

Technical Bulletin

Resin Coated Proppants



kRT Voyager™ In-Basin Resin Coated Sand



Description

Hexion kRT Voyager™ proppants are a curable resin coated sand available in 40/70 and 100 mesh sizes. kRT Voyager proppants are an in-basin resin coated sand that controls proppant flowback in reservoirs down to 110°F and enhances conductivity.

Typical Applications

Fracture treatments:

- At closure stress up to:
 - 12,000 psi [83 MPa]
- At bottom-hole static temperatures* from:
 - 110 – 450°F [43 – 232°C]

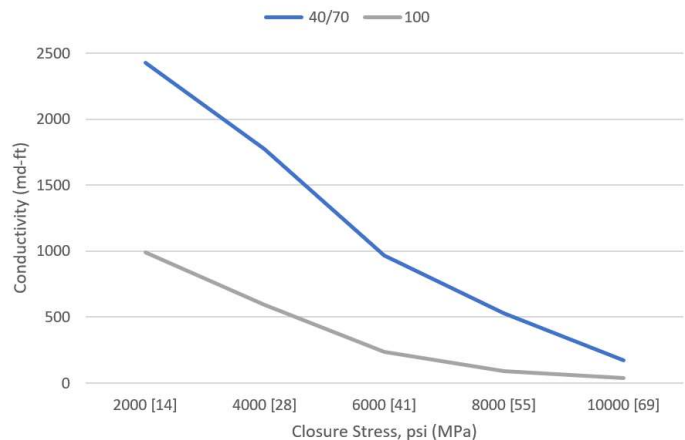
Technical Advantages and Benefits

- Enhanced conductivity
- Proppant flowback control
- Proppant fines reduction
- Cyclic stress resistance
- Minimizes proppant embedment
- Reduces respirable silica dust exposure below PEL limits

Conductivity

PropTester, Inc. Long-Term Baseline Procedure
Proppant Concentration: 2 lb_m/ft² [9.8 kg/m²], Temp: 150°F [66°C]

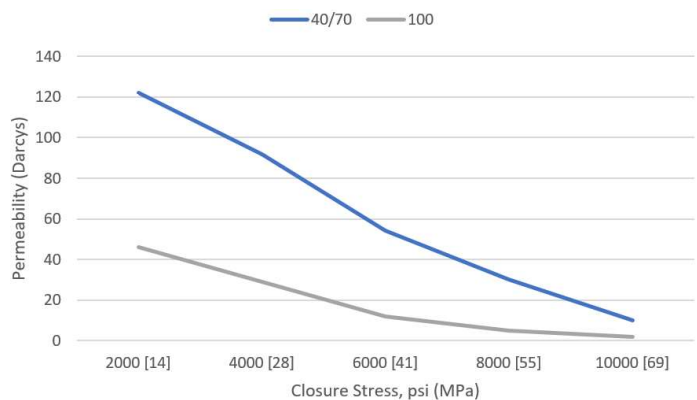
Closure Stress, psi [MPa]	2,000 [14]	4,000 [28]	6,000 [41]	8,000 [55]	10,000 [69]
Size	Conductivity (md-ft)				
40/70	2,429	1,775	969	528	171
100	992	593	236	92	40



Permeability

PropTester, Inc. Long-Term Baseline Procedure
Proppant Concentration: 2 lb_m/ft² [9.8 kg/m²], Temp: 150°F [66°C]

Closure Stress, psi [MPa]	2,000 [14]	4,000 [28]	6,000 [41]	8,000 [55]	10,000 [69]
Size	Permeability (Darcy)				
40/70	122	92	54	30	10
100	46	29	12	5	2



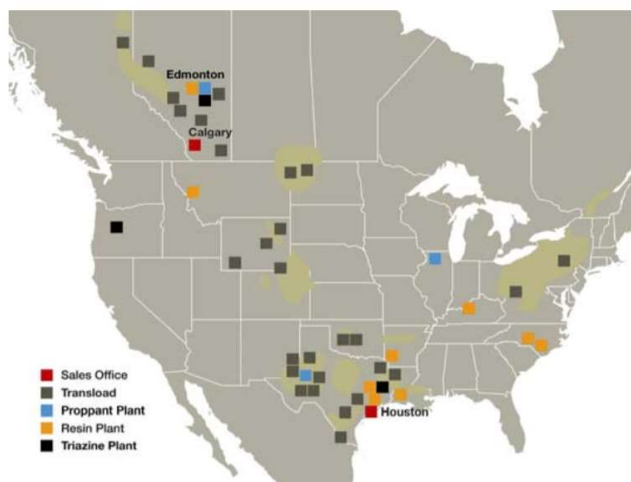
* Does not require a low temperature consolidation aid down to recommended temperatures.

Chemical Properties	Typical
Composition	resin coated, Permian Basin frac sand
Resin Type	thermosetting, curable
Color*	grayish to pinkish
Solubility, weight %	
in water, brine & HCl	0.0
in HCl/HF acid, API RP 19C	≤ 0.3
in oil	0.0

*May vary due to substrate hue variation. Color does not influence performance.

Physical Properties	Typical	
Mesh Size	40/70	100
Physical State	solid granule	
Specific Gravity	2.60	2.59
Bulk Density		
g/cm ³ [lb/gal]	1.32 [11.02]	1.31 [10.93]
Pipe Fill Factor		
cm ³ /g [gal/lb]	0.758 [0.091]	0.763 [0.091]
Specific Volume		
cm ³ /g [gal/lb]	0.385 [0.046]	0.386 [0.046]

North America Manufacturing and Distribution Network



Hexion continues to strategically locate transloads and proppant plants near the major shale plays in North America to meet the industry's need for resin coated proppants.



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