

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2016/038466

International filing date (day/month/year)
21.06.2016

Priority date (day/month/year)
30.06.2015

International Patent Classification (IPC) or both national classification and IPC
INV. C09K8/52 E21B21/06

Applicant
DOW GLOBAL TECHNOLOGIES LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



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Date of completion of
this opinion

see form
PCT/ISA/210

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>2-11, 13-15</u>
	No: Claims	<u>1, 12</u>
Inventive step (IS)	Yes: Claims	<u>13</u>
	No: Claims	<u>1-12, 14, 15</u>
Industrial applicability (IA)	Yes: Claims	<u>1-15</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

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

Reference is made to the following documents:

- D1 US 2009/200013 A1 (CRASTER BERNADETTE [CA] ET AL) 13 August 2009 (2009-08-13)
- D2 US 2013/180714 A1 (NEVIN DONALD [US]) 18 July 2013 (2013-07-18)
- D3 US 2009/277625 A1 (BAI YUN [CA] ET AL) 12 November 2009 (2009-11-12)
- D4 US 5 196 124 A (CONNOR JOHN A [US] ET AL) 23 March 1993 (1993-03-23)
- D5 US 6 620 475 B1 (REYNOLDS JR HARRIS A [US] ET AL) 16 September 2003 (2003-09-16)cited in the application
- D6 US 4 171 238 A (DALTON JOHN J [US] ET AL) 16 October 1979 (1979-10-16)cited in the application
- D7 US 2009/236091 A1 (HAMMAMI AHMED [CA] ET AL) 24 September 2009 (2009-09-24)

Novelty (Art. 33(2) PCT)

The present application does not appear to meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1 & 12 does not appear to be new. The reasoning is as follows:

Document D1 (paragraph 0021- paragraph 0032; fig. 2, figs. 4, 5, 6 & 8; paragraphs 0044 & 0045) appears to be relevant with regard to the issue of the novelty of the subject-matter of claim 1, because D1 describes various embodiments of oil well pipes provided with an inner coating (resin layer), whereby said coating may contain a reactive agent, e.g. hydrogen sulphide reactive agent (see paragraph 0029), and the base structure is a fiber-reinforced composite material (see paragraph 0021 & 0022). Furthermore, the resin layer is cured so as to form a covalent bond between the coating and the base structure (see paragraph 0024) while providing a smooth

transition of properties between the coating and the resin matrix of the fiber-reinforced composite material (see paragraph 0026). Thus, it is submitted that the well components disclosed in D1 comprise a polymer-fiber-free-region free, which contains a substance for removing H₂S, a polymer-fiber-rich-region and a boundary region between the other two regions where the poly-fiber-rich-region is covalently bonded to the coating, i.e. integrally bound, (see also paragraphs 0044 & 0045). Thus, document D1 appears to be prejudicial to the novelty of at least claims 1 and 12 (Art. 33(2) PCT).

Inventive Step (Art.33(3) PCT)

The subject-matter of claims 2-11, 14 & 15 does not appear to involve an inventive step (Article 33(3) PCT). The reasoning is as follows:

claim 2: claim 2 is not clear (see Item VIII);

claim 3: whether the fibers are continuous or discontinuous seems to be of no particular importance;

claims 4-6: all possibilities appear to be covered;

claims 7-10: the features do not appear to be associated with a surprising technical effect;

claim 11: the use of BaSO₄ or MnO₂ to remove radium is known in the art (D4: col.5 & 6; claims 8 + 14 + 15).

claims 14 & 15: claims 14 and 15 are not clear (see Item VIII)

The subject-matter of claim 13 appears to involve an inventive step (Art. 33(3) PCT), because a process as defined in claim 13 is neither disclosed nor suggested by the available prior art.

Re Item VIII

Certain observations on the international application

The subject-matter of claim 2 does not fulfil the requirements of Article 6 PCT, because although claim 1, upon which claim 2 is dependent, stipulates that the fibers are polymer fibers, claim 2 refers glass and carbon fibers.

The subject-matter of dependent claim 14 is not clear (Art. 6 PCT), because claim 13 refers to applying the fibers onto the surface of a polymer-fiber-free gel layer disposed on the mandrel of a filament winding process, whereas claim 14 refers to a manual or an automatic lay-up method, which does not appear to be consistent with using a filament winding process.

Similarly, claim 15 refers to injection moulding, compression moulding and pultrusion - which does not appear to be consistent with using the mandrel of claim 13 (Art. 6 PCT).