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- (71) Applicant: E.I. DU PONT DE NEMOURS AND COMPANY
 Wilmington, DE 19898 (US)
- (72) Inventors:
 - Batzar, Kenneth Cherry Hill
 New Jersey 08003 (US)

- Hamilton, Jeffrey Hugh Greenville
 Delaware 19807 (US)
- Rey, Christopher Mark Hockessin Delaware 19707 (US)
- Leck, Thomas J Hockessin Delaware 19707 (US)
- Herzer, Alan Charles Turnersville
 New Jersey 08102 (US)
- (74) Representative: Matthews, Derek Peter Frank B. Dehn & Co.,179 Queen Victoria Street London EC4V 4EL (GB)

(54) Patterned release finish

(57) Smooth, patterned substrates useful in producing decorative cookware are formed by coating a base with a mixture of fluoropolymer and magnetic flakes and magnetically inducing an image in the polymer coating composition. The baked fluoropolymer release coating contains magnetizable flakes, a portion of the flakes being oriented in the plane of the substrate and a portions of said flakes being magnetically reoriented to form a pattern in the coating which is observed in reflected light,

the flakes having a longest dimension which is greater than the thickness of said coating. The patterned substrate is formed by applying magnetic force through the edges of a magnetizable die positioned under a coated base to induce an imaging effect or pattern. The coating composition in then cured resulting in a smooth surface, patterned nonstick finish on the substrate.



EUROPEAN SEARCH REPORT

Application Number EP 04 01 2916

	DOCUMENTS CONSID	ERED TO BE RELEVANT	Γ		
Category	Citation of document with ir of relevant passa	ndication, where appropriate, ges	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
X	PATENT ABSTRACTS OF vol. 1997, no. 01, 31 January 1997 (19 -& JP 08 243483 A (24 September 1996 (* abstract *	997-01-31) NISSHIN STEEL CO LTD),	1-5	B05D3/14 B05D5/06 B32B5/14 B32B15/08 B32B27/30	
Χ	EP 0 556 449 A (HAS CO., LTD) 25 August	SHIMOTO FORMING INDUSTRY	1,2,5		
Α	* claims 1-39 * * figures 10,25,26, * page 10, line 48 * page 15, line 5 - * page 16, line 41	30 * - line 56 * · line 50 *	3,4		
D,A	GB 1 131 038 A (TER 16 October 1968 (19 * claims 1-9 * * page 1, line 9 - * figures 1-6 *	968-10-16)	1-5		
Α	9 January 1991 (199 * claims 1-8 * * figures 1-11 *	 PPON PAINT CO., LTD) 01-01-09) - column 5, line 24 *	1-5	TECHNICAL FIELDS SEARCHED (IPC) B05D B32B	
Α	US 4 518 626 A (KAT 21 May 1985 (1985-6 * claims 1-5 * * figures 1,2 * * column 2, line 46		1-5		
		-/			
	The present search report has l	been drawn up for all claims			
	Place of search	Date of completion of the search		Examiner	
	The Hague	30 November 2005	V1a	ıssi, E	
CATEGORY OF CITED DOCUMENTS 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		E : earlier patent door after the filling date her D : document cited in L : document cited fo	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 &: member of the same patent family, corresponding document		



EUROPEAN SEARCH REPORT

Application Number EP 04 01 2916

-	DOCUMENTS CONSID				
Category	Citation of document with ir of relevant passa	dication, where appropriate, ges	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
A	PATENT ABSTRACTS OF vol. 1997, no. 07, 31 July 1997 (1997- -& JP 09 073629 A (18 March 1997 (1997 * abstract *	1-5			
A	PATENT ABSTRACTS OF vol. 1997, no. 11, 28 November 1997 (1 -& JP 09 176833 A (ELEMEX CORP), 8 Jul * abstract *	1-5			
Α	PATENT ABSTRACTS OF vol. 012, no. 450 (25 November 1988 (1 -& JP 63 175670 A (20 July 1988 (1988- * abstract *	C-547), 988-11-25) KANSAI PAINT CO LTD),	1-5	TECHNICAL FIELDS	
A	PATENT ABSTRACTS OF vol. 006, no. 073 (8 May 1982 (1982-05 -& JP 57 010376 A (19 January 1982 (19 * abstract *	1-5	SEARCHED (IPC)		
A	PATENT ABSTRACTS OF vol. 017, no. 291 (4 June 1993 (1993-6 -& JP 05 017709 A (26 January 1993 (19 * abstract *	C-1067), 6-04) NIPPON PAINT CO LTD),	1-5		
	The present search report has b	peen drawn up for all claims			
	Place of search	Date of completion of the search	<u>' </u>	Examiner	
	The Hague	30 November 2005	Vla	assi, E	
X : part Y : part docu A : tech O : non	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with anotl ument of the same category inological backgroundwritten disclosure rmediate document	T : theory or principl E : earlier patent do after the filing dat ner D : document cited i L : document cited f & : member of the si document	cument, but publice n the application or other reasons	shed on, or	

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

EP 04 01 2916

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.

30-11-2005

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP 08243483	Α	24-09-1996	NONE			
EP 0556449	A	25-08-1993	DE DE US	69218582 69218582 5364689	T2	30-04-19 10-07-19 15-11-19
GB 1131038	Α	16-10-1968	BE CH DE FR NL		A B A	04-10-19 31-12-19 21-12-19 27-05-19 17-10-19
EP 0406667	A	09-01-1991	AU AU CA DE DE KR	631435 5781690 2019844 69015900 69015900 135274	A A1 D1 T2	26-11-19 03-01-19 27-12-19 23-02-19 22-06-19 22-04-19
US 4518626	Α	21-05-1985	DE JP JP JP NL	3347466 1785704 3041895 59124039 8304477	C B A	05-07-19 31-08-19 25-06-19 18-07-19
JP 09073629	Α	18-03-1997	JР	3614530	B2	26-01-20
JP 09176833	Α	08-07-1997	NONE			
JP 63175670	Α	20-07-1988	NONE			
JP 57010376	Α	19-01-1982	NONE			
JP 05017709	Α	26-01-1993	NONE			

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