

Premium Hickory® Hydraulic Fracturing Sand



U.S. Silica's Premium Hickory® quartz proppant is produced from the Hickory sandstone formation in Central Texas and is processed and sized at our plant in Voca, Texas.

Sand from this area has been used for decades in the Oil & Gas industry due to its close proximity to the Permian Basin and Eagle Ford shale formation. Sand from the Hickory formation is naturally more coarse than "Northern White" deposits and can generally be delivered to the well-head at lower cost. For some shallower wells, particularly in the Permian, sand from the Hickory Formation will produce a superior return on investment relative to Northern White deposits.



ADVANTAGES AND BENEFITS:

- Enables enhanced hydrocarbon production for the LIFE of your well®.
- Economic alternative to "Northern White Sand".
- Compatible with most hydraulic fracturing fluids.
- Meets or exceeds API RP - 19C and ISO 13503-2 specifications.

APPLICATIONS:

- All sandstone and fractures shale formations requiring high-strength quartz proppants
- 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/cm ³	Particle Density g/cm ³	Typical Median Diameter D50 (mm)	Acid Solubility (%)	Krumbein Shape Factors		
							Roundness	Sphericity	Turbidity (NTU)
Premium Hickory	16/30	4K	1.48 - 1.60	2.64 - 2.66	0.916 - 0.920	1.4	0.6	0.7	10 - 110
Premium Hickory	20/40	5K	1.48 - 1.60	2.64 - 2.66	0.608 - 0.612	1.7	0.6	0.7	10 - 110
Premium Hickory	30/50	6K	1.48 - 1.60	2.64 - 2.66	0.394 - 0.398	1.8	0.6	0.7	10 - 130
Premium Hickory	40/70	6K	1.48 - 1.60	2.64 - 2.66	0.276 - 0.280	1.8	0.6	0.7	10 - 130
Premium Hickory	100 Mesh	7K	1.48 - 1.60	2.64 - 2.66	0.165 - 0.185	1.8	0.6	0.6	10 - 150

CONDUCTIVITY

Product	Mesh Size	CONDUCTIVITY MD-FT at 150°F 2 LB/FT ²			
		Closure Stress [PSI]			
		2,000	4,000	6,000	8,000
Premium Hickory	16/30	7,299	2,919	11,012	445
Premium Hickory	20/40	4,023	2,266	847	319
Premium Hickory	30/50	1,758	1,151	590	247
Premium Hickory	40/70	1,191	661	266	95

PERMEABILITY

Product	Mesh Size	PERMEABILITY DARCY at 150°F 2 LB/FT ²			
		Closure Stress [PSI]			
		2,000	4,000	6,000	8,000
Premium Hickory	16/30	395	167	61	28
Premium Hickory	20/40	217	128	51	20
Premium Hickory	30/50	96	65	35	16
Premium Hickory	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 are not specifications. U.S. Silica Company makes no representation or warranty concerning the products, expressed or implied, by this product data sheet.

Warning: The product contains respirable crystalline silica-quartz, which can cause silicosis (an occupational lung disease) and lung cancer. For detailed information on the potential health effects of respirable crystalline silica - quartz, see the U.S. Silica Company Safety Data Sheet.

