

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

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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/US2019/048091

International filing date (day/month/year)
26.08.2019

Priority date (day/month/year)
31.08.2018

International Patent Classification (IPC) or both national classification and IPC
INV. C08L23/08 D01F8/06 C08K3/22

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>1-15</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-15</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

Item VIII.

It seems from the description in paragraph [0074] that the properties of the zinc oxide particles (D50 particle size, surface area and porosity) are essential to the definition of the invention.

Since independent claims 1 and 14 do not contain these features they do not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

Item V.

1 Cited documents:

Reference is made to the following documents:

- D1 EP 2 221 399 A1 (NOVEKO TRADING 2008 LLC [HU]) 25 August 2010 (2010-08-25)
- D2 WO 2006/011926 A1 (CRYOVAC INC [US]; SPEER DREW V [US] ET AL.) 2 February 2006 (2006-02-02)
- D3 WO 2017/093541 A1 (CRYOVAC INC [US]; SPIGAROLI ROMANO [IT]; STAFYLA EIRINI [IT]) 8 June 2017 (2017-06-08)

2 Novelty (Art. 33(2) PCT) and inventive step (Art. 33(3) PCT):

- 2.1 None of the cited documents discloses a fiber comprising an odor control composition, the composition comprising an olefin-based polymer and an odor suppressant containing a blend of an ionomer, zinc oxide particles and copper oxide particles. Consequently, the subject-matter of claims 1-15 is novel (Art. 33(2) PCT).
- 2.2 D1 (paragraph [0001]), which describes fibers and a fabric made from the fibers, which exhibit deodorizing function, is considered to represent the closest prior art. D1 (claim 10) discloses fibers prepared from a composition comprising 70-~~95~~% by weight of polyolefin and ~~5~~-30% by weight of functional particles made from at least one material, such as zinc oxide and/or cupric oxide. No composition comprising an ionomer, particles of zinc oxide and particles of copper oxide is disclosed in D1. The present application does not show any technical effect obtained with fibers as defined in claim 1. The examples do not

fall under the scope of the present claims (no *fibers* comprising an odor control composition are disclosed). Moreover, the use of zinc oxide, copper oxide and ionomers as methane thiol scavengers in polyolefin compositions is known from D2 (p. 8, l. 22, 27 and 29; p. 9, l. 1; p. 30, l. 12-14 and Table 8), which also suggests to use them in combination. In addition, the use of zinc oxide and ionomers as odor absorbing compounds in polyolefin compositions is also known from D3 (Tables 2 and 6-8). Therefore, the subject-matter of claims 1-15 does not involve an inventive step (Art. 33(3) PCT).