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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD OF IMPROVING ABRASION RESISTANCE OF PLASTIC ARTICLE AND ARTICLE PRODUCED THEREBY

(57) Abstract: The invention includes embodiments that relate to a method of improving the abrasion resistance of a plastic article. The method comprises: (a) providing a composition comprising at least one siloxane compound and at least one thermoplastic polymeric material; (b) forming an article from the composition of step (a); and (c) exposing the article formed in step (b) to an energy source selected from an electron beam source, a gamma radiation source, and a combination thereof. The invention also includes embodiments that relate to an article comprising an abrasion resistant surface.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

INV. C08J3/28 C08J5/18 C08J5/22 C08L69/00 C08K5/5419
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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)

C08J C08L C08K B32B

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, COMPENDEX, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 05 047214 A (HITACHI CABLE) 26 February 1993 (1993-02-26) abstract	1
X	US 4 110 185 A (WILLIAMS JOEL ET AL) 29 August 1978 (1978-08-29) column 2, lines 59-64; claims 1,2,5,8,9,11-13	1
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A	US 5 681 905 A (MASON JAMES P [US] ET AL) 28 October 1997 (1997-10-28)	1-29
X	claims; examples 2,4-6,8 -/--	1,30

☒ 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 document 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
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- *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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

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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.
A	US 3 652 710 A (HOLUB FRED F ET AL) 28 March 1972 (1972-03-28) column 5, lines 1-66; claim 1 -----	1-30
A	US 5 998 028 A (ECKART MICHAEL DENNIS [US] ET AL) 7 December 1999 (1999-12-07) claims 1,5,8-10 -----	1-30
A	US 4 749 738 A (BOUTNI OMAR M [US]) 7 June 1988 (1988-06-07) column 1, lines 23-28; claim 1 -----	1-30
A	EP 1 223 184 A1 (MITSUBISHI GAS CHEMICAL CO [JP]) 17 July 2002 (2002-07-17) paragraph [0001]; claim 1 -----	1-30

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/039041

Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.
- ☐ 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. claim: 1

Method for improving the abrasion resistance of a plastic article

2. claims: 2-30

Method for improving the abrasion resistance of a plastic article; article comprising an abrasion resistant surface

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/039041

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