

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference FIN0001	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2018/066813	International filing date (<i>day/month/year</i>) 22 June 2018 (22-06-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 29 June 2017 (29-06-2017)
Applicant VALEO MATERIAUX DE FRICTION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out 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))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

- as suggested by the applicant
 as selected by this Authority, because the applicant failed to suggest a figure
 as selected by this Authority, because this figure better characterizes the invention

b. none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2018/066813

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: **5(completely); 1-4, 6-19(partially)**
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/066813

A. CLASSIFICATION OF SUBJECT MATTER
INV. F16D69/02
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
F16D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013/048627 A1 (FEDERAL MOGUL CORP [US]; SUBRAMANIAN VIJAY [US]) 4 April 2013 (2013-04-04) claims 1,2,12-16 paragraph [0027] - paragraph [0028] -----	1-4,6-19
X	US 2013/220747 A1 (KIKUDOME TAKASHI [JP] ET AL) 29 August 2013 (2013-08-29)	1-4, 6-15, 17-19
A	claim 1 table 1 paragraph [0022] - paragraph [0028] paragraph [0031] -----	16

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search 29 August 2018	Date of mailing of the international search report 06/09/2018
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Domínguez Gutiérrez
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2018/066813

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2013048627 A1	04-04-2013	BR 112014003684 A2	12-12-2017
		CN 103906942 A	02-07-2014
		EP 2745027 A1	25-06-2014
		JP 2014527566 A	16-10-2014
		KR 20140053254 A	07-05-2014
		RU 2014107185 A	27-09-2015
		WO 2013048627 A1	04-04-2013

US 2013220747 A1	29-08-2013	JP 6024460 B2	16-11-2016
		JP 6226042 B2	08-11-2017
		JP 2016222931 A	28-12-2016
		JP WO2012066967 A1	12-05-2014
		US 2013220747 A1	29-08-2013
		US 2018112730 A1	26-04-2018
		WO 2012066967 A1	24-05-2012

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 5(completely); 1-4, 6-19(partially)

Claim 1 relates to a chemical composition, and as such is required to clearly identify the chemical components falling under its scope.

This claim however attempts to define some of the components of the composition by an overlapping, undefined physical form, e.g. powder, rubber, addition.

Several compounds of different chemical nature can fulfill the above-mentioned forms, leading to a further lack of clarity because the skilled person would be unable to ascertain the number and type of compounds present in the composition. Moreover, the claims encompass compounds which can fulfil several functions without being clear which of the -powder/rubber or powder/addition- roles they represent. It is not plausible that any combination of compounds that can fall under these definitions provides the technical effect sought by the present application. Therefore, the scope of protection provided by this claim is not commensurate with the contribution made to the art by the present application. The components of present claim 1, except for the thermosetting resin, can fulfill several roles in the composition. The skilled person is thus left in doubt as to the exact number and type of compounds present in the composition. Several compounds throughout the claims and description overlap in their roles, such as rubber powder, and aluminum powder, which could be considered as friction material powder. It is also stated in the description that the rubber is rubber powder and recycled rubber, and that would be impossible to distinguish from friction material powder waste. Further lack of clarity would arise, as it is not clear, to which extent certain powders integrate one component or another in order to assess the content, size, and composition of each ingredient.

The expression "metal addition" employed in claim 1 is broad, and does not define a clear class of compounds within the present technical field. This would encompass from coordination compounds to metal fibres, which is clearly not intended in the light of the description.

Having regard to the points discussed above, and considering the description, i.e. p. 2, l. 20 - p. 3, l. 20, in which it is clear that only a limited number and type of compounds afford a material that provides the desired technical effect. Therefore, the scope of protection provided by independent claim 1 is not commensurate with the contribution made to the art by the present application because there is no reason to justify that the scope of this claim is as broad as to claim a material containing a thermosetting resin binding an undefined number of ingredients in powdery form. As a result, claim 1 lacks support, and clarity, contrary to the requirements of Art. 6 PCT because its subject-matter is not commensurate with the contribution made to the art by the present application.

Claim 5 does not fulfil the requirements of Art. 6 PCT because it attempts to characterise a component by its origin without providing any technical features related to its composition. It is impossible to ascertain the origin of the

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

composition's ingredients, let alone to assess whether identical ingredients of different origin would account for different technical features.

The same objections apply to claim 12 *mutatis mutandis*. In addition, it is observed that the description does not provide a method for preparing compositions others than those listed in claim 1. Regarding claim 1. Considering the lack of support and clarity, the search has to be performed taking into consideration the non-compliance in determining the extent of the search of claim 1 (PCT Guidelines 9.19 and 9.23). The search was therefore limited to the subject-matter that can reasonably be expected to be claimed later in the procedure: "claim 1, wherein the rubber is synthetic rubber of the type NBR or SBR, and wherein the metal addition is selected in the list consisting of copper, brass and aluminum powder"; so that the type of at least two ingredients is defined, and clearly not overlapping with the friction material powder waste component, as supported by the present application, and acknowledged to solve the technical effect.

Claim 5 encompasses a scope that cannot be ascertained, contrary to the requirements of Art. 6 PCT. The fact that the origin of the ingredient is defined, does not overcome this objection, as the skilled person would not know beforehand whether ingredients of the same composition and unknown/different origin would fall within the scope claimed.

The non-compliance with the substantive provisions is to such an extent that a meaningful search of the whole claimed subject-matter could not be carried out (Article 17(2) PCT and PCT Guidelines 9.30).

Regarding claim 12, the search has to be performed taking into consideration the non-compliance in determining the extent of the search (PCT Guidelines 9.19 and 9.23). The search was therefore limited to the subject-matter that can reasonably be expected to be claimed later in the procedure: "claim 7, wherein the method produces a friction material according to claim 1".

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) declaration be overcome.