

Title (en)
Polymer-gelled propellant and method for its production

Title (de)
Mittels Polymer gelierter Treibstoff und Verfahren zu seiner Herstellung

Title (fr)
Propergol gélifié par polymère et son procédé de fabrication

Publication
EP 1721881 A1 20061115 (EN)

Application
EP 06252111 A 20060418

Priority
US 12684505 A 20050510

Abstract (en)
A liquid propellant is converted to a gelled propellant by use of a nanogellant material having a three-dimensional polymeric structure that either is formed in the propellant itself, or is formed separately from the propellant and later dispersed in the propellant. In one form of the invention, the nanogellant material is bis-trimethoxysilylethane (BTMSE), which, when mixed with a suitable liquid propellant, such as monomethyl hydrazine (MMH), in the presence of water, polymerizes to form a gelled propellant with desirable properties. In the other form of the invention, the nanogellant is polymerized in a solvent separate from the propellant, and is then recovered from the solvent and redispersed in the propellant.

IPC 8 full level
C06B 47/00 (2006.01); **C06B 23/00** (2006.01); **C06B 47/08** (2006.01)

CPC (source: EP US)
C06B 23/001 (2013.01 - EP US); **C06B 47/00** (2013.01 - EP US)

Citation (search report)

- [X] US 3359144 A 19671219 - LEROY ATKINS BOBBY, et al
- [X] WO 9946023 A1 19990916 - BASF AG [DE], et al
- [A] WO 2005028604 A1 20050331 - GENENCOR INT [US], et al
- [A] WO 2005028603 A1 20050331 - GENENCOR INT [US], et al
- [A] WO 9845032 A1 19981015 - CABOT CORP [US]
- [A] US 3652349 A 19720328 - BARTICK HERBERT A
- [X] GESSER HYMAN D ET AL: "Aerogels and related porous materials", CHEM REV JUN 1989, vol. 89, no. 4, June 1989 (1989-06-01), pages 765 - 788, XP002396986
- [A] WAHAB MOHAMMAD A ET AL: "Bridged amine-functionalized mesoporous organosilica materials from 1,2-bis(triethoxysilyl)ethane and bis[(3-trimethoxysilyl)propyl]amine", J. SOLID STATE CHEM.; JOURNAL OF SOLID STATE CHEMISTRY OCTOBER 2004, vol. 177, no. 10, October 2004 (2004-10-01), pages 3439 - 3447, XP002396987
- [A] DATABASE CA [online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 12 May 1984 (1984-05-12), MUNJAL, N. L.: "Thixotropic cryogenic gels", XP002397262, retrieved from STN Database accession no. 98:218169 & INDIAN JOURNAL OF CRYOGENICS , 7(1), 19-24 CODEN: IJCRDD; ISSN: 0379-0479, 1982

Designated contracting state (EPC)
FR GB

Designated extension state (EPC)
AL BA HR MK YU

DOCDB simple family (publication)
EP 1721881 A1 20061115; US 2006254683 A1 20061116

DOCDB simple family (application)
EP 06252111 A 20060418; US 12684505 A 20050510