

IMERYS ShaleProp™

US - Manufactured product Economy lightweight proppant

ENGINEERED

for optimal value.

DEVELOPED

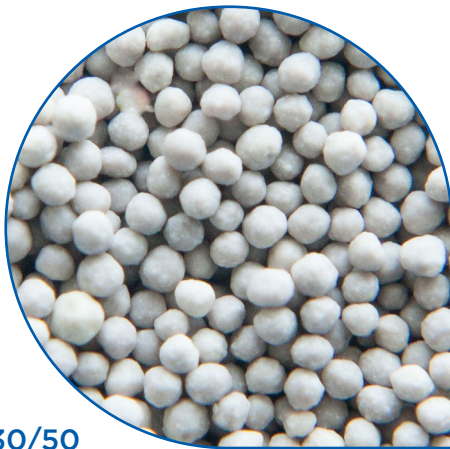
for waterfrac in tight shale formations.

DESIGNED

with superior transport and placement properties.



20/40



30/50

Typical Sieve Analysis *(weight % retained)*

US Mesh	Microns	ShaleProp™ 20/40	ShaleProp™ 30/50
+20 mesh	+840	2.5	
-20+30 mesh	-840+600	78.4	4.7
-30+40 mesh	-600+420	19.2	88.3
-40+50 mesh	-420+300		7.1

Median Particle Diameter (µm)

669

500

API / ISO Crush Test

@7,500 psi

7.0

5.0

% by weight fines generated

Typical Additional Properties of IMERYS ShaleProp™

Roundness	≥0.8
Sphericity	≥0.8
Bulk Density (lb/ft ³)	95 ± 5
Absolute Specific Gravity	2.65 ± 0.05
Absolute Volume (gal/lb)	0.045
Solubility in 12/3 HCl/HF Acid (% weight loss)	3-4

*Superior Performance
You Can Trust For
Your Unconventional
Challenges*



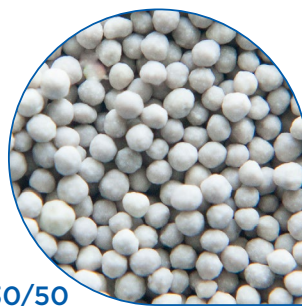
www.imerys-oilfieldsolutions.com

PERFORMANCE of IMERYS ShaleProp™

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20/40

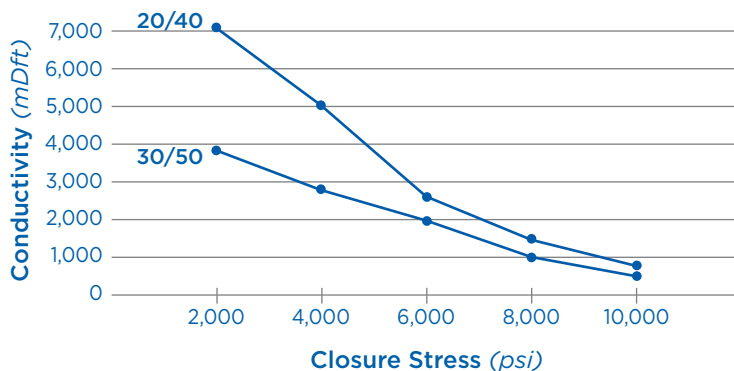


30/50

Long Term Conductivity*

2lb/ft² - 250°F - 2% KCL Water - Ohio Sandstone

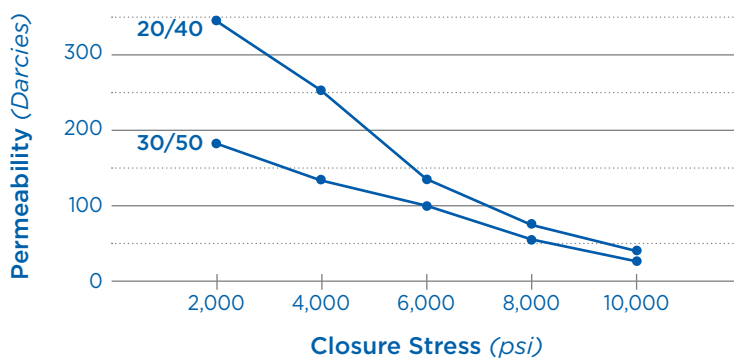
Closure Stress (psi)	ShaleProp™ 20/40	ShaleProp™ 30/50
2,000	7,145	3,815
4,000	5,100	2,774
6,000	2,591	1,964
8,000	1,419	1,108
10,000	665	533



Long Term Permeability*

2lb/ft² - 250°F - 2% KCL Water - Ohio Sandstone

Closure Stress (psi)	ShaleProp™ 20/40	ShaleProp™ 30/50
2,000	338	182
4,000	252	137
6,000	135	100
8,000	77	59
10,000	38	30



* Reference Conductivity and Permeability are measured, in accordance with API RP 19D / ISO 13503-5. All data measured by third party industry independent test laboratory in 2013.



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