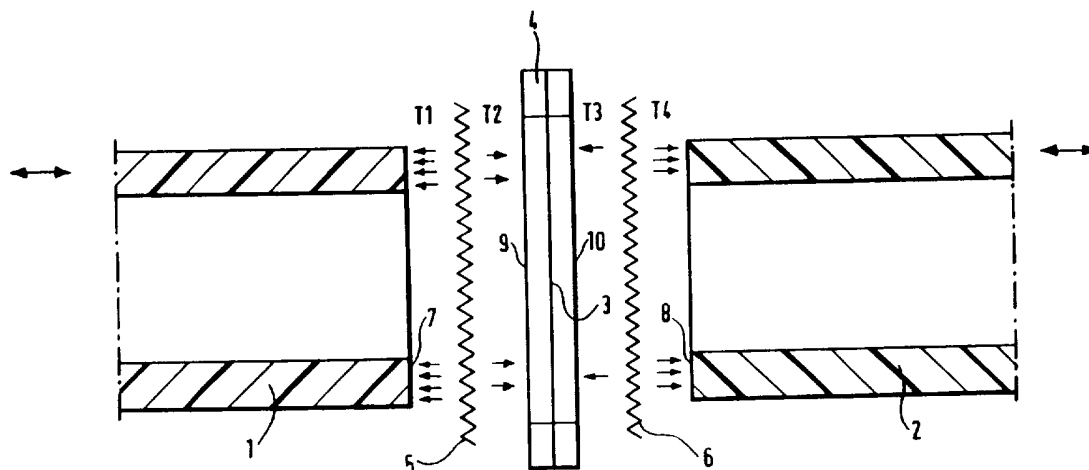




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>C08J 5/12, B29C 65/50 //</b> <b>C08L 23:02</b></p>	<p><b>A3</b></p>	<p>(11) International Publication Number: <b>WO 97/06205</b></p> <p>(43) International Publication Date: 20 February 1997 (20.02.97)</p>
<p>(21) International Application Number: PCT/EP96/03422</p> <p>(22) International Filing Date: 2 August 1996 (02.08.96)</p> <p>(30) Priority Data: 9516010.7 4 August 1995 (04.08.95) GB</p> <p>(71) Applicant (for all designated States except US): UPONOR B.V. [NL/NL]; Hoekenrode 6-8, NL-1102 BR Amsterdam (NL).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): HOVING, Lars, Goran [SE/SE]; Sigfrid Edstroms Gata 36, S-724 66 Vateras (SE).</p> <p>(74) Agent: HALL, Robert, Leonard; Dibb Lupton Broomhead, Fountain Precinct, Balm Green, Sheffield S1 1RZ (GB).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 20 March 1997 (20.03.97)</p>

(54) Title: JOINING OF POLYOLEFIN ARTICLES



## (57) Abstract

A method of joining polyolefin articles by fusion bonding, in which the surfaces of the articles are raised to the fusion temperature in a time of less than one minute, and in which there is interposed between the surfaces to be joined a polyolefin film of a thickness less than 50 microns.

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# INTERNATIONAL SEARCH REPORT

International Application No

PC1/EP 96/03422

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 6 C08J5/12 B29C65/50 //C08L23:02

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 6 C08J C09J

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE,A,20 26 193 (BORG-WARNER CORP.) 7 January 1971 cited in the application see claims 1-4 ---	1-6,12, 13,16,25
X	EP,A,0 329 529 (GAZ DE FRANCE) 23 August 1989 see claims 1,4-6 see column 3, line 20 - line 22 see column 4, line 52 - line 57 see example 1 ---	1
A	FR,A,2 112 807 (PONT A MOUSSON FOND) 23 June 1972 see claims 1-5,8-11 ---	1
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Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search  <b>29 January 1997</b>	Date of mailing of the international search report  <b>11.02.97</b>
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl, Fax (+ 31-70) 340-3016	Authorized officer  <b>Van Puymbroeck, M</b>
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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	DE,B,10 05 720 (DYNAMIT AG) 4 April 1957 see claim 1 see column 3, line 4 - line 19 ---	1
A	EP,A,0 329 350 (BRITISH GAS PLC) 23 August 1989 cited in the application see claims 1,4,8 see column 1, line 52 - column 2, line 7 -----	1

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 96/03422

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A-2026193	07-01-71	BE-A- 751560 FR-A- 2050003 NL-A- 7008298	07-12-70 26-03-71 15-12-70
EP-A-0329529	23-08-89	FR-A- 2627125 CA-A- 1334720 DE-T- 68905840 JP-A- 1295829	18-08-89 14-03-95 07-10-93 29-11-89
FR-A-2112807	23-06-72	NONE	
DE-B-1005720		NONE	
EP-A-0329350	23-08-89	GB-A- 2214863 CA-A- 1307090 US-A- 4963421	13-09-89 08-09-92 16-10-90