective fracture.

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES API RP-19C / ISO 13503-2

| Product | Mesh Size | Crush Resistance K-Value | Bulk Density g/cm³ | Particle Density g/cm³ | Typical Median Diameter D50 (mm) | Acid Solubility (%) | Roundness | Sphericity | Turbidity (NTU) |
|------------------|--------------|--------------------------------|--------------------------|------------------------------|--|---------------------------|-----------|------------|-----------------|
| Southern Premium | 20/40 | 5K | 1.48 - 1.60 | 2.64 - 2.66 | 0.608 - 0.612 | 1.7 | 0.6 | 0.7 | 10 - 110 |
| Southern Premium | 30/50 | 6K | 1.48 - 1.60 | 2.64 - 2.66 | 0.394 - 0.398 | 1.8 | 0.6 | 0.7 | 10 - 130 |
| Southern Premium | 40/70 | 6K | 1.48 - 1.60 | 2.64 - 2.66 | 0.276 - 0.280 | 1.8 | 0.6 | 0.7 | 10 - 130 |

CONDUCTIVITY

| | CONDUCTIVITY MD-FT at 150°F 2 LB/FT ² Closure Stress [PSI] | | | | | |
|------------------|--|-------|-------|-------|-------|--|
| Product | Mesh Size | 2,000 | 4,000 | 6,000 | 8,000 | |
| Southern Premium | 20/40 | 4,023 | 2,266 | 847 | 319 | |
| Southern Premium | 30/50 | 1,758 | 1,151 | 590 | 247 | |
| Southern Premium | 40/70 | 1,191 | 661 | 266 | 95 | |

PERMEABILITY

| | | PERMEABILITY DARCY at 150°F 2 LB/FT ² | | | | | |
|------------------|-------|--|-------|-------|-------|--|--|
| | Mesh | Closure Stress [PSI] | | | | | |
| Product | Size | 2,000 | 4,000 | 6,000 | 8,000 | | |
| Southern Premium | 20/40 | 217 | 128 | 51 | 20 | | |
| Southern Premium | 30/50 | 96 | 65 | 35 | 16 | | |
| Southern Premium | 40/70 | 67 | 37 | 15 | 5 | | |

Disclaimer: The information set forth in this Product Data Sheet represents typical properties of the product described; the information and the typical values.

Warning: The product contains respirable crystalline silica-quartz, which can cause silicosis (an occupational lung disease) and lung cancer



