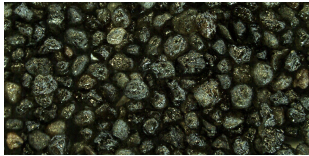


# Technical Data Sheet

## True North™ L Proppants

### Description



True North™ L proppants are an innovative curable resin coated sand available in a 20/40 mesh size. The True North L resin system is specifically designed for low temperature reservoirs. Incorporating Hexion's latest Stress Bond™ technology, the proppant bonds in the fracture with closure stress, providing high conductivity and proppant flowback control. Additionally, the resin system reduces dust generation during the pneumatic transfer\* and conveying process, which helps improve health and safety on location.

### Typical Applications

Fracture treatments:

- At closure stress up to 55 MPa [8,000 psi]
- At bottom-hole static temperatures from 21-71°C [70-160°F]
- Where flowback control is necessary in low temperature reservoirs

### Technical Advantages and Benefits

- Low temperature bonding down to 21°C [70°F] bottom-hole static temperature without the use of a low temperature consolidation aid
- Reduces proppant fines and migration
- Reduces dust generation\*
- Helps prevent proppant flowback and rearrangement
- Stress Bond technology helps prevent wellbore consolidation
- Frac fluid and breaker friendly

### Typical Properties

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True North™ L Proppants

<https://www.hexion.com/en-US/product/true-north-l>

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Property	Value	Unit
Absolute Volume	0.382 [0.0457]	cm <sup>3</sup> /g [gal/lb]
API Mesh Size	20/40	
Bulk Density	1.43 [11.9]	g/cm <sup>3</sup> [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	0.699 [0.0838]	cm <sup>3</sup> /g [gal/lb]
Resin Type	thermosetting, curable	
Solubility in Water, Brine & HCl	nil	weight %
Solubility in HCl/HF acid, API RP 19C	< 3	weight %
Specific gravity	2.62	
Turbidity	< 250	NTU (FTU)

\*Compared to uncoated frac sand. Pneumatic transfer pressure not to exceed 5 psi.

## 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 21°C [70°F] is achieved by use of Hexion's AcTivator™ low temperature consolidation aid

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