D CUMENT ID NO.: 102508369 02-25-	2004 / Oallm/	
Form PTO-1595 A 2 2 3 4	U.S. DEPARTMENT OF COMMERCE	
(Rev. 10/02)	U.S. DEPARTMENT OF COMMERCE U.S. Patent and Trademark Office	
OMB No. 0651-0011 (exp. 6/30/2005)	2050	
To the Honorable Commissioner of Pater. 102679		
Name of conveying party(ies): Down I Boul Butter	Name and address of receiving party(ies):	
Darryl Paul Butt	Name: Air Products and Chemicals, Inc.	
Steven Walton Rynders		
Michael Francis Carolan	Internal Address: Patent Department	
Additional name(s) of conveying party(ies) attached? □Yes ☑No	Street Address: 7201 Hamilton Boulevard	
	City Allentown State PA ZIP 18195-1501	
·	Additional name(s) & address(es) attached? ☐ Yes ☒ No	
3. Nature of Conveyance:	, reducinal name (o) a auditose (os) a auditos.	
☑ Assignment ☐ Merger		
☐ Security Agreement ☐ Change of Name ☐ Other	√. ·	
Execution Date: (1) 20 June 2003, (2) 26 June 2003,		
(3) 01 July 2003, (4) 07 July 2003		
Application number(s) or patent number(s):		
If this document is being filed together with a new application, the execut	tion date of the application is: (1) 20 June 2003,	
(2) 26 June 2003, (3) 01 July 2003, (4) 07 July 2003		
A. Patent Application No.(s)	B. Patent No.(s)	
10/393,564 (Filed 03/21/03)	2. 7 (10.10.10.10.10.10.10.10.10.10.10.10.10.1	
10/393,304 (Filed 03/21/03)	1 W	
	B. Patent No.(s)	
Additional numbers attached? ☐ Yes ☒ No ——————————————————————————————————		
Name and address of party to whom correspondence concerning document should be mailed:	6. Total number of applications and patents involved: 1	
Name: Ruth Ann Borst	7. Total fee (37 CFR 3.41) \$ 40.00	
Legal Assistant	□ Enclosed	
	■ Authorized to be charged to deposit account	
Internal Address: Patent Department (06067 USA)		
Street Address: 7201 Hamilton Boulevard	8. Deposit account number:	
City Allentown State PA ZIP 18195-1501	01-0493	
DO NOT USE THIS SPACE		
9. Statement of signature.	rmation is true and correct and any attached copy is a true copy	
of the original document.	ппанот то ино ани соностани ану анасней сору is a true сору	
or the original december.		
Keith D. Courley, Bern No. 22 000)	
Keith D. Gourley, Reg. No. 32,988 Name, Reg. No. of Person Signing	Signature 16 February 2004 Date	
Total number of pages comprising lover sheet: 1		
Mail documents to be recorded with required cover sheet information to:		
Mail Stop Assignment Recordation Services		
Director of the U.S. Patent and Trademark Office		
P.O. Box 1450		

Alexandria, VA 22313-1450

PATENT REEL: 014994 FRAME: 0436

	ร์งอกท์จ	
Form PTO-1595	U.S. DEPARTMENT OF COMMERCE	
(Rev. 10/02) F	U.S. Patent and Trademark Office	
OMB No. 0651-0011 (exp. 6/30/20025) To the Honorable Commissioner of Patents a. /025	08369 original documents or copy thereof.	
	Name and address of receiving party(ies):	
1. Name of conveying party(les): 7 23 - 03 Darryl Paul Butt 7 23 - 03 Raymond Ashton Cutler	Name: Air Products and Chemicals, Inc.	
Steven Walton Rynders Michael Francis Carolan	Internal Address: Patent Department	
Additional name(s) of conveying party(ies) attached? □Yes ⊠No	Street Address: 7201 Hamilton Boulevard	
	City Allentown State PA ZIP 18195-1501	
	Additional name(s) & address(es) attached? Yes IN No Compared to the application is: (1) 20 June 2003,	
3. Nature of Conveyance:	T B CE	
☐ Security Agreement ☐ Change of Name	THANCE	
☐ Other	76 2 P	
(3) 01 July 2003, (4) 07 July 2003	m w z	
4. Application number(s) or patent number(s):	ST 3 S	
If this document is being filed together with a new application, the execut	ion date of the application is: (1) 20 June 2003,	
(2) 26 June 2003, (3) 01 July 2003, (4) 07 July 2003	ion date of the application is: (1) 20 June 2003,	
A. Patent Application No.(s)	B. Patent No.(s)	
٧r		
Additional numbers attached? ☐ Yes ☒ No		
Name and address of party to whom correspondence concerning document should be mailed:	Total number of applications and patents involved:	
Name: Dianne K. Moser	7. Total fee (37 CFR 3.41) \$_40.00	
Name: Dianne K. Moser Legal Assistant	☐ Enclosed	
	☑ Authorized to be charged to deposit account	
Internal Address: Patent Department (06067 USA)		
Street Address: 7201 Hamilton Boulevard	8. Deposit account number: 01-0493	
City Allentown State PA ZIP 18195-1501		
DO NOT USE	THIS SPACE	
9. Statement of signature.		
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy		
of the original document.		
Keith D. Gourley, Reg. No. 32,988	21 July, 2003	
Name, Reg. No. of Person Signing Total number of pages con	nature Date peristing cover sheet: 1	
Mail documents to be recorded with required cover sheet information to:		
Commissioner for Patents		
P.O. Box 1450 Alexandria, VA 22313-1450		

07/25/2003 STON11 00000091 010493 GOURLEY K 01 FC:8021 40.00 BA

> PATENT REEL: 014994 FRAME: 0437

ASSIGNMENT

For value received, we, Darryl Paul Butt, Raymond Ashton Cutler, Steven Walton Rynders and Michael Francis Carolan, hereby sell, assign, and transfer to **AIR PRODUCTS AND CHEMICALS, INC.**, a corporation of the State of Delaware, having an office at 7201 Hamilton Boulevard, Allentown, PA 18195-1501, the entire right, title, and interest in and to the invention relating to

METHOD OF FORMING A JOINT

described in our application for Letters Patent of the United States (identified by Docket No. 06067 USA) executed of even date herewith, in and to all Letters Patent which may be issued upon said application, in and to any divisional or reissue applications based thereon, and in and to all Letters Patent upon said invention or improvements which may be granted in foreign countries. We hereby also assign and convey to said **AIR PRODUCTS AND CHEMICALS**, **INC.**, all the rights accruing to us by virtue of the International Convention for the Protection of Industrial Property (Art. 4), including the right to apply for and to have patents issued in its own name.

And we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and the Officials of the Patent Offices of all other countries to issue the Letters Patent of their respective countries to said **AIR PRODUCTS AND CHEMICALS, INC.**, as assignee of the entire right, title, and interest in and to the same.

And we hereby promise and agree to execute all papers and perform all acts necessary to secure to and vest in said **AIR PRODUCTS AND CHEMICALS, INC.**, its successors and assigns, the rights conveyed as herein set forth.

Darryl Paul Butt (L.S.)	Raymond Ashton Cutler (L.S.)
20 In O	26 Juni 2003 Date
Steven Walton Rynders (L.S.)	Philipad Francis Carolan (L.S.) Michael Francis Carolan
1 July 2003	7 July 2003

RECORDED: 07/23/2003

PATENT REEL: 014994 FRAME: 0438