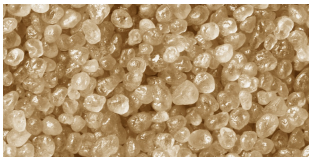
Technical Data Sheet

kRT™ Proppants

Description



Hexion's kRT™ proppants are a curable resin coated sand available in 16/30, 20/40, 30/50, 40/70, and 100 mesh sizes. kRT proppants are an economical resin coated sand that control proppant flowback in reservoirs down to 110˚F and enhance conductivity.

Typical Applications

Fracture treatments:

At closure stress up to:

- 8,000 psi [55 MPa] (16/30 and 20/40)
- 10,000 psi [69 MPa] (30/50 and 40/70)
- 12,000 psi [83 MPa] (100)

At bottom-hole static temperatures* from:

- 140 - 450°F [60 - 232°C] (16/30 and 20/40)
- 110 - 450°F [43 - 232°C] (30/50, 40/70 and 100)

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

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

Typical Properties

Property	Value	Unit
Specific Volume	0.381 [0.0457], 0.383 [0.0459], 0.382 [0.0458], 0.382 [0.0458], 0.383 [0.0459]	cm^3/g [gal/lb]
API Mesh Size	16,30, 20/40, 30/50, 40/70, 100	
Bulk Density	1.50 [12.6], 1.56 [13.0], 1.44 [12.0], 1.40 [11.7], 1.42 [11.9]	g/cm^3 [lb/gal]
Color	tannish to grayish	
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, northern white frac sand	
Particle Size Distribution	meets or exceeds API RP 19C	
Physical State	solid granule	
Pipe Fill Factor	0.665 [0.0796], 0.641 [0.0768], 0.694 [0.0832], 0.714 [0.0855], 0.704 [0.0840]	cm^3/g [gal/lb]
Resin Type	thermosetting, curable	
Solubility in Water, Brine & HCl	0.0	weight %
Solubility in HCl/HF acid, API RP 19C	< / = 3	weight %
Solubility In Oil	0.0	weight %
Specific gravity	2.62, 2.61, 2.62, 2.62, 2.61	
Turbidity	< 250	NTU (FTU)

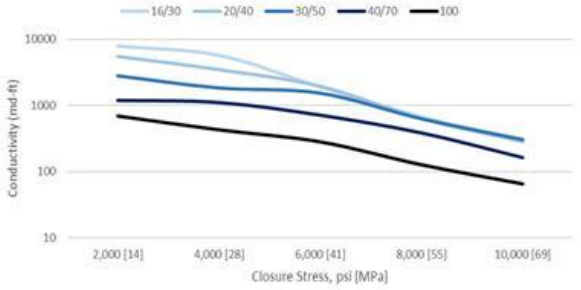
Technical Considerations

- Grain-to-grain contact must occur and closure stress must be applied during the cure period for proper bonding

Conductivity

PropTester, Inc. Long-Term Baseline Procedure
Proppant Concentration: 2 lb_m/ft^2 [9.8 kg/m^2], Temp: 250°F [121°C]

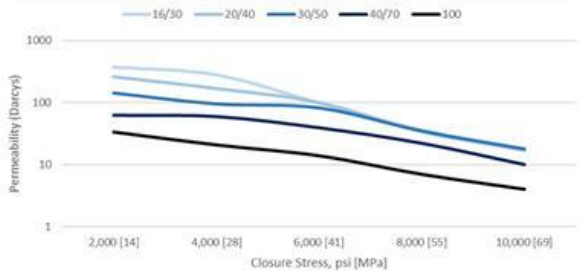
Closure Stress, psi [MPa]	2,000 [14]	4,000 [28]	6,000 [41]	8,000 [55]	10,000 [69]
Size	Conductivity (md-ft)				
16/30	7,967	5,758	1,910	670	296
20/40	5,471	3,451	1,934	633	282
30/50	2,790	1,828	1,524	623	302
40/70	1,191	1,103	711	384	163
100	698	431	283	127	65



Permeability

PropTester, Inc. Long-Term Baseline Procedure
Proppant Concentration: 2 lb_m/ft^2 [9.8 kg/m^2], Temp: 250°F [121°C]

Closure Stress, psi [MPa]	2,000 [14]	4,000 [28]	6,000 [41]	8,000 [55]	10,000 [69]
Size	Permeability (Darcy)				
16/30	376	281	99	36	17
20/40	261	169	100	34	17
30/50	142	95	82	35	18
40/70	62	59	39	22	10
100	34	21	14	7	4



Contact Information

Hexion
Oilfield Technology Group
15366 Park Row
Houston, Texas 77084 USA
+1 281 646 2800
www.hexion.com/oilfield

Customer Service
+1 800 626 2116
otg.customerservice@hexion.com

Technical Inquiries
otg.customerservice@hexion.com