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(54) Title: ANTISTATIC SURFACE PROTECTION FILM

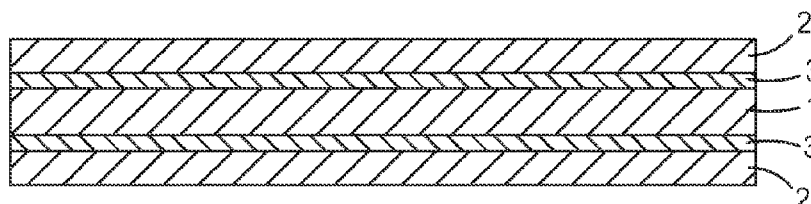


FIG. 1

(57) Abstract: Disclosed is an antistatic surface protection film including: a core layer including a polystyrene-based polymer; a skin layer laminated on each of both surfaces of the core layer, which includes a polyethylene-based polymer and an antistatic agent; and a tie layer between the core layer and the skin layer, which binds the core layer and the skin layer, wherein, the tie layer includes a polymer having a repeating unit compatible with the polystyrene-based polymer and another repeating unit compatible with the polyethylene-based polymer.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/046938**A. CLASSIFICATION OF SUBJECT MATTER*****B32B 27/28(2006.01)i, B32B 27/08(2006.01)i, B32B 27/18(2006.01)i, C08J 5/18(2006.01)i***

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)

IPC 8: B32B 27/28, B32B 27/08, B32B 27/18, C08J 5/18

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

Korean utility models and applications for utility models since 1975
Japanese utility models and applications for utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & keywords : "multilayer", "film", "antistatic", "core", "surface", "polystyrene" and "polyethylene"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-2007-0037970 A (SUH, KWANG SUCK) 09 April 2007 See abstract, claims 1-8, and figures 1-2.	1-17
A	JP 2006-305848 A (DENKI KAGAKU KOGYO KK) 09 November 2006 See abstract, paragraph [0007], and claims 1-5.	1-17
A	JP 2001-113652 A (SHIN KOBE ELECTRIC MACH CO., LTD.) 24 April 2001 See abstract, and claims 1-2.	1-17
A	KR 10-2005-0036310 A (SUH, KWANG SUCK) 20 April 2005 See abstract, claims 1-7, 11, 12, 17, and figure 1.	1-17

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 10-2007-0037970 A	09.04.2007	KR 10-0715554 B1 CN 101277996 A EP 1931721 A1 JP 2009-509821 A US 2008-0248311 A1 WO 2007-040352 A1	07.05.2007 01.10.2008 18.06.2008 12.03.2009 09.10.2008 12.04.2007
JP 2006-305848 A	09.11.2006	None	
JP 2001-113652 A	24.04.2001	None	
KR 10-2005-0036310 A	20.04.2005	KR 10-0624525 B1 EP 1694793 A1 JP 2007-510807 A US 2009-0017249 A1 WO 2006-057465 A1	18.09.2006 30.08.2006 26.04.2007 15.01.2009 01.06.2006