PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.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.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP2018/073538	31.08.2018	07.09.2017

International Patent Classification (IPC) or both national classification and IPC
INV. A24D1/02 ADD. A24F47/00

Applicant
PHILIP MORRIS PRODUCTS S.A.

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 43*bis*.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 notifed the International Bureau under Rule 66.1*bis*(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:	Date of completion of this opinion	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	see form PCT/ISA/210	Kirchmayr, Katrin Telephone No. +49 89 2399-0

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2018/073538

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 43*bis*.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 13*ter*.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 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.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 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-17
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-17
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-17
	No:	Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

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

1 Reference is made to the following documents:

D1 US 6 367 481 B1 (NICHOLS WALTER A [US] ET AL) 9 April 2002 (2002-04-09)

D4 US 2013/306085 A1 (SANCHEZ LUIS A [US] ET AL) 21 November 2013 (2013-11-21)

2 Document D1 is regarded as being the prior art closest to the subject-matter of claim 1 and discloses an aerosol-generating article 30 comprising:

an aerosol-forming substrate 42; and

an outermost wrapper 38 around at least a portion of the aerosol-forming substrate (see Figs. 2a-b, 3a-b), wherein an outer surface of the outermost wrapper forms at least part of an outer surface of the aerosol-generating article (see Figs. 2a-b, 3a-b) and wherein the outermost wrapper comprises a laminate (see Fig. 4) comprising a substrate layer and a metal layer radially outward of the substrate layer, the metal layer having a thickness of approximately 6,35 to 50 micrometers (see col. 4, l. 55 - col 5, l. 23).

The subject-matter of claim 1 therefore differs from this known article in that the outermost wrapper comprises a metallised substrate comprising a substrate layer and a metal layer radially outward of the substrate layer, the metal layer having a thickness of less than or equal to about 100 nanometres.

The technical effect obtained from the differentiating feature set out above can be seen in that the metal layer is considerably thinner than the prior art suggests. The problem to be solved by the present invention may therefore be regarded as how to reduce radiative and conductive heat losses arising during aerosol generation.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) as none of the available prior art documents discloses an aerosol-generating article comprising the features set out in said claim.

Considering document D1, the skilled person has no reason to modify the article disclosed therein to obtain an article as in present claim 1; in fact, D1 teaches away from the use of a considerably thin foil as this may advantage

discoloration (see col. 5, l. 13-15). Even if the skilled person were to choose a thinner foil, he would not necessarily arrive at a metal layer specifically having a thickness of less than or equal to about 100 nanometres.

Indeed, document D4 discloses the concept of providing a metallised foil, notably by using physical vapour deposition as in the present application; however, the resulting metal coating has a thickness of about 500 nanometres. Thus, even when combining D1 with D4, for which the skilled person has no motivation, he would not arrive at the subject-matter of claim 1.

3 Claims 2-17 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step (Article 33(1)-(3) PCT).

Re Item VII

Certain defects in the international application

4 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

5 Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from D1 being placed in the preamble (Rule 6.3(b)(i) PCT) and the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT). In the present case, the following features are known in combination from D1 and belong in the preamble of such a claim:

An aerosol-generating article comprising:
an aerosol-forming substrate; and
an outermost wrapper around at least a portion of the aerosol-forming substrate, wherein an outer surface of the outermost wrapper forms at least part of an outer surface of the aerosol-generating article.

Re Item VIII

Certain observations on the international application

6 The subject-matter described on p. 1, first sentence does not fall within the scope of the claims. This inconsistency between the claims and the description leads to doubt concerning the matter for which protection is sought, thereby rendering the claims unclear (Article 6 PCT).

7 The same reasoning applies to the subject-matter described on p. 13, last paragraph, p. 15, third paragraph and p. 25, fifth last paragraph, concerning further aspects of the invention. Moreover, numerous passages throughout the description state that aerosol-generating articles according to the invention may comprise certain elements or properties which do not fall within the scope of the claims, thereby rendering the claims unclear (Article 6 PCT).