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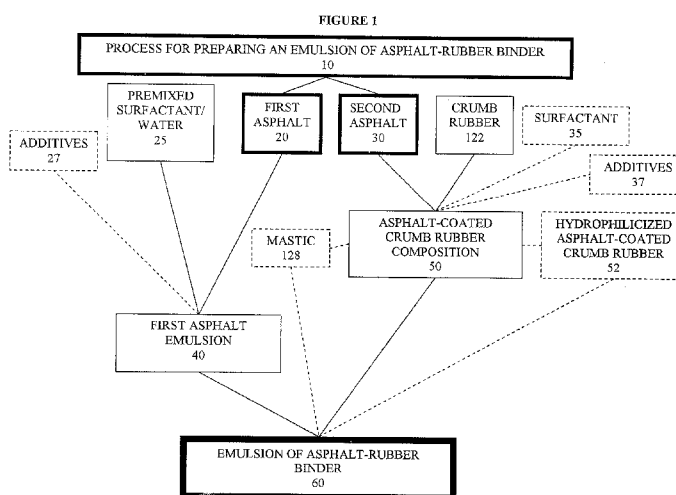
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4 November 2010

(54) Title: ASPHALT - RUBBER COMPOSITIONS AND SYSTEMS AND METHODS FOR PREPARING SAME



(57) Abstract: One embodiment provides a process for preparing an asphalt-coated crumb rubber composition that meets the specification set forth in ASTM D80-02 or deviations thereof which may be established by the specifying agency from time to time. The process generally comprises obtaining asphalt of different penetration grades, combining the asphalt of each grade with preselected chemicals to form separate premixed components, blending the premixed components together under predetermined conditions to form, upon curing, an asphalt-coated crumb rubber composition that meets certain physical requirements for asphalt-rubber binder (ARB), such as those set forth in ASTM D8-02. Advantageously, the resulting asphalt-coated crumb rubber composition not only meets the physical requirements of ARB used in road paving but also has improved dispersion of the rubber, such as dispersion of the rubber in an oil-in-water emulsion of an asphalt.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. C08L95/00 C09D195/00 C09J195/00
 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)
 C08L C09D C09J

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 practical, 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 Y	US 4 018 730 A (MCDONALD CHARLES H) 19 April 1977 (1977-04-19) column 1, line 7 - line 53; claims 1,7; examples 1-7	1-19, 21-26 20
X Y	US 4 137 204 A (MCDONALD CHARLES H) 30 January 1979 (1979-01-30) column 3, line 23 - line 53; claims 1-6; example 7	1-19, 21-26 20
X Y	US 3 513 005 A (BRADSHAW LEONARD CHARLES ET AL) 19 May 1970 (1970-05-19) column 5, line 49 - column 6, line 29; claims 1,14; examples 1,5	20-24 1-9,25, 26
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Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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.</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 2 September 2010	Date of mailing of the international search report 10/09/2010
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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 olde Scheper, Bernd
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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 478 642 A (SCHILLING PETER [US] ET AL) 23 October 1984 (1984-10-23)	20
Y	column 20, line 34 - line 43; examples 1-3; tables I-VII	1-19, 21-26
X	CA 1 136 794 A1 (POUNDER EMULSIONS LTD) 30 November 1982 (1982-11-30)	19,21
Y	claims 1-25; examples 1-18	1-18,20, 22-26
X	US 5 674 313 A (AOYAMA TSUYOSHI [JP] ET AL) 7 October 1997 (1997-10-07)	19-21
Y	column 2, line 65 - column 4, line 15	1-26
A	GB 1 167 265 A (BAYER AG [DE]) 15 October 1969 (1969-10-15) the whole document	1-26
A	US 2003/018106 A1 (SYLVESTER LAURENCE M [US]) 23 January 2003 (2003-01-23) the whole document	1-26
A	US 6 964 940 B1 (TREYBIG DUANE S [US] ET AL) 15 November 2005 (2005-11-15) the whole document	1-26
A	US 3 262 951 A (JACOB KATZ) 26 July 1966 (1966-07-26) the whole document	1-26

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/069757

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.:
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:

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:

see additional sheet

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18, 25, 26

Method for preparing an asphalt-rubber (crumb rubber) emulsion as well as the emulsion obtained therewith

2. claim: 19

Aqueous asphalt emulsion comprising asphalt, crumb rubber and a cationic surfactant

3. claim: 20

Aqueous asphalt emulsion comprising asphalt, an amido amine surfactant and water

4. claims: 21-24

Asphalt coated-rubber composition comprising asphalt, crumb rubber and an cationic surfactant defined by a functional feature

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/069757

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