

Resin Coated Proppants

OilPlus™ Proppants  
Premium Resin Coated Sand



Description

OilPlus™ proppants are an advanced curable resin coated fracturing sand available in 16/30, 20/40, 30/50 and 40/70 mesh sizes. OilPlus proppants are specifically designed for fracturing treatments in oil and liquid-rich reservoirs. Hexion’s unique resin coating system increases the relative permeability to oil in the proppant pack resulting in higher oil production compared to all conventional proppant types.

Typical Applications

Fracture treatments:

- At closure stress up to:
  - 8,000 psi [55 MPa] (16/30)
  - 10,000 psi [69 MPa] (20/40, 30/50 and 40/70)
- At bottom-hole static temperatures from 120 – 450°F [49 – 232°C]

Technical Advantages and Benefits

- Optimized well production for oil and liquid-rich shale reservoirs
- Increases the relative permeability to oil in the proppant pack
- Proppant flowback control
- Proppant fines reduction
- Cyclic stress resistance
- Minimizes proppant embedment
- Reduces respirable silica dust exposure below PEL limits

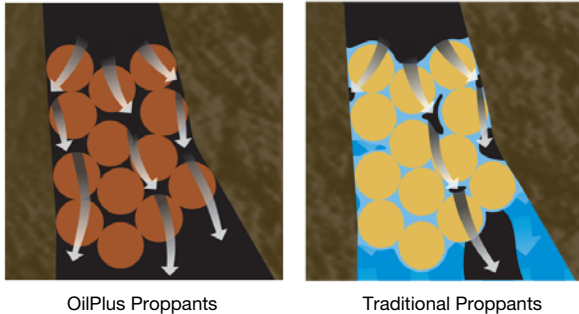
Chemical Properties	Typical
<b>Composition</b>	resin coated, northern white frac sand
<b>Resin Type</b>	thermosetting, curable
<b>Color*</b>	brown
<b>Solubility, weight %</b>	
in water, brine & HCl	0.0
in HCl/HF acid, API RP 19C	≤ 0.3
in oil	0.0

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

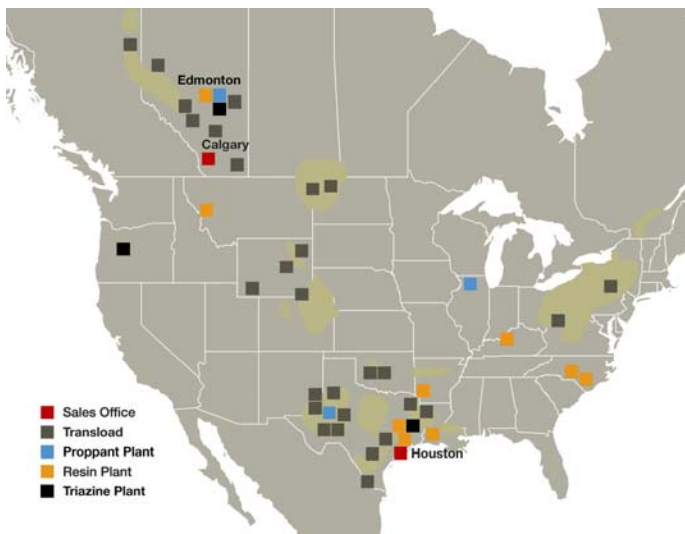
Physical Properties	Typical			
<b>Mesh Size</b>	16/30	20/40	30/50	40/70
<b>Physical State</b>	solid granule			
<b>Specific Gravity</b>	2.61	2.56	2.60	2.59
<b>Bulk Density</b>				
g/cm <sup>3</sup> [lb/gal]	1.47 [12.3]	1.46 [12.2]	1.45 [12.1]	1.45 [12.1]
<b>Pipe Fill Factor</b>				
cm <sup>3</sup> /g [gal/lb]	0.680 [0.0815]	0.685 [0.0821]	0.690 [0.0827]	0.690 [0.0827]
<b>Specific Volume</b>				
cm <sup>3</sup> /g [gal/lb]	0.383 [0.0459]	0.391 [0.0469]	0.385 [0.0461]	0.386 [0.0463]

## Oil Flow Through the Proppant Pack

Traditional proppants are hydrophilic in nature so water will adhere to the surface and block pathways for oil to flow. OilPlus proppants do not have an affinity for water so oil has clear pathways through the proppant pack. The surface chemistry has been altered to allow for higher oil flow rates.



## 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.

## OilPlus Proppant Case Study Results

OilPlus proppants have been pumped in over 1,000 wells covering every major basin in North America. The following shows some of the production case studies for OilPlus proppants. Wells for each study had similar characteristics, completion techniques, frac stages, and proppant volumes.

- **Permian Basin:** OilPlus proppants yielded a 49% increase in oil production compared to uncoated frac sand
- **Permian Basin:** OilPlus proppants yielded a 24% increase in oil production compared to traditional resin coated sand (RCS)
- **Eagle Ford:** OilPlus proppants yielded a 28% increase in oil production compared to traditional RCS
- **SCOOP:** OilPlus proppants yielded a 22% increase in oil production compared to traditional RCS
- **Bakken:** OilPlus proppants yielded a 24% increase in oil production compared to traditional RCS



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