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(54) Plastic container having improved haze resistance and a method of reducing haze in plastic containers

(57) A plastic container for beverages is described having improved resistance to haziness, the plastic comprising at least one plastic component. The plastic component is PEN, and the outer surface of the container is provided with a coating imparting improved resistance to haziness to the container.

A method of reducing haze on plastic containers for beverages is also described the plastic comprising at least one plastic component comprising PEN. The container is refillable and of the type that is subjected to at least one trip during its shelf life, the trip including a washing step and a filling step. A coating is applied on the outer surface of the container between said steps or after the filling step to impart to the container an improved resistance to haziness.

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EUROPEAN SEARCH REPORT

Application Number
EP 01 85 0038

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 667 302 A (TETRA LAVAL HOLDINGS & FINANCE) 16 August 1995 (1995-08-16) * column 3, line 43 - line 47 * * column 4, line 22 - line 53 * ---	1-3,6,9	B65D23/08 B65D1/02
X Y	US 5 334 322 A (WILLIAMS JR WILLIAM A) 2 August 1994 (1994-08-02) * column 1, line 37 - line 45 * * column 2, line 19 - line 36 * * column 2, line 67 - column 3, line 16 * ---	1,2,4,5, 10 3,6-9	
X Y	US 5 681 628 A (ZERN JOHN R ET AL) 28 October 1997 (1997-10-28) * column 1, line 6 - line 63 * * column 2, line 30 - line 46 * * column 3, line 17 - column 5, line 53 * * column 6, line 31 - line 67 * ---	1,2,4,5, 10 3,6-9	
X	EP 0 789 092 A (BECTON DICKINSON CO) 13 August 1997 (1997-08-13) * page 3, line 1 - line 26 * * page 7, line 14 - line 15; claims 1,11 * ---	1,2	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65D B05C C09D
X	EP 0 794 007 A (BECTON DICKINSON CO) 10 September 1997 (1997-09-10) * claim 1 * ---	1,2	
X	EP 0 928 683 A (HNA HOLDINGS INC) 14 July 1999 (1999-07-14) * page 18, line 38 - line 46 * * page 21, line 2 - line 3; claims 1,9 * --- -/--	1,2	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	1 October 2003	Grondin, D

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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Application Number
EP 01 85 0038

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	EP 0 468 244 A (WILD RUDOLF GMBH & CO) 29 January 1992 (1992-01-29) * column 3, line 3 - line 52 * * column 4, line 42 - line 46 * * column 5, line 22 - line 47 * * column 7, line 13 - line 20 * * column 7, line 55 - column 8, line 13 * ---	3,6-9	
A	US 5 976 653 A (KRISHNAKUMAR SUPPAYAN M ET AL) 2 November 1999 (1999-11-02) * column 2, line 50 - column 3, line 13 * * column 10, line 49 - line 55 * -----	1,2,6,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)

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01-10-2003

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0667302	A	16-08-1995	CH	687614 A5	15-01-1997
			AU	1156995 A	17-08-1995
			CA	2141832 A1	05-08-1995
			EP	0667302 A1	16-08-1995
			JP	7257585 A	09-10-1995
			US	5721027 A	24-02-1998
US 5334322	A	02-08-1994	NONE		
US 5681628	A	28-10-1997	US	5300334 A	05-04-1994
			AT	172421 T	15-11-1998
			CA	2109226 A1	27-10-1992
			DE	69227367 D1	26-11-1998
			DE	69227367 T2	20-05-1999
			DK	581863 T3	28-06-1999
			EP	0581863 A1	09-02-1994
			ES	2124259 T3	01-02-1999
			JP	8324572 A	10-12-1996
			JP	2800849 B2	21-09-1998
			JP	6508586 T	29-09-1994
			MX	9200949 A1	01-10-1992
			WO	9219505 A1	12-11-1992
EP 0789092	A	13-08-1997	US	5686157 A	11-11-1997
			AU	1232197 A	07-08-1997
			BR	9700730 A	18-08-1998
			CA	2194634 A1	31-07-1997
			DE	69705557 D1	16-08-2001
			DE	69705557 T2	25-04-2002
			EP	0789092 A2	13-08-1997
			ES	2158378 T3	01-09-2001
			JP	3224348 B2	29-10-2001
			JP	9253075 A	30-09-1997
			KR	186806 B1	01-04-1999
			SG	45530 A1	16-01-1998
EP 0794007	A	10-09-1997	US	5545375 A	13-08-1996
			EP	0794007 A1	10-09-1997
EP 0928683	A	14-07-1999	US	6426128 B1	30-07-2002
			AU	1001899 A	29-07-1999
			BR	9900016 A	21-12-1999
			EP	0928683 A2	14-07-1999
			JP	11314335 A	16-11-1999
EP 0468244	A	29-01-1992	DE	4023909 A1	30-01-1992

EPO FORM P0459

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 85 0038

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-10-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0468244 A		EP 0468244 A2	29-01-1992
		FI 913589 A	28-01-1992
		NO 912816 A	28-01-1992
US 5976653 A	02-11-1999	US 5628957 A	13-05-1997
		AT 184834 T	15-10-1999
		AU 690193 B2	23-04-1998
		AU 1435395 A	03-07-1995
		CN 1167461 A ,B	10-12-1997
		DE 69420861 D1	28-10-1999
		DE 69420861 T2	10-02-2000
		EP 0734316 A1	02-10-1996
		NZ 278214 A	26-01-1998
		SG 47925 A1	17-04-1998
		WO 9516554 A1	22-06-1995
		AT 177049 T	15-03-1999
		AU 674528 B2	02-01-1997
		AU 4664293 A	31-01-1994
		CA 2139764 A1	20-01-1994
		CN 1092352 A	21-09-1994
		DE 69323751 D1	08-04-1999
		DE 69323751 T2	01-07-1999
		EP 0653981 A1	24-05-1995
		HU 71921 A2	28-02-1996
		SG 45429 A1	16-01-1998
		SK 1495 A3	09-08-1995
		US 6090460 A	18-07-2000
		WO 9401268 A1	20-01-1994
		US 5728347 A	17-03-1998
		US 5759656 A	02-06-1998
		MX 9304091 A1	31-05-1994

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82