

Resin Coated Proppants

**Black Ultra™
Ultra-Low Temperature Resin Coated Sand**



Description

Black Ultra™ proppants are available in 16/30, 20/40, 30/50, and 40/70 mesh sizes. These resin coated proppants utilize an advanced resin system, which bonds at low temperatures without the use of a consolidation aid for proppant flowback control.

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)
- At bottom-hole static temperatures* from:
 - 90 – 450°F [32 – 232°C]

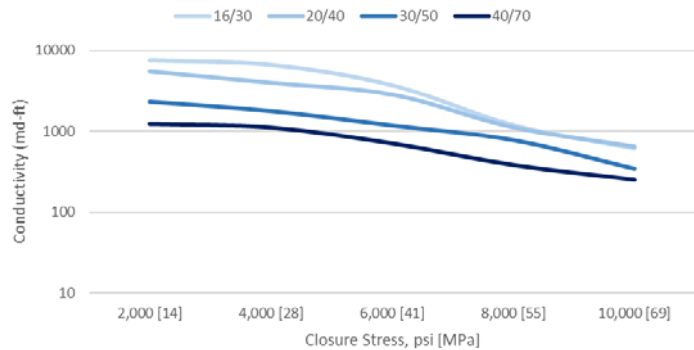
Technical Advantages and Benefits

- Proppant flowback control in low temperature reservoirs without consolidation aid
- High conductivity
- 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]

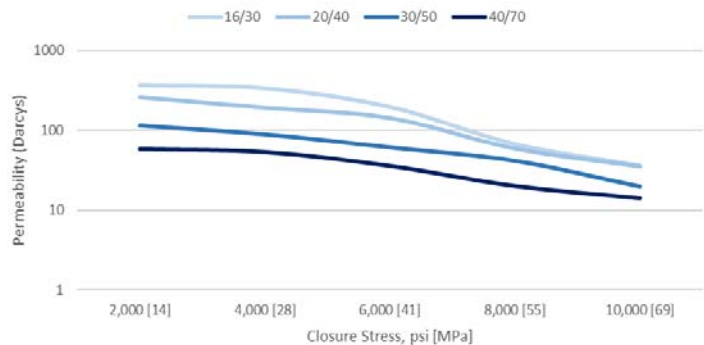
Closure Stress, psi [MPa]	2,000 [14]	4,000 [28]	6,000 [41]	8,000 [55]	10,000 [69]
Size	Conductivity (md-ft)				
16/30	7,841	6,575	3,697	1,189	615
20/40	5,449	3,941	2,811	1,109	637
30/50	2,315	1,778	1,185	779	346
40/70	1,227	1,107	704	383	252



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)				
16/30	365	333	195	67	36
20/40	260	192	142	59	35
30/50	116	90	62	42	20
40/70	59	54	36	20	14



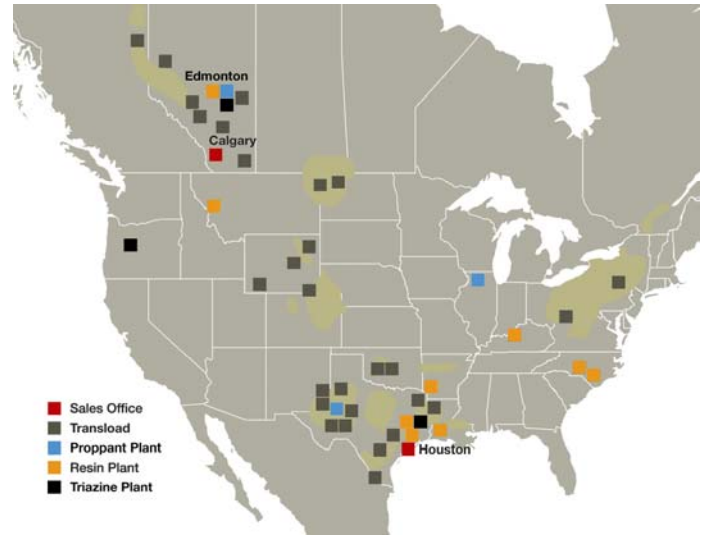
* Does not require a low temperature consolidation aid down to recommended temperatures

Chemical Properties	Typical
Composition	resin coated, northern white frac sand
Resin Type	thermosetting, curable
Color*	tan to reddish tan
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 white substrate hue variation. Color does not influence performance.

Physical Properties	Typical			
Mesh Size	16/30	20/40	30/50	40/70
Physical State	solid granule			
Specific Gravity	2.59	2.61	2.59	2.60
Bulk Density				
g/cm ³ [lb/gal]	1.46 [12.2]	1.53 [12.8]	1.48 [12.4]	1.47 [12.3]
Pipe Fill Factor				
cm ³ /g [gal/lb]	0.685 [0.0821]	0.654 [0.0784]	0.676 [0.0810]	0.681 [0.0816]
Specific Volume				
cm ³ /g [gal/lb]	0.386 [0.0463]	0.383 [0.0439]	0.386 [0.0463]	0.385 [0.0461]

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 increasing need for resin coated proppants.



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

For more information visit hexion.com/oilfield or fracline.com.

®, ™ and ™ denote trademarks owned or licensed by Hexion Inc.

© 2018 Hexion Inc. All rights reserved. 7/26/18

The information provided herein was believed by Hexion Inc. ("Hexion") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Hexion are subject to Hexion's terms and conditions of sale. HEXION MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY HEXION, except that the product shall conform to Hexion's specifications. Nothing contained herein constitutes an offer for the sale of any product.