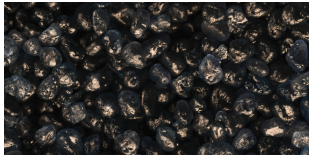


Technical Data Sheet

Yukon Black™ Proppants

Description



Yukon Black™ proppants are an innovative curable resin coated fracturing sand available in 16/30 and 20/40 mesh sizes. The Yukon Black resin system is designed specifically for low temperature reservoirs and is applied to high quality frac sand for superior performance. Incorporating Hexion's newest Stress Bond™ resin technology, the proppant bonds in the fracture with closure stress, providing high conductivity and proppant flowback control.

Typical Applications

Fracture treatments:

- At closure stress up to 55 MPa [8,000 psi]
- At bottom-hole static temperatures from 24 - 71°C [75 - 160°F]
- Where flowback control is necessary in low temperature reservoirs

Technical Advantages and Benefits

- Low temperature bonding down to 24°C [75°F] bottom-hole static temperature without the use of a low temperature consolidation aid
- Reduces proppant fines generation and migration
- Helps prevent proppant flowback
- Stress Bond technology helps prevent wellbore consolidation
- Frac fluid and beaker friendly

Typical Properties

Yukon Black™ Proppants

<https://hexioninternet-hexioninternet-slave.azurewebsites.net/en-US/product/yukon-black>

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Property	Value	Unit
Absolute Volume	0.390 [0.0467], 0.388 [0.0465]	cm ³ /g [gal/lb]
API Mesh Size	16/30, 20/40	
Bulk Density	1.49 [12.4], 1.51 [12.6]	g/cm ³ [lb/gal]
Color	greenish-black to black	
Compatibility	Fully compatible with most commonly used fracturing fluids, both water and oil-based systems. Testing with fluids prior to pumping is advised.	
Composition	resin coated frac sand	
Particle Size Distribution	meets or exceeds API RP 19C	
Physical State	solid granule	
Pipe Fill Factor	0.671 [0.0806], 0.662 [0.0794]	cm ³ /g [gal/lb]
Resin Type	thermosetting, curable	
Solubility in HCl/HF acid, API RP 19C	< / = 3	weight %
Specific gravity	2.56, 2.58	
Turbidity	< 250	NTU (FTU)

Technical Considerations

- Grain-to-grain contact must occur and closure stress must be applied during the cure period for proper bonding
- Consolidation of curable product at bottom-hole static temperatures below 24°C [75°F] is achieved by use of our AcTivator™ low temperature consolidation aid

Long-Term Conductivity

Stim-Lab, Inc. Consortium Long-Term Baseline Procedure

Proppant Concentration: 9.8 kg/m² [2 lb_m/ft²], Temperature: 66°C [150°F] [b_m/ft²], Temperature: 66°C [150°F]

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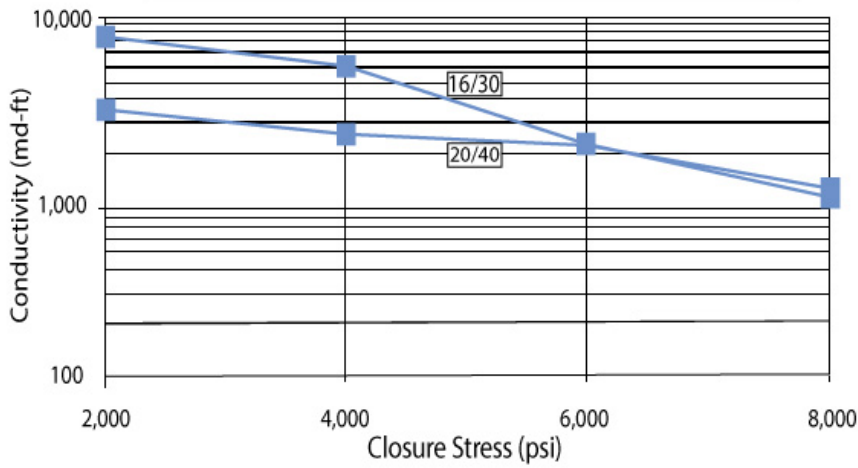
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Closure Stress (psi)	2,000	4,000	6,000	8,000
Size	Conductivity (md-ft)			
16/30	8,631	5,202	2,397	1,069
20/40	3,297	2,923	2,342	1,133



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