

4 Documents

Publication numbers	Title	Current assignees
CA2880426 A1	Synthetic proppants and monodispersed proppants and methods of making the same	HALLIBURTON ENERGY SERVICES
WO200005302 A1	Composite proppant, filtration media, gravel packing media, and sports field media, and methods for making and using same	RESOLUTION PERFORMANCE PRODUCTS, ...
WO8503327 A1	Particulate ceramic useful as a proppant	KINETICO
WO200492254 A2	Particulate material containing thermoplastic elastomer and methods for making and using same	HEXION SPECIALTY CHEMICALS

Synthetic proppants and monodispersed proppants and methods of making the same CA2880426 A1

<u>Current assignees</u>	<u>IPC - International classification</u>		
HALLIBURTON ENERGY SERVICES*	C04B-035/00	C04B-035/01	C04B-035/111
OXANE MATERIALS	C04B-035/117	C04B-035/14	C04B-035/16
	C04B-035/18	C04B-035/185	C04B-035/19
<u>Inventors</u>	C04B-035/195	C04B-035/26	C04B-035/443
SKALA ROBERT D	C04B-035/515	C04B-035/56	C04B-035/58
FANG CHRISTOPHER Y	C04B-035/626	C04B-035/64	C04B-038/00
COKER CHRISTOPHER E	C09K-008/80*	E21B-043/267	
<u>Priority data including date</u>	<u>CPC - Cooperative classification</u>		
2012US-61678318 2012-08-01	C04B-035/00	C04B-035/01*	C04B-035/111/5
2013US-13952090 2013-07-26	C04B-035/117	C04B-035/14	C04B-035/16
2013US-13952110 2013-07-26	C04B-035/18	C04B-035/185	C04B-035/19
2013WO-US52203 2013-07-26	C04B-035/195	C04B-035/26	C04B-035/443
	C04B-035/515	C04B-035/56	C04B-035/58
	C04B-035/626/55	C04B-035/628/92	C04B-035/628/94
	C04B-035/64	C04B-038/00/9	C04B-2235/3201
	C04B-2235/3203	C04B-2235/3206	C04B-2235/3208
	C04B-2235/3232	C04B-2235/3272	C04B-2235/3472
	C04B-2235/36	C04B-2235/42	C04B-2235/528
	C04B-2235/5296	C04B-2235/5436	C04B-2235/5445
	C04B-2235/5463	C04B-2235/5481	C04B-2235/77
	C04B-2235/78	C04B-2235/784	C09K-008/80*
	C09K-008/80*/5	E21B-043/267	
	<u>PCL - US patent classification</u>		
	PCLO:	507269000*	507269000*
	PCLX:	507271000	507276000

Family					
CA2880426	A1	2014-02-06	CN104685023	A	2015-06-03
US2014038860	A1	2014-02-06	EP2880122	A2	2015-06-10
US2014038859	A1	2014-02-06	AU2013296818	B2	2015-12-10
WO2014022210	A2	2014-02-06	IN1591/DELNP/2015	A	2016-04-15
WO2014022210	A3	2014-09-12	RU2015106913	A	2016-09-27
AR091959	A1	2015-03-11	RU2605977	C2	2017-01-10
AU2013296818	A1	2015-03-12	US9663708	B2	2017-05-30
BR112015002164	A1	2015-03-31	BR112015002164	A2	2017-07-04
MX2015001526	A	2015-04-08	US9745507	B2	2017-08-29
KR20150040309	A	2015-04-14			

(EP2880122)

Synthetic ceramic proppants are described. Proppants having a monodispersity of 3-sigma distribution or lower are also described, including methods to make these proppants and methods of using these proppants.

Composite proppant, filtration media, gravel packing media, and sports field media, and methods for making and using same

WO200005302 A1

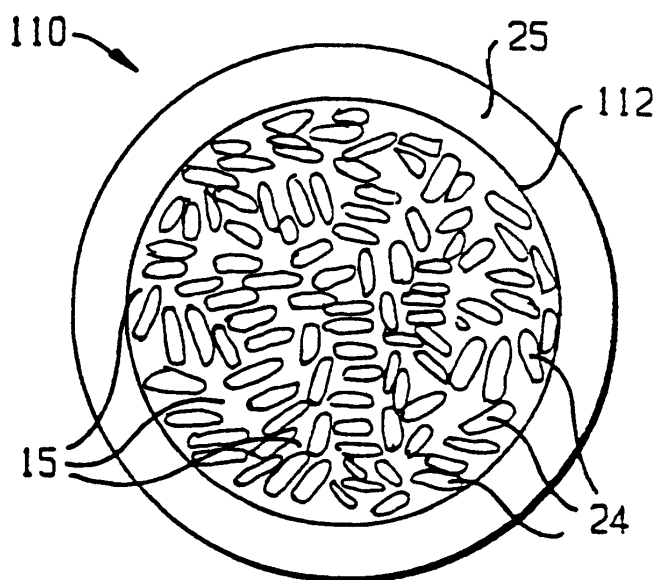
<u>Current assignees</u>		<u>IPC - International classification</u>			
BORDEN CHEMICAL		B01J-002/20	B05D-001/38*	B05D-007/00	
BORDEN CHEMICAL CANADA		B32B-005/16*	B32B-027/14	C02F-001/28	
BORDEN CHEMICAL FOUNDRY		C08J-005/04	C08K	C08K-007/04	
BORDEN CHEMICAL INTERNATIONAL		C08K-007/16	C08K-009/04	C08K-009/08	
BORDEN CHEMICAL INVESTMENTS		C09K	C09K-008/62	C09K-008/80	
HEXION		C09K-017/40	E01C-013/08	E21B	
HEXION CI HOLDING		E21B-033/13	E21B-043/267		
HEXION INTERNATIONAL		<u>CPC - Cooperative classification</u>			
HEXION INVESTMENTS		A63K-001/00	B01J-002/00/6	B01J-002/20	
HEXION SPECIALTY CHEMICALS		B32B-005/16	B32B-027/14	C08K-007/04	
HEXION SPECIALTY CHEMICALS RESEARCH		C09K-008/62	C09K-008/80*	C09K-008/80*/5	
HEXION US FINANCE		E01C-013/08	E21B-043/267	Y10T-428/2982	
HSC CAPITAL		Y10T-428/2991	Y10T-428/2993	Y10T-428/2996	
LAWTER INTERNATIONAL		Y10T-428/2998	Y10T-428/31612	Y10T-428/31663	
MOMENTIVE		Y10T-428/31667	Y10T-428/31942		
OILFIELD TECHNOLOGY		<u>PCL - US patent classification</u>			
RESOLUTION PERFORMANCE PRODUCTS		PCLO:	428402000*	428402000*	428402000*
RESOLUTION SPECIALTY MATERIALS		PCLX:	166295000	427136000	427181000
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			427215000	427221000	427222000
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			427393600	427397700	427422000
			427427400	427430100	427443200
			428404000	428406000	428407000
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			428454000	428524000	428688000
			428702000	428704000	523130000
			523132000	523139000	523145000
			523206000		523205000
<u>Inventors</u>					
MCDANIEL ROBERT R					
GERAEDTS JOHANNES A					
<u>Priority data including date</u>					
1998US-60093672	1998-07-22				
1999US-09450588	1999-11-30				
1999WO-US16507	1999-07-22				
2000US-09486144	2000-05-22				
2001US-09774881	2001-02-01				
2001WO-US14657	2001-05-07				

<u>Family</u>					
WO200005302	A1	2000-02-03	AR034122	A1	2004-02-04
CA2302688	A1	2000-02-03	CN1492803	A	2004-04-28
AU5318899	A	2000-02-14	BR0116857	A	2004-06-22
NO20001030	D0	2000-02-29	BRPI0116857	A1	2004-06-22
NO20001030	A	2000-05-19	CA2302688	C	2005-09-27
EP1023382	A1	2000-08-02	EP1368188	A4	2005-11-23
BR9906613	A	2000-09-19	EP1023382	B1	2006-03-08
BRPI9906613	A1	2000-09-19	AT319772	T	2006-03-15
EA200000346	A1	2000-10-30	DE69930268	D1	2006-05-04

ID25832	A	2000-11-09	DK1023382	T3	2006-06-26
CN1274376	A	2000-11-22	DE69930268	T2	2006-07-27
EP1023382	A4	2001-08-08	NO322849	B1	2006-12-11
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US6406789	B1	2002-06-18	BR9906613	B1	2010-03-23
WO02060681	A1	2002-08-08	EP1368188	B1	2010-04-28
CA2436725	A1	2002-08-08	AT465867	T	2010-05-15
EA002634	B1	2002-08-29	DE60141983	D1	2010-06-10
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US6582819	B2	2003-06-24	BRPI0116857	A2	2011-08-02
US6632527	B1	2003-10-14	CN1274376	B	2011-08-10
MXPA03006745	A	2003-10-24	HK1030228	A1	2012-02-17
EP1368188	A1	2003-12-10	BRPI0116857	B1	2016-03-01

(EP1368188)

Composite particles (10) made of a binder (15) and filler material (20) are provided for use in subterranean formations. The filler is typically finely divided mineral and optional fiber. The particles are useful as proppants to prop open subterranean formation fractures. The particles are also useful for water filtration and artificial turf for sports fields. Methods of making the composite particles are also disclosed.



Particulate ceramic useful as a proppant WO8503327 A1

<u>Current assignees</u> 3M KINETICO* <u>Inventors</u> GIBB, JAMES, L. LAIRD, JAMES, A. LEE, GEORGE, W. WHITCOMB, WILLIAM, C. <u>Priority data including date</u> 1984US-06571739 1984-01-18 1985WO-US00058 1985-01-16 1986US-06820013 1986-01-21	<u>IPC - International classification</u> C04B-035/19* C09K-008/80 E21B-043/267 <u>CPC - Cooperative classification</u> C04B-035/19* C09K-008/80 E21B-043/267* Y10S-507/924 Y10T-428/2991 Y10T-428/2996 Y10T-428/2998 <u>PCL - US patent classification</u> PCLO: 428403000* 264660000* PCLX: 166271000 166278000 166280200 264117000 264125000 428406000 428407000 501080000 501127000 501130000 501153000 507269000 507924000
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<u>Family</u> <table> <tr> <td>WO8503327</td><td>A1</td><td>1985-08-01</td><td>CA1232921</td><td>A</td><td>1988-02-16</td></tr> <tr> <td>AU3881985</td><td>A</td><td>1985-08-09</td><td>EP0168479</td><td>B1</td><td>1989-04-26</td></tr> <tr> <td>NO854970</td><td>A</td><td>1985-12-11</td><td>DE3569777</td><td>D1</td><td>1989-06-01</td></tr> <tr> <td>EP0168479</td><td>A1</td><td>1986-01-22</td><td>US4944905</td><td>A</td><td>1990-07-31</td></tr> <tr> <td>US4680230</td><td>A</td><td>1987-07-14</td><td>NO173752</td><td>B</td><td>1993-10-18</td></tr> <tr> <td>AU569373</td><td>B2</td><td>1988-01-28</td><td>NO173752</td><td>C</td><td>1994-01-26</td></tr> </table>						WO8503327	A1	1985-08-01	CA1232921	A	1988-02-16	AU3881985	A	1985-08-09	EP0168479	B1	1989-04-26	NO854970	A	1985-12-11	DE3569777	D1	1989-06-01	EP0168479	A1	1986-01-22	US4944905	A	1990-07-31	US4680230	A	1987-07-14	NO173752	B	1993-10-18	AU569373	B2	1988-01-28	NO173752	C	1994-01-26
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AU3881985	A	1985-08-09	EP0168479	B1	1989-04-26																																				
NO854970	A	1985-12-11	DE3569777	D1	1989-06-01																																				
EP0168479	A1	1986-01-22	US4944905	A	1990-07-31																																				
US4680230	A	1987-07-14	NO173752	B	1993-10-18																																				
AU569373	B2	1988-01-28	NO173752	C	1994-01-26																																				

(EP-168479)

A two-phase ceramic particulate useful as a proppant in hydraulic fracturing operations which comprises a vitreous matrix phase containing a crystalline alumina phase. The new ceramic particles are characterized by: (i) a concentration gradient of alumina which increases from very low in the centre to relatively high near the surface of the particles; (ii) a fired density less than about 2.9 g/cc; and (iii) closed cell microporosity. Certain embodiments of the inventive ceramic particulate are also characterized by a Krumbein roundness of at least 0.8 and are chemically stable. The ceramic is made by a process comprising the steps of: (a) mixing and pelletizing, with the aid of water, the dry raw materials including a mineral particulate such as nepheline syenite and a binder such as bentonite; (b) drying the wet pelletizer product; (c) mixing the dried pellets with a parting agent; and (d) firing the mixture of pellets and parting agent at sufficient temperature and for sufficient time to cause vitrification to occur.



Fig. 1

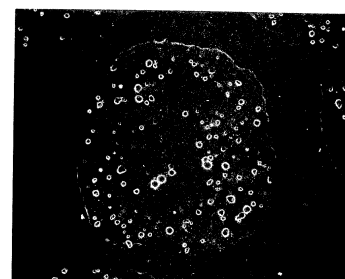


Fig. 2

Particulate material containing thermoplastic elastomer and methods for making and using same **WO200492254 A2**

Current assignees

BORDEN CHEMICAL
 BORDEN CHEMICAL CANADA
 BORDEN CHEMICAL FOUNDRY
 BORDEN CHEMICAL INTERNATIONAL
 BORDEN CHEMICAL INVESTMENTS
 HEXION
 HEXION CI HOLDING
 HEXION INTERNATIONAL
 HEXION INVESTMENTS
 HEXION SPECIALTY CHEMICALS*
 HEXION US FINANCE
 HSC CAPITAL
 LAWTER INTERNATIONAL
 MOMENTIVE
 OILFIELD TECHNOLOGY
 RESOLUTION PERFORMANCE PRODUCTS
 RESOLUTION SPECIALTY MATERIALS

Inventors

MCCRARY AVIS LLOYD

Priority data including date

2003US-60462694 2003-04-15
 2004US-10825087 2004-04-15
 2004WO-US11558 2004-04-15

IPC - International classification

B01J-002/30	B05D-007/00*	B22C-001/22
B32B	B32B-005/16*	B32B-009/00
C03C-012/00	C03C-017/32	C04B-035/628
C04B-041/48	C08J	C09C-003/10
C09C-003/12	C09K-008/516	C09K-008/80
E21B-043/04	E21B-043/267	

CPC - Cooperative classification

C01P-2006/20	C09C-003/10	C09K-008/80/5*
Y10T-428/2982	Y10T-428/2991	Y10T-428/2993
Y10T-428/2995	Y10T-428/2996	Y10T-428/2998

PCL - US patent classification

PCLO:	428402000*		
PCLX:	166295000	427214000	427221000
	427379000	428403000	428404000
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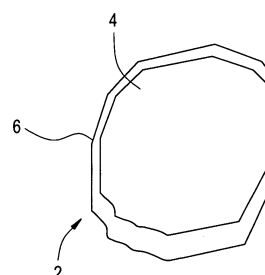
Family

WO2004092254	A2	2004-10-28	WO2004092254	A8	2006-05-26
CA2521007	A1	2004-10-28	RU2005135444	A	2006-06-10
US2005019574	A1	2005-01-27	CN1839034	A	2006-09-27
WO2004092254	A3	2005-06-23	US7270879	B2	2007-09-18
NO20054421	D0	2005-09-23	RU2344040	C2	2009-01-20
NO20054421	A	2005-11-15	CA2521007	C	2009-08-11
EP1615763	A2	2006-01-18	EP1615763	A4	2012-03-21
BRPI0409410	A	2006-04-25	BRPI0409410	A2	2013-12-03
BRPI0409410	A1	2006-04-25			

(EP1615763)

Disclosed herein is a particle comprising a particulate substrate; and a thermoplastic elastomer present on or in the substrate as an amount sufficient to improve the dust suppression of the particle above that which would occur if

FIG. 1



the thermoplastic elastomer was absent. Disclosed herein is a particle comprising a particulate substrate; and a thermoplastic elastomer, wherein the particle has a compressive strength retention of greater than about 50% as measured by a UCS test and a turbidity of about 10 to 200 NTU after a one hour ball mill test.