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(54) Title: HIGH STRENGTH PROPPANTS

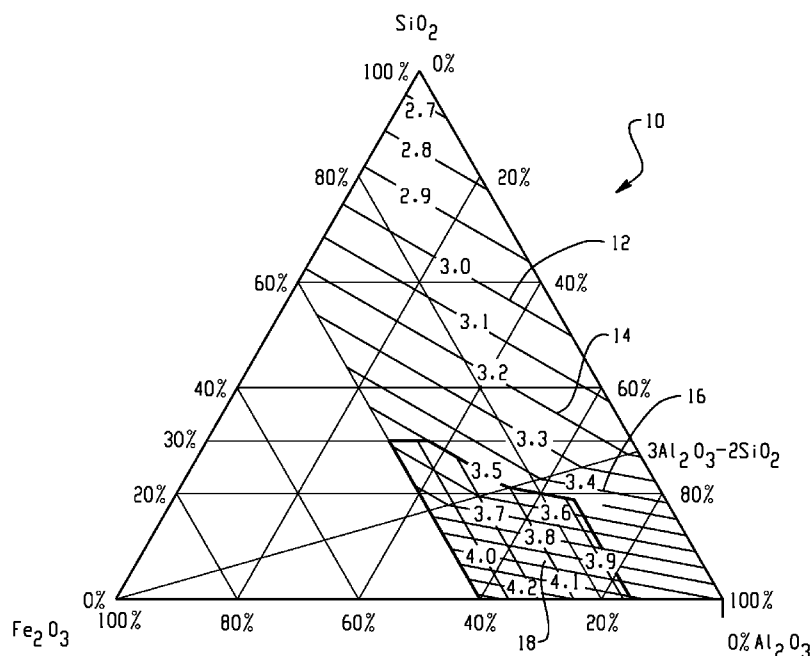


Fig. 1

(57) Abstract: A sintered ceramic particle made from a ceramic material having a true density greater than 3.5 g/cc and a composition having no more than 30 weight percent silicon oxide and at least 15 weight percent iron oxide, based on the combined weight of the oxides of aluminum, iron and silicon, is disclosed. A process that utilizes an externally applied compressive force to make a ceramic particle is also disclosed.



TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

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PCT/US2009/062832**A. CLASSIFICATION OF SUBJECT MATTER****C04B 35/14(2006.01)i, C04B 35/10(2006.01)i, C04B 35/26(2006.01)i, C04B 35/64(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC C04B 35/10 (2006.01)i, E21B 43/267 (2006.01)i, B32B 5/16 (2006.01)i, C04B 22/06 (2006.01)i

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: proppant, SiO₂, Fe₂O₃, Al₂O₃**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- A	CN 1699265 A (MIANCHI FANGYUAN CERAMSITE SAND FACTORY) 23 Nov. 2005 See Claim 1 and Page 6.	1-2, 5-7 ----- 3-4, 8-20
A	US 2008-0070774 A1 (SHMOTEV, SERGEY et al.) 20 March 2008 See Claims 1 and 8.	1 - 20
A	WO 2006-034298 A2 (HEXION SPECIALTY CHEMICALS INC.) 30 March 2006 See Claims 1 and 21-22.	1 - 20
A	KR 10-0427490 B1 (CMC KOREA CO., LTD.) 28 April 2004 See Claim 1.	1 - 20



Further documents are listed in the continuation of Box C.



See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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