

Titan™

Highest Strength and Conductivity

Data Sheet

Titan

At Saint-Gobain, we believe innovation is a continuous process that provides industry leading quality and value. Our commitment to innovation is the key that allowed us to break the ultra-high strength proppant norm barriers and go beyond. Introducing the new and improved, ultra-high strength – Titan.

Titan properties are unique – the specific gravity is similar to traditional sintered bauxites; the material is then enhanced with ultra-high strength, conductivity and endurance. By utilizing the industry's most proven proppant manufacturing process, the material achieves superior sphericity and roundness at industrial scale. This unique combination of properties gives our customers the highest performance/\$ ultra-high strength proppant on the market.

With extraordinary performance, Titan provides maximum well production and EUR with lower upfront cost, compared to other specialty ultra-high strength materials; therefore, Titan provides the highest return on investment.

Titan is available in Saint-Gobain's proven proprietary sieve distribution, V.

Titan, the optimal ultra-high strength proppant for your deepest wells, where closure stress and temperatures are immense and can exceed 20,000 psi and 400°F

Demand only the best. Demand Titan.

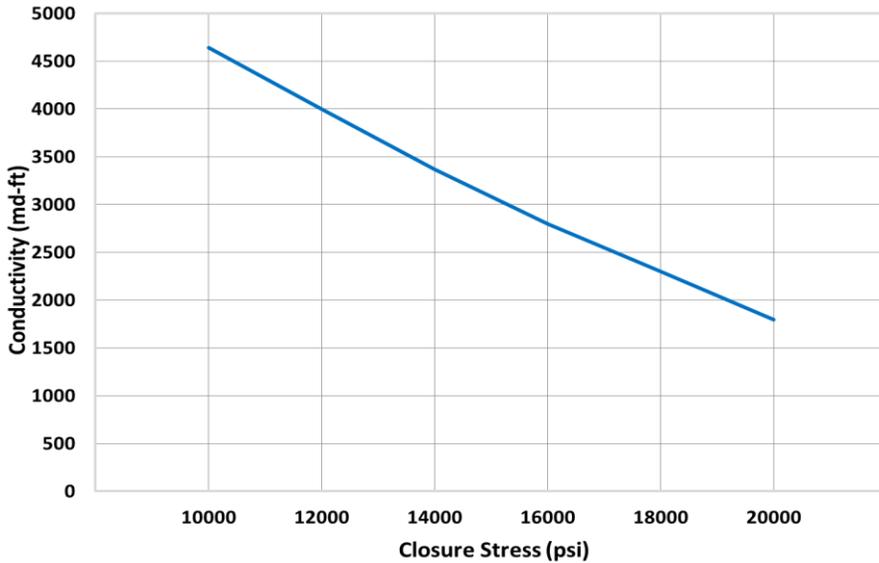


Titan™

Highest Strength and Conductivity

Data Sheet

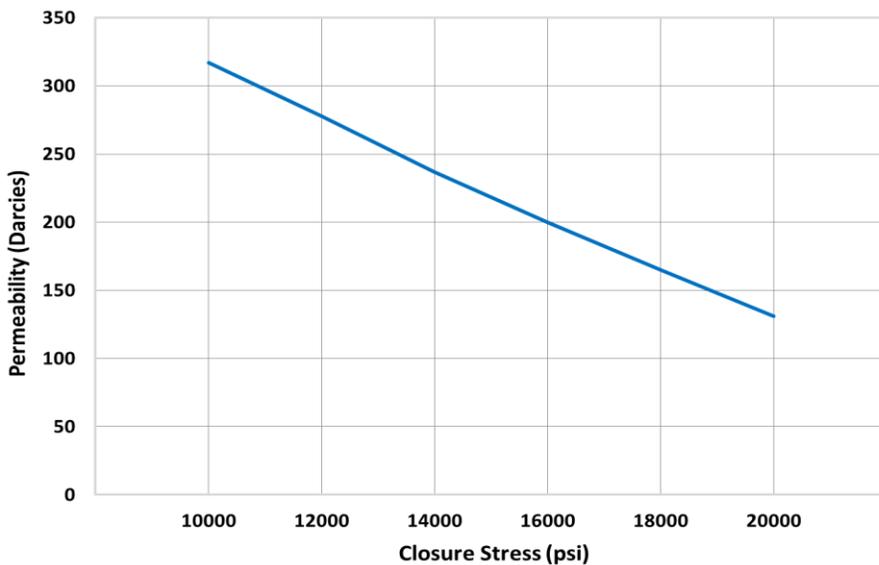
2 lb/ft², 250°F, with 2% KCl



Reference Conductivity (md-ft), 250°F

Closure Stress (psi)	Titan V, 2 lb/ft ²
10,000	4640
12,000	4000
14,000	3370
16,000	2800
18,000	2300
20,000	1795

2 lb/ft², 250°F with 2% KCl



Reference Permeability (Darcies), 250°F

Closure Stress (psi)	Titan V, 2 lb/ft ²
10,000	317
12,000	278
14,000	237
16,000	200
18,000	165
20,000	131

Physical Properties:

Specific Gravity	3.65
Bulk Density	2.19 g/cc (137 lb/ft ³)
Absolute Volume	0.0328 gal/lb
Acid Solubility, %	2.8
Roundness/Sphericity (Krumbein & Sloss)	0.9/0.9

Crush Resistance at Stress, %	10,000 psi	<1.0
	15,000 psi	<4.0
	20,000 psi	<7.0
Median Particle Dia.	0.74 mm	



Saint-Gobain Proppants
5300 Gerber Road
Fort Smith, AR 72904

Tel: 479.782.2001
Toll Free: 800.643.2149
Fax: 479.782.9984

www.proppants.saint-gobain.com

Disclaimer

Seller makes no warranty, expressed or implied, concerning the product or the merchantability or fitness thereof for any purpose, except that the product conforms to contracted specifications, and that the product does not infringe any valid United States or Canadian patent. No claim of any kind shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall seller be liable for incidental or consequential damages, whether buyer's claim is based on contract, breach of warranty, negligence or otherwise.