

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

**EP 1 063 277 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**03.12.2003 Bulletin 2003/49**

(51) Int Cl.7: **C10L 5/14**

(43) Date of publication A2:  
**27.12.2000 Bulletin 2000/52**

(21) Application number: **00305291.7**

(22) Date of filing: **22.06.2000**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(30) Priority: **23.06.1999 GB 9914537**

(71) Applicant: **BORDEN CHEMICAL UK LIMITED  
Southampton SO52 9ZB (GB)**

(72) Inventor: **Murray, Graham  
Fair Oak Southampton SO50 7LQ (GB)**

(74) Representative: **Wilkinson, Stephen John et al  
Stevens, Hewlett & Perkins  
1 St. Augustine's Place  
Bristol BS1 4UD (GB)**

(54) **Fuel briquetting composition and the manufacturing of fuel briquettes using it**

(57) A fuel briquetting composition comprising a mixture of fuel particles, e.g., coal or petroleum coke, an alkaline phenol-formaldehyde resin, an esterified phenol-formaldehyde resole resin, a water-activatable green strength additive and water. Fuel briquettes can be made using this mixture by forming it into briquettes and allowing the resinous components of the mixture to react with the result of hardening the briquettes.

The use of an esterified phenol-formaldehyde resole resin as the curing agent for the alkaline phenol-formaldehyde resin binder has the advantage that the reaction product does not result in the incorporation of unreactive by-products into the polymer matrix which would, if present, lower the water resistance of the product.

**EP 1 063 277 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 30 5291

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	GB 1 046 250 A (ICI LTD) 19 October 1966 (1966-10-19) * page 1, line 24 - line 28 * * page 1, line 39 - page 2, line 8; claims 1,5,6; example 1 * ---	1,2,4,6, 7	C10L5/14
Y	US 4 802 890 A (VILES ROBERT F) 7 February 1989 (1989-02-07) * column 1, line 25 - line 39 * * column 2, line 34 - line 38 * * column 2, line 59 - column 3, line 20; claims 1,6 * ---	1,2,4,5, 7	
Y	WO 97 13827 A (ASHLAND INC ;ASHLAND UK LTD (GB); YATES RAYMOND (GB)) 17 April 1997 (1997-04-17) * page 2, line 7 - line 10 * * page 4, line 1 - line 6 * * page 5, line 18 - page 6, line 23; claims 2,8 * ---	1,2,4,5, 7	
Y	GB 2 330 150 A (APPLIED IND MATERIALS UK LTD) 14 April 1999 (1999-04-14) * page 2, line 12 - line 31 * * page 3, line 31 - page 4, line 4 * * page 5, line 9 - line 27; claims 1,4; example 1 * ---	1,2,4,5, 7	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C10L
Y	EP 0 377 308 A (BORDEN UK LTD) 11 July 1990 (1990-07-11) * page 1, line 14 - line 21 * * page 4, line 21 - line 22 * * page 4, line 47 - line 48 * * page 7, line 55 - line 57 * * page 8, line 7 - line 8 * * page 8, line 37 - line 41; claims 1,5-7; examples 1,2,4 * -----	1,2,4-7	
The present search report has been drawn up for all claims			
Place of search <b>MUNICH</b>		Date of completion of the search <b>1 October 2003</b>	Examiner <b>Bertrand, S</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 (03.82 (P04C01))

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 5291

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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
GB 1046250	A	19-10-1966	NONE	
-----				
US 4802890	A	07-02-1989	AT 52272 T	15-05-1990
			AU 587115 B2	03-08-1989
			AU 7053887 A	15-10-1987
			CA 1284029 C	14-05-1991
			DE 3762424 D1	31-05-1990
			EP 0241156 A2	14-10-1987
			ZA 8702129 A	25-11-1987
-----				
WO 9713827	A	17-04-1997	AU 7223096 A	30-04-1997
			BR 9610890 A	21-12-1999
			CA 2234705 A1	17-04-1997
			CN 1201482 A	09-12-1998
			EP 0862605 A1	09-09-1998
			WO 9713827 A1	17-04-1997
			PL 326250 A1	31-08-1998
-----				
GB 2330150	A	14-04-1999	NONE	
-----				
EP 0377308	A	11-07-1990	AT 104933 T	15-05-1994
			AT 96768 T	15-11-1993
			AU 616332 B2	24-10-1991
			AU 4709289 A	28-06-1990
			AU 616333 B2	24-10-1991
			AU 4709389 A	26-07-1990
			BG 60051 A3	16-08-1993
			BR 8906726 A	11-09-1990
			BR 8906727 A	11-09-1990
			CA 2006224 A1	22-06-1990
			CA 2006225 A1	22-06-1990
			DD 298413 A5	20-02-1992
			DE 68910494 D1	09-12-1993
			DE 68910494 T2	03-03-1994
			DE 68914969 D1	01-06-1994
			DE 68914969 T2	01-12-1994
			DK 117791 A	16-08-1991
			DK 117891 A	12-08-1991
			EP 0377996 A1	18-07-1990
			EP 0377308 A1	11-07-1990
			ES 2059792 T3	16-11-1994
			WO 9006903 A1	28-06-1990
			WO 9006904 A2	28-06-1990
			HU 57171 A2	28-11-1991
			HU 57172 A2	28-11-1991
			IL 92690 A	18-08-1993

EPO FORM P0459

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

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 5291

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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 0377308      A		JP      2263814 A	26-10-1990
		JP      3118241 B2	18-12-2000
		JP      2263815 A	26-10-1990
		KR      9402178 B1	18-03-1994
		KR      9404813 B1	01-06-1994
		MX      169750 B	22-07-1993
		NO      912206 A	16-08-1991
		NO      912207 A	16-08-1991
		PH      26581 A	19-08-1992
		PL      282944 A1	11-02-1991
		PL      287204 A1	08-04-1991
		PL      287205 A1	09-09-1991
		PT      92684 A	29-06-1990
		PT      92686 A	29-06-1990
		TR      24886 A	01-07-1992
		TR      24856 A	01-07-1992
		US      5340888 A	23-08-1994
		US      5051454 A	24-09-1991
		YU      243589 A1	28-02-1991
		YU      244189 A1	28-02-1991
		ZA      8909681 A	31-10-1990
		ZA      8909682 A	31-10-1990
-----			