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(54) Title: COMPOUNDS USEFUL FOR REDUCING ACETALDEHYDE CONTENT OF POLYETHYLENE TEREPHTHALATE, THEIR USE AND PRODUCTS RESULTING THEREFROM

(57) Abstract: This invention relates to polyester materials such as polyethylene terephthalate (PET) and products such as bottles, containers, films and sheets made therefrom. The invention includes the use of certain "enaminones" including a preferred class of heterocyclic compounds which are present during melt processing of such polyester materials in order to reduce the content of acetaldehyde (AA).



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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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)

IPC 7 C08K

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, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 274 212 B1 (M. RULE) 14 August 2001 (2001-08-14) cited in the application column 3, line 29 - column 4, line 42 column 4, line 54 - line 62 column 5, line 9 - line 52; claims 1-20	1
A	DE 197 41 778 A (CIBA SPECIALTY CHEMICALS HOLDING INC.) 26 March 1998 (1998-03-26) claims 1-11	1
A	US 4 656 209 A (W. WEHNER..-) 7 April 1987 (1987-04-07) claims 1-10	1
A	GB 1 222 474 A (ASAHI KASEI KOGYO KABUSHIKI KAISHA) 17 February 1971 (1971-02-17) claims 1-12	1



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Patent family members are listed in annex.

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Information on patent family members

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PCT/US 03/09183

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6274212	B1	14-08-2001	AU 4164001 A	03-09-2001
			CA 2398618 A1	30-08-2001
			EP 1263880 A2	11-12-2002
			JP 2003524048 T	12-08-2003
			WO 0162838 A2	30-08-2001
			ZA 200205890 A	23-07-2003
DE 19741778	A	26-03-1998	AT 407395 B	26-02-2001
			AT 162497 A	15-07-2000
			AU 715135 B2	20-01-2000
			AU 3834597 A	02-04-1998
			BE 1011371 A3	03-08-1999
			BR 9704856 A	29-12-1998
			CA 2216141 A1	25-03-1998
			DE 19741778 A1	26-03-1998
			DK 106297 A	26-03-1998
			ES 2131017 A1	01-07-1999
			FI 973734 A	26-03-1998
			FR 2753709 A1	27-03-1998
			GB 2318118 A ,B	15-04-1998
			IT MI972161 A1	24-03-1999
			JP 10158454 A	16-06-1998
			NL 1007121 C2	18-05-1998
			NL 1007121 A1	31-03-1998
			NO 974416 A	26-03-1998
			SE 9703423 A	26-03-1998
			TW 404964 B	11-09-2000
			US 5859100 A	12-01-1999
			ZA 9708531 A	25-03-1998
US 4656209	A	07-04-1987	NONE	
GB 1222474	A	17-02-1971	DE 1911221 A1	25-09-1969
			FR 2003243 A5	07-11-1969
			US 3591521 A	06-07-1971