

TECHNICAL DATA SHEET

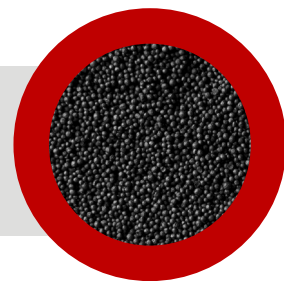
PROPPANTS TECHNICAL DATA



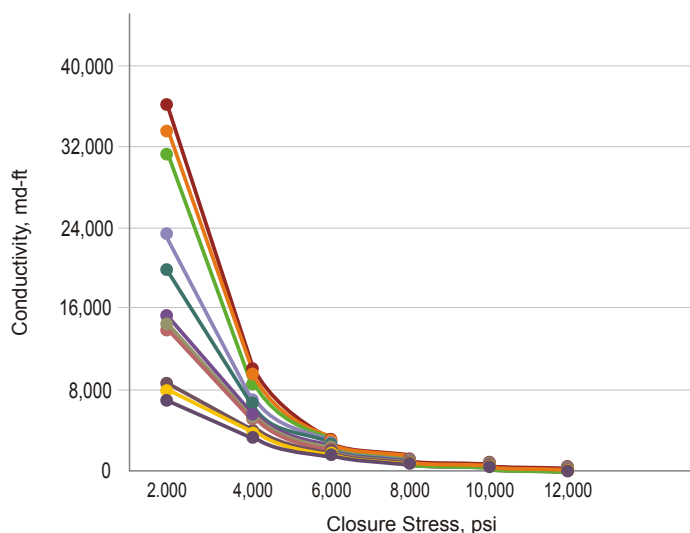
Properties	Sieves	LWP												
		8/16			10/20			16/30			20/40			
		R1	R2	R3	R1	R1.5	R2	R3	R1	R2	R3	R1	R2	R3
% Retained														
Sieve Analysis	# 8	1	1	2										
	# 10	3	5	7										
	# 12	16	20	21				1						
	# 14	79	72	68	20	13	15	23						
	# 16	1	2	2	34	35	31	35	3	7	6			
	# 18				28	33	32	26	37	38	38			
	# 20				13	16	18	11	50	39	45	2	5	1
	# 25								8	13	9	32	44	28
	# 30				5	3	4	4	2	3	2	42	43	45
	# 35											23	7	25
	# 40											1	1	1
Fines		0	0	0	0	0	0	0	0	0	0	0	0	
Mean Diameter	mm	1.622	1.654	1.682	1.210	1.180	1.180	1.239	0.986	1.000	1.002	0.674	0.720	0.666
Sphericity & Roundness	-	0.88x 0.82	0.83x 0.77	0.82x 0.70	0.87x 0.78	0.84x 0.81	0.85x 0.82	0.86x 0.74	0.87x 0.88	0.81x 0.78	0.85x 0.88	0.88x 0.73	0.84x 0.80	0.87x 0.71
Bulk Density	g/cm ³	1.55	1.57	1.60	1.54	1.53	1.58	1.57	1.48	1.53	1.52	1.50	1.55	1.51
	lb/ft ³	97	98	100	96	96	99	98	93	96	95	94	97	94
Apparent Density	g/cm ³	2.80	2.80	2.90	2.83	2.76	2.88	2.98	2.70	2.85	2.86	2.85	2.87	3.00
Absolute Density	g/cm ³	3.11	3.16	3.18	3.10	3.12	3.04	3.24	2.81	2.89	2.94	3.08	3.04	3.21
Acid Solubility	(HCl+HF)%	6.1												
Crush Resistance Stress psi, % fines	5,000	32.3	33.2	29.5	18.4	21.8	23.1	19.7	12.8	16.0	15.4	7.0	5.4	7.3
Chemical Composition, %	Al ₂ O ₃	62.8												
	SiO ₂	21.5												
	Fe ₂ O ₃	11.7												
	TiO ₂	1.3												
	Other	2.7												

Typical data measured in accordance with ISO 13503-2 and 13503-5





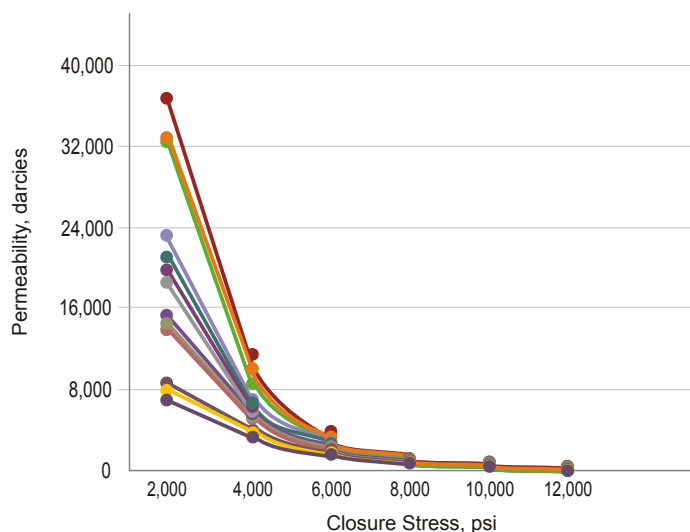
TECHNICAL DATA SHEET PROPPANTS TECHNICAL DATA



SinterProLite Lock - Conductivity

md-ft - 2% KCl - 2lb/ft² @250° F

	2,000	4,000	6,000	8,000	10,000	12,000
# 8/16 R1	33,521	8,694	2,682	988	415	176
# 8/16 R2	31,676	9,715	3,091	1,154	491	208
# 8/16 R3	36,050	10,015	3,054	1,069	381	107
# 10/20 R1	23,498	7,671	2,550	806	336	144
# 10.20 R1.5	19,979	6,914	2,253	922	339	173
# 10/20 R2	19,620	6,944	2,338	843	383	169
# 10/20 R3	19,818	6,374	2,343	863	339	139
# 16/30 R1	15,242	5,870	2,037	786	343	161
# 16/30 R2	15,063	6,580	2,324	835	351	157
# 16/30 R3	13,956	5,241	1,846	764	343	195
# 20/40 R1	8,452	4,252	1,431	637	310	171
# 20/40 R2	7,505	4,177	1,644	739	332	148
# 20/40 R3	7,163	3,555	1,418	663	333	143



SinterProLite Lock - Permeability

darcies - 2% KCl - 2lb/ft² @250° F

	2,000	4,000	6,000	8,000	10,000	12,000
# 8/16 R1	1,616	476	162	62	28	12
# 8/16 R2	1,638	574	199	80	37	16
# 8/16 R3	1,833	583	197	75	28	8
# 10/20 R1	1,151	422	152	52	23	10
# 10.20 R1.5	975	379	135	59	23	12
# 10/20 R2	931	350	125	48	23	11
# 10/20 R3	1,034	377	151	60	25	11
# 16/30 R1	738	315	120	50	23	11
# 16/30 R2	760	364	142	55	25	12
# 16/30 R3	692	290	111	49	23	14
# 20/40 R1	435	235	89	42	22	13
# 20/40 R2	397	238	103	49	24	11
# 20/40 R3	364	198	85	42	22	10

