

FORM PTO-1619a  
Expires 06/30/99  
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05-11-2001



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**Conveying Party(ies)**

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Name (line 1) Volker REIFFENRATH

Execution Date  
Month Day Year  
11 30 99

Name (line 2) Matthais BREMER

11 30 99

Name (line 3)

Name (line 4)

**Receiving Party**

☐ Mark if additional names of receiving parties attached

Name (line 1) MERCK PATENT GESELLSCHAFT

MIT BESCHRANKTER HAFTUNG

Darmstadt, Germany

☐ If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)

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**Domestic Representative Name and Address**

Enter for the first Receiving Party only.

Name Millen, White, Zelano & Branigan, P.C.

Address (line 1) 2200 Clarendon Boulevard

Address (line 2) Suite 1400

Address (line 3) Arlington, VA 22201

Address (line 4)

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05/10/2001 LMUELLER 00000305 09452166

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**PATENT**  
**REEL: 011778 FRAME: 0519**

**Correspondent Name and Address**

Area Code and Telephone Number

(703) 243-6333

Name Millen, White, Zelano & Branigan, P.C.

Address (line 1) 2200 Clarendon Boulevard

Address (line 2) Suite 1400

Address (line 3) Arlington, VA 22201

Address (line 4)

**Pages**

Enter the total number of pages of the attached conveyance document including any attachments

# 2

**Application Number(s) or Patent Number(s)**

☐ Mark if additional numbers attached.

Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

**Patent Application Number(s)**

09/452,166

**Patent Number(s)**

If this document is being filed together with a new Patent Application, enter the date the patent application was signed by the first named executing inventor.

Month Day Year

**Patent Cooperation Treaty (PCT)**

Enter PCT application number only if a U.S. Application Number has not been assigned.

PCT

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PCT

PCT

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**Number of Properties**

Enter the total number of properties involved.

# ONE

**Fee Amount**

Fee Amount for Properties Listed (37 CFR 3.41):

\$ 40.00

Method of Payment:

Enclosed ☒

Deposit Account ☐

**Deposit Account**

Enter for payment by deposit account or if additional fees can be charged to the account.)

**Deposit Account Number:**

# 13-3402

**Authorization to charge additional fees:**

Yes ☒

No ☐

**Statement and 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. Charges to deposit account are authorized, as indicated herein.*

LaToria V. Bolling

**Name of Person Signing**



**Signature**

May 7, 2001

**Date**

# ASSIGNMENT

ATTY. DOCKET NO.:  
MERCK 2055

WHEREAS the below named inventor (if only one inventor is named below) or inventors (if plural inventors are named below) hereinafter referred to as the ASSIGNOR invented a certain improvement relating to

## Acetylene derivatives and liquid-crystalline medium

- ☒ for which an application for Letters Patent to be filed in the United States Patent and Trademark Office was executed on even date.  
for which U.S. Application Serial No. 09/452,166 for Letters Patent was filed in the U.S. Patent and Trademark Office on  
December 1, 1999
- ☐ for which an International Application was filed on \_\_\_\_\_ as \_\_\_\_\_, designating the United States.

AND WHEREAS

**MERCK PATENT GESELLSCHAFT  
MIT BESCHRANKTER HAFTUNG  
Darmstadt, Germany**

hereinafter referred to as the ASSIGNEE, is desirous of acquiring the entire right, title, and interest in and to said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues, reexaminations and extensions thereof.



NOW, WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged, ASSIGNOR hereby assigns, sells, and transfers to ASSIGNEE, its assigns and legal representatives, the entire and exclusive right, title and interest in and to said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, and in and to any and all priority and/or convention rights or benefits accruing or to accrue with respect to the filing or securing of patents in the United States and/or any countries foreign thereto, SAID ASSIGNEE, its assigns and legal representatives to have, hold, exercise, and enjoy said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such Letters Patent when granted, including any and all renewals, reissues, reexaminations and extensions thereof, for the use and benefit of ASSIGNEE and its assigns and legal representatives, in as ample and beneficial a manner to all intents and purposes as the ASSIGNOR might or could have held and enjoyed the same, if the assignment had not been made.

AND ASSIGNOR hereby agrees to execute all papers that may be necessary to file applications in the United States and foreign countries for said invention and to assign the same to said ASSIGNEE, its assigns and legal representatives and to execute any other papers that may be needed in connection with filing said applications and securing Letters Patents thereon.

AND ASSIGNOR authorizes and requests the Commissioner of Patents and Trademarks to issue a Letters Patent on said application, and on any and all divisions and continuations thereof, to ASSIGNEE, its assigns and legal representatives, in accordance herewith.

The undersigned hereby grant(s) the law firm of Millen, White, Zelano & Branigan, P.C. the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

IN TESTIMONY WHEREOF this assignment is executed by ASSIGNOR.

|     |  |  |                              |
|-----|--|--|------------------------------|
| 201 | FULL NAME OF SOLE OR FIRST NAMED INVENTOR<br><b>Volker REIFFENRATH</b> | INVENTOR'S SIGNATURE<br> | DATE<br><b>Nov. 30, 1999</b> |
| 202 | FULL NAME OF SECOND JOINT INVENTOR<br><b>Matthias BREMER</b>           | INVENTOR'S SIGNATURE<br> | DATE<br><b>Nov. 30, 1999</b> |
| 203 | FULL NAME OF THIRD JOINT INVENTOR                                      | INVENTOR'S SIGNATURE   | DATE                         |
| 204 | FULL NAME OF FOURTH JOINT INVENTOR                                     | INVENTOR'S SIGNATURE   | DATE                         |
| 205 | FULL NAME OF FIFTH JOINT INVENTOR                                      | INVENTOR'S SIGNATURE   | DATE                         |
| 206 | FULL NAME OF SIXTH JOINT INVENTOR                                      | INVENTOR'S SIGNATURE   | DATE                         |
| 207 | FULL NAME OF SEVENTH JOINT INVENTOR                                    | INVENTOR'S SIGNATURE   | DATE                         |
| 208 | FULL NAME OF EIGHTH JOINT INVENTOR                                     | INVENTOR'S SIGNATURE   | DATE                         |
| 209 | FULL NAME OF NINTH JOINT INVENTOR                                      | INVENTOR'S SIGNATURE   | DATE                         |
| 210 | FULL NAME OF TENTH JOINT INVENTOR                                      | INVENTOR'S SIGNATURE   | DATE                         |
| 211 | FULL NAME OF ELEVENTH JOINT INVENTOR                                   | INVENTOR'S SIGNATURE   | DATE                         |
| 212 | FULL NAME OF TWELFTH JOINT INVENTOR                                    | INVENTOR'S SIGNATURE   | DATE                         |

RECORDED: 05/07/2001

**PATENT**  
REEL: 011778 FRAME: 0521