



# BADGER MINING CORPORATION

## TECHNICAL DATA

### Atlas Precured Premium Resin Coated Proppant (PRC-P)

**ATLAS** Precured Premium Resin Coated (PRC-P) products are our strongest line of proppants and provide the conductivity you need out of a Premium product without the expense of a low or medium density ceramic. Our exclusive resin complex provides protection from harsh well conditions and reduces or eliminates fines migration in the fracture. The durable nature of our coating significantly reduces embedment versus uncoated propping agents like hard ceramic proppants, and because our coating is non-reactive it reduces scale formation. All products from Atlas are coated on a premium Northern White sand substrate.

- PRC-P is our Premium line of Precured Proppant and is 3.5 - 3.8% resin by weight
- PRC-P products utilize exclusive, very coarse cuts of Northern White frac sand for increased conductivity

TESTS - UNITS	TYPICAL PROPERTIES
Krumbein Shape Factor-Sphericity	0.7-0.8
Loss on Ignition	3.5%-3.8%
Turbidity (NTU)	< 200
Acid Solubility	< 0.3%
Absolute Volume (gal/lb)	.046-.048
Particle Size Distribution	Meets or exceeds API RP-56
Color	Gold
Physical State	Free Flowing Solid

API Mesh Size	16/30	20/40	30/50	40/70
Bulk Density (lb/cu.ft)	100.51	100.51	99.90	99.26
Specific Gravity	2.60	2.60	2.50	2.50
<b>Unconfined Compressive Strength:</b>				
Crush Resistance at 8,000 psi	<=4%	<=2%	<=2%	<=1%
Crush Resistance at 10,000 psi			<=3%	<=2%
pH Water Extract ml (Buffer)			9 ml	9 ml

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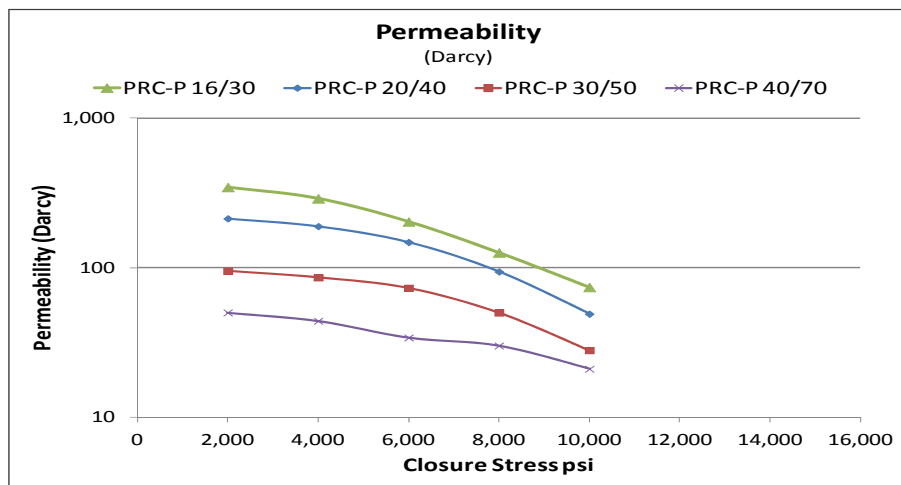
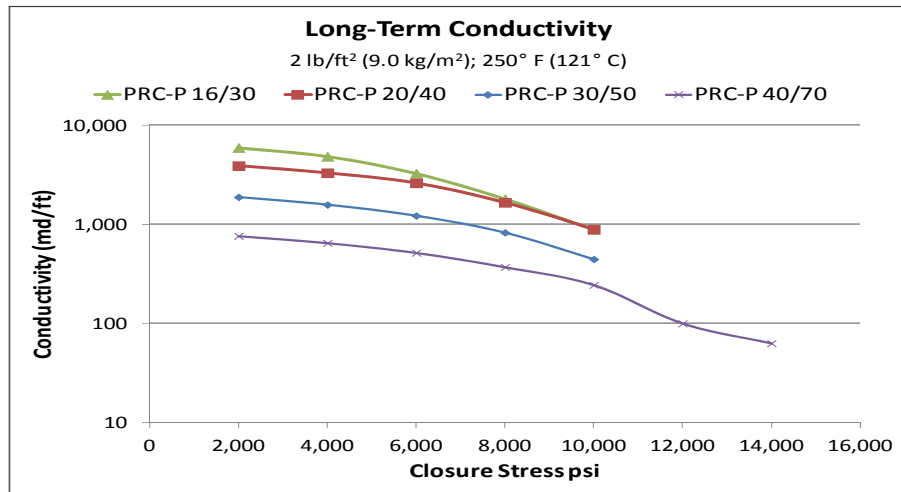
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CONDUCTIVITY							
MD-FT AT 2 lb/ft <sup>2</sup> (9.8 kg/m <sup>2</sup> ); 250°F (121°C)							
	Closure Stress psi						
	2,000	4,000	6,000	8,000	10,000	12,000	14,000
PRC-P 16/30	5,929	4,840	3,262	1,809	884		
PRC-P 20/40	3,904	3,297	2,610	1,657	893		
PRC-P 30/50	1,883	1,576	1,220	825	445		
PRC-P 40/70	762	648	516	370	244	100	63

PERMEABILITY							
Darcy							
	Closure Stress psi						
	2,000	4,000	6,000	8,000	10,000	12,000	14,000
PRC-P 16/30	345	290	203	126	74		
PRC-P 20/40	213	189	148	94	49		
PRC-P 30/50	95	86	73	50	28		
PRC-P 40/70	50	44	34	30	21		

\* Data points represent the median value of accumulated Stim-Lab data



Silica Sand and Resin-Coated Silica Sand Products  
DANGER



These products have been classified, following the Globally Harmonized System (GHS) of Classifying and Labeling Chemicals criteria, as a Category 1A Carcinogen, a Category 1 Specific Target Organ Toxicity (following repeated exposures), and a Category 2B Eye Irritant. For Industrial Use Only. DO NOT USE THIS PRODUCT FOR BLASTING OR AS AN ABRASIVE. DO NOT PNEUMATICALLY UNLOAD THE RESIN-COATED SILICA SAND PRODUCTS AT A PRESSURE EXCEEDING 5 PSI SO AS TO AVOID ABRADING THE PRODUCT. DO NOT BREATHE DUST.

Read the specific Safety Data Sheet (SDS) before using and follow applicable local, state and federal health and safety standards. The SDSs for the products are available online at [www.badgerminingcorp.com](http://www.badgerminingcorp.com) or by calling 1-800-932-7263. February 11, 2015 Revision D