

## INFORME DE BÚSQUEDA DE PATENTES

**N° de solicitud: 16-142524-00000-0000**

**CRITERIOS PARA LA BÚSQUEDA (Anexar pantallazo o reporte en PDF, junto con los boléanos utilizados\*. Para el caso de secuencias, anexar alineamientos)**

|                                  |                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PALABRAS CLAVE UTILIZADAS</b> | Proppant+ and sand and copolymer and /PD<20131115<br>STAC=(copolymer) and PD=19800101:20131511 and IC=(C08) and STAC=(Proppant*) and STAC=(sand)<br>( (Proppant)/TI/AB/IW/CLMS/OBJ/TX AND (sand)/CLMS AND (butyl acrylate)/CLMS AND (styrene)/CLMS AND (acrylamide)/CLMS AND (hydroxyethyl methacrylate)/CLMS ) AND PD <= 2013-11-15 |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                    |                           |
|----------------------------------------------------|---------------------------|
| <b>CLASIFICACIONES UTILIZADAS PARA LA BÚSQUEDA</b> | CIP: C09K 8/00, C09K 8/80 |
|----------------------------------------------------|---------------------------|

CPC:

### DOCUMENTOS CONSIDERADOS RELEVANTES (documentos patentes, literatura no patente, etc...)

| Informes/Base de datos | N° de solicitud/<br>Autor** | Fecha de<br>Publicación/Presentación<br>(DD/MM/AAAA) | Reiv. afectadas (Con indicación, si procede, de las partes relevantes o números de secuencias) | Categorías especiales de los documentos citados*** |
|------------------------|-----------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------|
| SIPI (Obligatoria)     | 07116494                    | 02/11/2007                                           |                                                                                                | A                                                  |
|                        | 09084380                    | 12/08/2009                                           |                                                                                                | A                                                  |
|                        | 10092553                    | 29/07/2010                                           |                                                                                                | A                                                  |
|                        | 12159131                    | 14/09/2012                                           |                                                                                                | A                                                  |
| ISR                    | WO2013158306                | 24/10/2013                                           |                                                                                                | A                                                  |
|                        | WO2008131540                | 06/11/2008                                           |                                                                                                | A                                                  |
|                        | WO2013112251                | 01/08/2013                                           |                                                                                                | A                                                  |
|                        | WO2007147072                | 21/12/2007                                           |                                                                                                | A                                                  |
|                        | WO2006088603                | 24/08/2006                                           |                                                                                                | A                                                  |
| EPOQUENET              | CN101851496                 | 06/10/2010                                           |                                                                                                | A                                                  |
| SIPO                   | WO2008033343                | 20/03/2008                                           | 1 a 3, 10, 12, 13<br>(Rev. 1 - 3)                                                              | X                                                  |
|                        |                             |                                                      | 8<br>(Párr. 0128, 0130, Rev. 1, 2, 3)                                                          | Y                                                  |
| USPTO                  | US4417992                   | 29/11/1983                                           | 8<br>(Ejemplo II)                                                                              | Y                                                  |
|                        | US5714387                   | 03/02/1998                                           |                                                                                                | A                                                  |
|                        | US4594268                   | 10/06/1986                                           |                                                                                                | A                                                  |
| Patbase                | US4921902                   | 01/05/1990                                           |                                                                                                | A                                                  |
|                        | US2003102128                | 05/06/2003                                           |                                                                                                | A                                                  |
|                        | US2001034428                | 25/10/2001                                           |                                                                                                | A                                                  |
|                        | US2003114539                | 19/06/2003                                           |                                                                                                | A                                                  |
|                        | US2004045712                | 11/03/2004                                           |                                                                                                | A                                                  |
|                        | US2005019574                | 27/01/2005                                           |                                                                                                | A                                                  |
|                        | US2005016732                | 27/01/2005                                           |                                                                                                | A                                                  |
| Orbit                  | US20130157902               | 20/06/2013                                           |                                                                                                | A                                                  |
|                        | WO02070861                  | 12/09/2002                                           |                                                                                                | A                                                  |

\*\*\* Categorías especiales de documentos citados:

|                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>“A” documento que define el estado general de la técnica no considerado como particularmente relevante.</p> <p>“E” solicitud de patente o patente anterior pero publicada en la fecha de presentación internacional o en fecha posterior.</p> <p>“P” documento publicado antes de la fecha de presentación</p> | <p>“X” documento particularmente relevante; la invención reivindicada no puede considerarse nueva o que implique una actividad inventiva por referencia al documento aisladamente considerado.</p> <p>“Y” documento particularmente relevante; la invención reivindicada no puede considerarse que implique una actividad inventiva cuando el</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                 |                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| internacional pero con posterioridad a la fecha de prioridad reivindicada.                                      | documento se asocia a otro u otros documentos de la misma naturaleza, cuya combinación resulta evidente para un experto en la materia. |
| **** Indicar entre paréntesis la Autoridad que realizó la búsqueda o el informe preliminar Ejs: EPO, JP, INAPI. |                                                                                                                                        |

|                                                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------|--|
| <b>Literatura no patente</b><br><b>**Se incluye entre otros, toda la referencia de la literatura no patente.</b> |  |
|------------------------------------------------------------------------------------------------------------------|--|

|                                       |            |
|---------------------------------------|------------|
| <b>Fecha del reporte de búsqueda:</b> | 01/10/2018 |
|---------------------------------------|------------|

| Type | Nationality | Document Number | Publication Date | IPC Number | Involved Claims | Relate Page                                                                                       | Type of Document |
|------|-------------|-----------------|------------------|------------|-----------------|---------------------------------------------------------------------------------------------------|------------------|
| X    | CN          | 101535396       | 20090916         | C08K9/08   | 1、3、7-13        | 权利要求 1-2、说明书第 4 页倒数第 2 段、第 5 页第 2 段、第 13 页第 3 段、第 14 页倒数第 1 段、第 15 页第 2 段、倒数第 1、3 段、第 20 页第 1 段、第 | A                |

## Re Item V

### Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1** WO 2013/158306 A1 (SOANE ENERGY LLC [US]) 24 October 2013 (2013-10-24)
- D2** WO 2008/131540 A1 (TRICAN WELL SERVICE LTD [CA]; ZHANG KEWEI [CA]) 6 November 2008 (2008-11-06)
- D3** WO 2013/112251 A1 (PREFERRED UNLTD INC [US]) 1 August 2013 (2013-08-01)

| Número de Concesión / Certificado                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------|-------------------------------------------------------|--------------------------|-----------|-------------|--|--------|-----------------------|--|--------------------------|--------|-----------------------|--|--------------------------|--------|---------------|--|--------------------------|--------|-----------------------|--|--------------------------|--|-----------------------|--|--------------------------|---------|-----------------------|--|--------------------------|--------|-----------------------|--|--------------------------|
| Título                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | AGENTE*                                               |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Fecha de presentación                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | desde <input type="text"/> hasta <input type="text"/> | Número de prioridad               | <input type="text"/>                                  |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Fecha de orden de publicación                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | desde <input type="text"/> hasta <input type="text"/> | Fecha de prioridad                | desde <input type="text"/> hasta <input type="text"/> |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Fecha de Concesión                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | desde <input type="text"/> hasta <input type="text"/> | País de prioridad                 | <input type="text"/>                                  |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Fecha de Vencimiento para Anualidad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | desde <input type="text"/> hasta <input type="text"/> | Vigencia                          | desde <input type="text"/> hasta <input type="text"/> |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Fecha de publicación                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | desde <input type="text"/> hasta <input type="text"/> | Fecha de entrada en fase nacional | desde <input type="text"/> hasta <input type="text"/> |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Estado(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Seleccionar                                           |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Sector Tecnológico                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="text"/>                                  |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Tipo de solicitud                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="text"/>                                  |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Solicitante/Titular de la patente                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Apoderado                                             |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| <table><thead><tr><th>Número de identificación</th><th>Nombre(s)</th><th>Apellido(s)</th><th></th></tr></thead><tbody><tr><td>118622</td><td>RHOM AND HAAS COMPANY</td><td></td><td><a href="#">Suprimir</a></td></tr><tr><td>164446</td><td>ROHM [S] HAAS COMPANY</td><td></td><td><a href="#">Suprimir</a></td></tr><tr><td>119772</td><td>ROHM AND HAAS</td><td></td><td><a href="#">Suprimir</a></td></tr><tr><td>164450</td><td>ROHM AND HAAS COMAPNY</td><td></td><td><a href="#">Suprimir</a></td></tr><tr><td></td><td>ROHM AND HAAS COMPANY</td><td></td><td><a href="#">Suprimir</a></td></tr><tr><td>1015986</td><td>ROHM AND HAAS COMPANY</td><td></td><td><a href="#">Suprimir</a></td></tr><tr><td>119779</td><td>ROHM AND HAAS COMPANY</td><td></td><td><a href="#">Suprimir</a></td></tr></tbody></table> |                                                       |                                   |                                                       | Número de identificación | Nombre(s) | Apellido(s) |  | 118622 | RHOM AND HAAS COMPANY |  | <a href="#">Suprimir</a> | 164446 | ROHM [S] HAAS COMPANY |  | <a href="#">Suprimir</a> | 119772 | ROHM AND HAAS |  | <a href="#">Suprimir</a> | 164450 | ROHM AND HAAS COMAPNY |  | <a href="#">Suprimir</a> |  | ROHM AND HAAS COMPANY |  | <a href="#">Suprimir</a> | 1015986 | ROHM AND HAAS COMPANY |  | <a href="#">Suprimir</a> | 119779 | ROHM AND HAAS COMPANY |  | <a href="#">Suprimir</a> |
| Número de identificación                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Nombre(s)                                             | Apellido(s)                       |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| 118622                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RHOM AND HAAS COMPANY                                 |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| 164446                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ROHM [S] HAAS COMPANY                                 |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| 119772                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ROHM AND HAAS                                         |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| 164450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ROHM AND HAAS COMAPNY                                 |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ROHM AND HAAS COMPANY                                 |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| 1015986                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ROHM AND HAAS COMPANY                                 |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| 119779                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ROHM AND HAAS COMPANY                                 |                                   | <a href="#">Suprimir</a>                              |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| Con/Sin Oposición                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="text"/>                                  |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |
| <input type="button" value="Buscar"/> - <a href="#">Limpiar</a>   <a href="#">Búsqueda sencilla</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                       |                                   |                                                       |                          |           |             |  |        |                       |  |                          |        |                       |  |                          |        |               |  |                          |        |                       |  |                          |  |                       |  |                          |         |                       |  |                          |        |                       |  |                          |

#### 5 Casos asociados

| Expediente No.                                     | Título                                                                                                                                            | Figura Característica | Fecha de presentación | Estado(s)            | Titular                                              |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------------|------------------------------------------------------|
| <input type="checkbox"/> <a href="#">971164646</a> | COMPOSICIONES QUE CONTIENEN AGUA ENTRE UN 1 – 30%, SAL Y UN COMPLEJO QUE COMPRENDE UN CICLOPROPENO Y UN AGENTE DE ENCAPSULACIÓN MOLECULAR         |                       | 02 nov 2007           | Concedido            | AGROFRESH INC.                                       |
| <input type="checkbox"/> <a href="#">99084380</a>  | METODO PARA EL TRATAMIENTO DE BANANOS CON UN COMPLEJO DE AGENTE DE ENCAPSULAMIENTO MOLECULAR DE CICLOPROPENO                                      |                       | 12 ago 2009           | Caducado             | ROHM AND HAAS COMPANY                                |
| <input type="checkbox"/> <a href="#">10092553</a>  | TRATAMIENTO DE PLANTAS ORNAMENTALES CON UNA COMPOSICIÓN LÍQUIDA QUE COMPRENDE UN COMPLEJO DE CICLOPROPENO, COMO AGENTE DE ENCAPSULACIÓN MOLECULAR |                       | 29 jul 2010           | Concedido            | AGROFRESH INC.                                       |
| <input type="checkbox"/> <a href="#">12159131</a>  | COMPOSICIONES QUE CONTIENEN CICLOPROPENO Y AGENTE ENCAPSULANTE DISPERSADOS EN FASE CONTINUA NO ACUOSA Y MÉTODO PARA ELABORAR LAS MISMAS           |                       | 14 sep 2012           | Caducado             | ROHM AND HAAS COMPANY                                |
| <input type="checkbox"/> <a href="#">16142524</a>  | AGENTES DE SOSTÉN CON CONTROL DE POLVO MEJORADO                                                                                                   |                       | 31 may 2016           | Bajo Examen de Fondo | ROHM AND HAAS COMPANY<br>DOW GLOBAL TECHNOLOGIES LLC |

[Seleccionar todo](#) - [Ninguno](#)

Group I and Group III and IV lack unity of invention because even though the inventions of these groups require the technical feature of a proppant, this technical feature is not a special technical feature as it does not make a contribution over the prior art in view of US2014/0060832 (Mahoney). Mahoney teaches proppant coated with swellable emulsion polymers or latex polymers ([0014], [0068]) and a surfactant ([0088]).

EPOQUE Net V5.20 - Interactions: queries = 103, other = 99

Internal - Current DB: EPODOC - Search Recording ON

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Results in EPODOC 88.958.414

[SS 6] 1 and 2 and 4 and 5

Results in EPODOC 1

[SS 7] ..li

1/1 © EPODOC / EPO

PN - CN101851496 A 20101006

PNFP - CN101851496B B 20130313

PR - CN20091113417 20090814

AP - CN20091113417 20090814

DT - I

PA - (A B)  
XINJIANG DELAN CO LTD

TI - (A B)  
Novel high-efficient sand-carrying acid fracturing agent

AB - (A)  
The invention provides a high-efficient sand-carrying acid fracturing agent. The high efficiency is achieved by blending 15 to 20 weight parts of hydrochloric acid, 5 to 10 weight parts of organic

History - Internal

| Database | SS | Status | Results  | Query                          |
|----------|----|--------|----------|--------------------------------|
| EPODOC   | 1  |        | 4763     | PROPPANT+                      |
|          | 2  |        | 196421   | SAND                           |
|          | 3  |        | 0        | VINYL AROMATIC DIENE COPOLYMER |
|          | 4  |        | 317039   | COPOLYMER                      |
|          | 5  |        | 88958414 | /PD<20131115                   |
|          | 6  |        | 1        | 1 AND 2 AND 4 AND 5            |

☒ Keep dialog open

☐ Current Database ☒ All Databases

☐ Show metadata ☐ Expand rows (Cluster...)

Save as preparation Rank and View Send to Viewer Save as XFile

☐ Add to Current WL

Easy search

Menu Filter Explorer

2 results for ( (Proppant)/TI/AB/TW/CLMS/OB1/TX AND (sand)/CLMS AND (butyl acrylate)/CLMS AND (styrene)/CLMS )

Filter options

1st application year

After 2015 (0)

2011-2015 (1)

2006-2010 (0)

2001-2005 (1)

Before 2001 (0)

Assignee

HALLIBURTON ENERGY SERVICES (1)

RHODIA CHIMIE (1)

Litigations

Oppositions

IPC classification

US classification

1 High molecular weight low polydispersity polymers

US20130157802 2011-12-20 HALLIBURTON ENERGY SERVICES\*

The present invention relates to synthetic polymers having high molecular weights and low polydispersities and methods of synthesis. In one embodiment of the present invention, a polymer includes a polyacrylate polymer obtained from a polymerization reaction in which the polyacrylate polymer has a molecular weight of at least about 500,000 and a polydispersity index of about 1.25 or less.

2 Hydraulic fracturing fluid comprising a block copolymer containing at least one water-soluble block and one hydrophobic block

WO02070861 2001-02-20 RHODIA CHIMIE\*

The invention relates to a hydraulic fracturing fluid comprising an aqueous liquid, and a block copolymer containing at least one water-soluble block and one hydrophobic block and being particularly suited for use in high temperature ranges, greater than 180 DEG C.

High molecular weight low polydispersity polymers

conventional free-radical polymerization: unprotected free radicals

conventional living-radical polymerization: protected free radicals