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(54) Title: THERMOPLASTIC MELT-MIXED COMPOSITION WITH HEAT STABILIZER

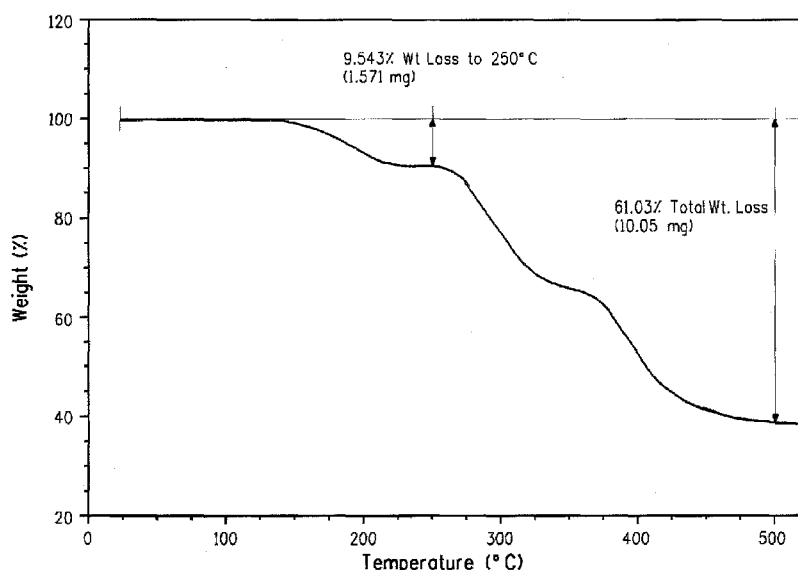


FIG. 1

(57) Abstract: Disclosed is a thermoplastic melt-mixed composition including a) a polyamide resin; b) about 1.0 to about 5.0 weight percent of an amino acid thermal stabilizer; c) 10 to 60 weight percent reinforcing agent; and, optionally, 0 to 30 weight percent polymeric toughener; and molded or extruded thermoplastic articles made therefrom.



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A. CLASSIFICATION OF SUBJECT MATTER*C08L 77/00(2006.01)i, C08L 77/10(2006.01)i, C08G 69/14(2006.01)i, C08K 3/00(2006.01)i, C08J 5/00(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)

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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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: thermoplastic, polyamide, composition, amion acid thermal stabilizer, EDTA, chelate, reinforcing agent, polymeric toughener, high temperature, thermal stability.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010-0029819 A1 (PALMER, ROBERT J. et al.) 04 February 2010 See abstract; claims 1 & 10.	1-12
A	US 5130198 A (SWISHER, ROBERT G. et al.) 14 July 1992 See abstract; Tables 1-2.	1-12
A	US 4602058 A (GRAHAM, STEPHEN L. et al.) 22 July 1986 See claim 7.	1-12
A	US 3798198 A (HOLE, LIONEL GEOFFREY et al.) 19 March 1974 See abstract; examples 1 & 4-13.	1-12
A	JP 05-043798 A (SHOWA DENKO K.K.) 23 February 1993 See claim 1.	1-12



Further documents are listed in the continuation of Box C.



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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010-0029819 A1	04.02.2010	CA 2725384 A1	04.02.2010
		CA 2726010 A1	04.02.2010
		CN 102112525 A	29.06.2011
		CN 102112526 A	29.06.2011
		CN 102112527 A	29.06.2011
		CN 102112545 A	29.06.2011
		CN 102112549 A	29.06.2011
		CN 102112550 A	29.06.2011
		CN 102112551 A	29.06.2011
		EP 2307480 A1	13.04.2011
		EP 2307481 A1	13.04.2011
		EP 2307482 A1	13.04.2011
		EP 2307499 A2	13.04.2011
		EP 2307502 A1	13.04.2011
		EP 2307503 A1	13.04.2011
		EP 2307504 A1	13.04.2011
		JP 2011-529986 A	15.12.2011
		JP 2011-529987 A	15.12.2011
		JP 2011-529988 A	15.12.2011
		JP 2011-529989 A	15.12.2011
		JP 2011-529990 A	15.12.2011
		JP 2011-529991 A	15.12.2011
		JP 2011-529993 A	15.12.2011
		KR 10-2011-0032001 A	29.03.2011
		KR 10-2011-0042091 A	22.04.2011
		US 2010-0028580 A1	04.02.2010
		US 2010-0028581 A1	04.02.2010
		US 2010-0029815 A1	04.02.2010
		US 2010-0029820 A1	04.02.2010
		US 2010-0029821 A1	04.02.2010
		US 2010-0029837 A1	04.02.2010
		WO 2010-014785 A1	04.02.2010
		WO 2010-014790 A1	04.02.2010
		WO 2010-014791 A1	04.02.2010
		WO 2010-014795 A1	04.02.2010
		WO 2010-014796 A2	04.02.2010
		WO 2010-014796 A3	06.05.2010
		WO 2010-014801 A1	04.02.2010
		WO 2010-014810 A1	04.02.2010
US 5130198 A	14.07.1992	EP 0381125 A2	08.08.1990
		EP 0381125 A3	23.01.1991
		EP 0381125 B1	17.11.1994
		JP 2093573 C	18.09.1996
		JP 2240170 A	25.09.1990
		JP 8003063 B2	17.01.1996
		KR 10-0161522 B1	15.01.1999
		US 5247004 A	21.09.1993

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/023295

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4602058 A	22.07.1986	EP 0188542 A1	30.07.1986
		EP 0188542 A4	20.01.1987
		EP 0188542 B1	05.09.1990
		WO 86-00631 A1	30.01.1986
US 3798198 A	19.03.1974	CA 972495 A1	05.08.1975
		DE 2062979 A1	19.12.1969
		FR 2074108 A5	19.12.1969
		GB 1341378 A	19.12.1969
		NL 7018601 A	22.06.1971
JP 05-043798 A	23.02.1993	None	