

## PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	TECHNOLOGY DONATION AGREEMENT
CONVEYING PARTY DATA	
Name	Execution Date
AIR PRODUCTS AND CHEMICALS, INC.	12/30/2003
RECEIVING PARTY DATA	
Name:	MID-AMERICA COMMERCIALIZATION CORP (MACC)
Street Address:	1500 HAYES DRIVE
City:	MANHATTAN
State/Country:	KANSAS
Postal Code:	66502
PROPERTY NUMBERS Total: 1	
Property Type	Number
Patent Number:	8455555
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NAME OF SUBMITTER:	CANDICE R. ROCKETT
Signature:	/Candice R. Rockett/
Date:	12/09/2013
Total Attachments: 9	

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## TECHNOLOGY DONATION AGREEMENT

This Agreement, which shall be effective as of 26 December 2003 ("Effective Date"), is made between AIR PRODUCTS AND CHEMICALS, INC. ("AIR PRODUCTS"), a corporation organized and existing under the laws of the State of Delaware, with offices at 7201 Hamilton Boulevard, Allentown, Pennsylvania 18195-1501, and The MID-AMERICA COMMERCIALIZATION CORPORATION ("MACC"), a non-profit institution organized and existing under the laws of the State of Kansas, with offices at 1500 Hayes Drive, Manhattan, Kansas. 66502

### 1 BACKGROUND

1.1 AIR PRODUCTS is the owner of certain patents and patent applications in the area of Gas to Liquids ("GTL") Technology ("FIELD"). MACC has a proven track record in developing and commercializing donated technologies. MACC has indicated an interest in receiving a donation of AIR PRODUCTS PATENT RIGHTS and in receiving AIR PRODUCTS KNOW-HOW, as both are defined below, related to the FIELD. MACC's interest in the donation is to further MACC's goals and objectives, and particularly to further develop donated technologies through university research and/or to license donated technologies for commercial application to meet market, social and economic needs, while also using donated technologies to enhance educational programs and facilitate the establishment of mutually beneficial relationships between industry and academe. AIR PRODUCTS is willing to donate its rights in the AIR PRODUCTS PATENT RIGHTS and AIR PRODUCTS KNOW-HOW to MACC.

1.2 In consideration of the above premises, and the promises and obligations of the respective Parties set forth below, AIR PRODUCTS and MACC, intending to be legally bound, agree as follows:

### 2 DEFINITIONS

2.1 The terms designated in entire caps (except for the heading of Articles and Paragraphs) shall have the meanings set forth below or set forth in other paragraphs of this Agreement.

2.2 "AIR PRODUCTS AFFILIATES" means any company or entity in which AIR PRODUCTS owns, directly or indirectly, at least fifty percent (50%) of the stock having the right to vote for directors thereof.

2.3 "AIR PRODUCTS PATENT RIGHTS" means the patents and patent applications listed in Appendix A hereof.

2.4 "AIR PRODUCTS KNOW-HOW" means AIR PRODUCTS technical information expressly listed in Appendix B.

2.5 "CONFIDENTIAL INFORMATION" means the valuation of the DONATED PROPERTY performed by or on behalf of AIR PRODUCTS as well as all documents relating to the valuation and how such valuation was determined and calculated. For purposes of clarity, any document listed in Appendix B shall not be construed to be covered by the definition of CONFIDENTIAL INFORMATION.

2.6 "DONATED PROPERTY" means all of the AIR PRODUCTS PATENT RIGHTS and the AIR PRODUCTS KNOW-HOW, taken collectively.

2.7 "MACC AFFILIATES" means any entity in which MACC directly or indirectly owns or controls at least fifty percent (50%) of the equity or other ownership interests of the entity, or any entity in which MACC served as a founder or co-founder.

### 3 ASSIGNMENT OF RIGHTS

3.1 AIR PRODUCTS hereby donates and assigns its entire right, title and interest in DONATED PROPERTY to MACC. Such assignment to MACC includes AIR PRODUCTS' right to enforce AIR PRODUCTS PATENT RIGHTS and to recover damages for any infringement retroactively to the issue date of any Patent included in AIR PRODUCTS PATENT RIGHTS. AIR PRODUCTS agrees, at its expense, to promptly record assignments in favor of MACC with the United States, Canadian, European and any other national patent offices for patents and patent applications covered by AIR PRODUCTS PATENT RIGHTS. Since AIR PRODUCTS KNOW-HOW listed in Appendix B is tangential to the know-how developed by AIR PRODUCTS for its core business, MACC acknowledges and agrees that nothing in this Agreement shall require or be construed to require AIR PRODUCTS to disclose other know-how or other information related to (a) EHTR design technology and software; (b) metal dusting abatement technology; (c) the integrations of the technology of the Field technology with air separation units, natural gas liquefaction units, petrochemical production units, ammonia production units, power production units or helium extraction units; (d) technology related to equipment and processes for the production of synthesis gas or hydrogen; (e) technology related to equipment and processes for the separation, purification or recovery of components from any gas containing stream; (f) technology related to equipment and processes the liquefaction of gas streams or their components and (g) AIR PRODUCTS proprietary thermodynamic data base.

3.2 In addition to the foregoing contribution of the AIR PRODUCTS PATENT RIGHTS and as an additional contribution to MACC, AIR PRODUCTS agrees to pay to MACC the sum of One Hundred Fifty Thousand United States Dollars (US\$ 150,000) within thirty (30) days of the Effective Date in the form of a Restricted Grant, which shall be used by MACC either (a) to pay the costs of prosecution and/or maintenance of AIR PRODUCTS PATENT RIGHTS or, at its discretion, (b) to further its goals and objectives of the donation contemplated in Article 1.

### 4 PATENT AND KNOW HOW ASSISTANCE

4.1 AIR PRODUCTS shall provide reasonable technical assistance to MACC related to the preparation and prosecution of any patent applications relating to improvements of MACC covered by AIR PRODUCTS PATENT RIGHTS or described therein or in AIR PRODUCTS KNOW-HOW which name one or more AIR PRODUCTS employees as inventors, provided that such assistance shall in all cases be provided at times and in a manner that is not unduly disruptive of AIR PRODUCTS' normal course of business. The filing and/or prosecution of any such patent applications under AIR PRODUCTS PATENT RIGHTS shall be at MACC's sole discretion and expense.

4.2 AIR PRODUCTS agrees to cooperate with MACC to the extent AIR PRODUCTS cooperation may be required in the enforcement or defense of any of AIR PRODUCTS PATENT RIGHTS or of any patents obtained pursuant to the preceding paragraph, again provided that such assistance shall be provided at times and in a manner that is not unduly disruptive of AIR PRODUCTS' normal course of business, and further provided reasonable compensation is paid AIR PRODUCTS for the time spent by AIR PRODUCTS employees in these enforcement or defense activities, and for AIR PRODUCTS' reasonable out-of-pocket costs including any necessary travel expenses or accommodation.

4.3 AIR PRODUCTS shall provide reasonable access to MACC, MACC AFFILIATES and their employees to all information relating to KNOW HOW, including relevant lab notebooks, technical data, specifications, drawings, design, testing, and engineering documentation, and similar data helpful in allowing MACC to utilize the DONATED PROPERTY.

4.4 AIR PRODUCTS shall provide MACC with copies (if any) of patent infringement and/or validity analyses and/or opinions prepared by or for AIR PRODUCTS regarding DONATED PROPERTY.

4.5 In order to facilitate the transmission of AIR PRODUCTS KNOW-HOW, AIR PRODUCTS shall make its employees or consultants familiar with the DONATED PROPERTY, contingent upon their availability and willingness, available to MACC for up to five (5) days at times and locations to be agreed upon that are convenient to all parties.

## 5 WARRANTIES, DISCLAIMERS AND INDEMNITIES

5.1 AIR PRODUCTS IS NOT AWARE OF ANY CLAIM OR WRITTEN THREAT OF CLAIM BY ANY THIRD PARTY THAT THE PRACTICE OF AIR PRODUCTS PATENT RIGHTS WILL INFRINGE THIRD PARTY PATENTS OR INTELLECTUAL PROPERTY RIGHTS. OTHER THAN AS SET FORTH ABOVE, AIR PRODUCTS MAKES NO WARRANTIES WITH RESPECT TO FREEDOM FROM ALLEGED INFRINGEMENT OF THIRD PARTY PATENTS OR FREEDOM FROM THIRD PARTY INFRINGERS, AND AIR PRODUCTS SHALL NOT BE UNDER ANY OBLIGATION TO HOLD MACC OR FUTURE LICENSEES, ASSIGNEES OR TRANSFEREES OF MACC HARMLESS AGAINST SUCH ALLEGED INFRINGEMENT OF THIRD PARTY PATENTS.

5.2 AIR PRODUCTS MAKES NO WARRANTIES WITH RESPECT TO THE POTENTIAL EARNING CAPACITY, POTENTIAL REVENUE GENERATION OR OTHER FUTURE FINANCIAL PERFORMANCE OF DONATED PROPERTY FOR ANY PERIOD AFTER THE EFFECTIVE DATE.

5.3 AIR PRODUCTS ASSUMES NO RESPONSIBILITIES WHATSOEVER WITH RESPECT TO THE PRACTICE BY MACC OR ITS LICENSEES, ASSIGNEES OR TRANSFEREES OF AIR PRODUCTS KNOW-HOW AND/OR AIR PRODUCTS PATENT RIGHTS. MACC RELEASES AIR PRODUCTS, INCLUDING ITS OFFICERS, DIRECTORS AND EMPLOYEES, FROM ANY CLAIMS, COSTS OR DAMAGES, INCLUDING SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, UNDER ANY THEORY OF LIABILITY, ARISING AFTER THE EFFECTIVE DATE OUT OF, IN CONNECTION WITH, OR IN THE COURSE OF THE PRACTICE OF DONATED PROPERTY BY MACC, ITS LICENSEES, ASSIGNEES OR TRANSFEREES. WITH RESPECT TO INDEMNIFICATION OF AIR PRODUCTS FOR ACTS

OF MACC'S LICENSEES, ASSIGNEES, OR TRANSFEREES, MACC MAY DISCHARGE THIS DUTY THROUGH USE OF AN INDEMNIFICATION CLAUSE NAMING AIR PRODUCTS AS AN INDEMNIFIED PARTY IN THE LICENSE, ASSIGNMENT, OR OTHER TRANSFER DOCUMENT. THE PARTIES AGREE THAT MACC SHALL ASSUME NO RESPONSIBILITY FOR ANY CLAIMS, COSTS OR DAMAGES ARISING FROM AIR PRODUCTS' USE OF DONATED PROPERTY PRIOR TO THE EFFECTIVE DATE AND THAT NOTWITHSTANDING ANYTHING HEREIN TO THE CONTRARY, AIR PRODUCTS SHALL INDEMNIFY MACC, MACC AFFILIATES, LICENSEES OF MACC AND THEIR RESPECTIVE TRUSTEES, OFFICERS AND EMPLOYEES, FROM ANY CLAIMS, COSTS OR DAMAGES, INCLUDING SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, UNDER ANY THEORY OF LIABILITY, ARISING ON OR BEFORE THE EFFECTIVE DATE OUT OF, IN CONNECTION WITH, OR IN THE COURSE OF THE PRACTICE OF DONATED PROPERTY.

5.4 AIR PRODUCTS REPRESENTS AND WARRANTS THAT IT HAS RIGHT, TITLE AND INTEREST IN AND TO DONATED PROPERTY AND HAS THE AUTHORITY TO ENTER THIS AGREEMENT. AIR PRODUCTS FURTHER REPRESENTS AND WARRANTS THAT IT IS NOT AWARE OF ANY CLAIMS IT HAS (WHETHER ASSERTED OR UNASSERTED) AGAINST THIRD PARTIES ARISING OUT OF ANY CONTRACT NEGOTIATIONS, CONTRACTS, OR ANY OTHER LEGAL ENTITY RELATIONSHIPS WITH SUCH THIRD PARTIES. AS USED IN THIS PARAGRAPH, "CLAIMS" SHALL MEAN A LITIGATION CLAIM, OR A WRITTEN DOCUMENT WITH AN ACTUAL THREAT OF A CLAIM OR A REASONABLE INFERENCE OF A CLAIM. IN ALL OTHER RESPECTS, AIR PRODUCTS PROVIDES THE DONATED PROPERTY "AS IS". AIR PRODUCTS MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY WHATSOEVER. AIR PRODUCTS IS UNAWARE OF ANY CONTRACTS, INCLUDING LICENSES, OPTIONS AND COLLABORATIVE ARRANGEMENTS, RELATING THE DONATED PROPERTY.

5.5 AIR PRODUCTS SHALL NOT REPRESENT, DIRECTLY OR INDIRECTLY, TO ANY THIRD PARTY OR GOVERNMENTAL ENTITY THAT MACC HAS IN ANY WAY APPROVED OF, ENDORSED, OR AGREED TO ANY OF AIR PRODUCTS' CONFIDENTIAL INFORMATION. AIR PRODUCTS SHALL INDEMNIFY AND HOLD MACC HARMLESS FROM AND AGAINST ANY CLAIMS REGARDING THE VALUATION AND DEDUCTIBILITY OF THE DONATED PROPERTY.

5.6 Any licenses that MACC grants with respect to DONATED TECHNOLOGY and any assignment it makes of AIR PRODUCTS PATENT RIGHTS, other than licenses to Kansas State University, other research universities or other research institutions for research purposes only, to the extent allowed by law, will provide as an express condition of the license or assignment that the licensee or assignee (a) assumes all risk, responsibility and liability for any and all claims, expenses and judgments (including attorney's fees) arising out of or in the course of its (or any sublicensees') practice of the DONATED TECHNOLOGY, and (b) will release, indemnify, defend and hold harmless AIR PRODUCTS, AIR PRODUCTS AFFILIATES, MACC and MACC AFFILIATES from any claims, costs or damages, including special, indirect or consequential damages, under any theory of liability, arising out of or in the course of such practice. If MACC, in its sole discretion, requires its licensee or assignee of the AIR PRODUCTS PATENT RIGHTS to purchase and maintain comprehensive general liability insurance, MACC will require that the policy name AIR PRODUCTS and AIR PRODUCTS

AFFILIATES as an additional insured, include a waiver of all rights of subrogation against AIR PRODUCTS and AIR PRODUCTS AFFILIATES, and include, where applicable, a contractual liability endorsement to support the licensee's or assignee's indemnity obligations.

5.7 Nothing in this Agreement shall be construed as conferring by implication or otherwise any license or rights under any patents, trademarks, trade secrets, copyrights or any other intellectual property of AIR PRODUCTS other than the PATENT RIGHTS. AIR PRODUCTS represents that it is not aware of any dominant patent or patent application owned or controlled by, or licensed to, AIR PRODUCTS and, if existing, shall not invoke such rights in any way to restrict the exploitation of the PATENT RIGHTS. AIR PRODUCTS covenants not to sue MACC, MACC AFFILIATES, and any licensees of MACC for practice within the defined scope of claims of PATENT RIGHTS.

## 6 EXPORT OF INFORMATION OR TECHNOLOGY

6.1 MACC will not at any time after the Effective Date knowingly export or re-export any information or software received from AIR PRODUCTS or the direct products of such information or software to any country, person or entity or for any use prohibited by the U.S. Export Administration Regulations, unless properly authorized by the U.S. Government.

## 7 GOVERNING LAW

7.1 This Agreement shall be governed by the laws of the Commonwealth of Pennsylvania excluding those laws pertaining to conflicts of law.

## 8 CONFIDENTIALITY

8.1 MACC agrees to: (i) use all reasonable efforts to prevent the disclosure of CONFIDENTIAL INFORMATION to any party, without AIR PRODUCTS' prior written consent, other than to MACC AFFILIATES and the employees of MACC or MACC AFFILIATES on a need-to-know basis, (ii) take measures that, in the aggregate, are no less stringent than those measures MACC uses to protect the confidentiality of its own confidential information, and (iii) to advise the employees of MACC or MACC AFFILIATES of the confidential nature of the CONFIDENTIAL INFORMATION and of the prohibitions on revealing such CONFIDENTIAL INFORMATION contained herein. If MACC needs to disclose the CONFIDENTIAL INFORMATION to a third party in order for MACC to further develop and commercialize the DONATED TECHNOLOGY and AIR PRODUCTS has agreed to such disclosure, then AIR PRODUCTS will allow the disclosure, provided that, such third party is under confidentiality obligations to MACC consistent with the obligations of this Agreement. If MACC makes a disclosure to a third party under the provisions of this Paragraph 8.1, MACC agrees to be responsible for compliance by such third party with the obligations of this Agreement and for any breach of such obligations by such third party.

8.2 The obligations of Paragraph 8.1 related to confidentiality and nonuse shall not apply if (i) the confidential information at the time of disclosure or in the future becomes public through no breach of this Agreement by MACC; (ii) the confidential information is received from a third party with no obligation of confidentiality; (iii) the information was in MACC's possession at the time of disclosure by AIR PRODUCTS as shown by written record; or (iv) fifteen (15) years has passed since the Effective Date of this Agreement.

8.3 AIR PRODUCTS agrees to allow MACC to retain a copy of the CONFIDENTIAL INFORMATION. MACC agrees to maintain the CONFIDENTIAL INFORMATION in a secure location.

8.4 If MACC, or anyone to whom MACC has transmitted CONFIDENTIAL INFORMATION pursuant to this Agreement, becomes legally compelled to disclose any of the CONFIDENTIAL INFORMATION, or is required to do so by any governmental agency or body, MACC will promptly notify AIR PRODUCTS so that AIR PRODUCTS may seek a protective order or other appropriate remedy and/or waive compliance with the provisions of this Agreement. If a protective order or other remedy is not obtained, or if AIR PRODUCTS agrees to waive compliance with the provisions of this Agreement, MACC or such other person shall furnish only that portion of the CONFIDENTIAL INFORMATION which MACC's legal counsel has determined is legally required.

8.5 The MACC agrees that any announcement of this Agreement through public relations media, news media, advertising media, sales media, or any other public means of communication shall only be done with the express prior written consent and approval of AIR PRODUCTS.

8.6 As of the Effective Date, the obligations of this Article 8 supercedes that certain confidentiality agreement between MACC and AIR PRODUCTS dated 16 December 2003.

## 9 EXECUTION


9.1 The parties have caused this Agreement to be signed in duplicate originals by their duly authorized representatives on the dates set forth below.

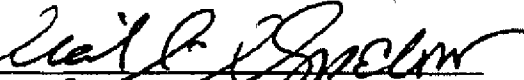
## 10 OTHER

10.1 Other than as set forth herein and that certain confidentiality agreement between MACC and AIR PRODUCTS dated 16 December 2003, AIR PRODUCTS has placed no conditions or restrictions on the gift to MACC of the DONATED PROPERTY.

MID-AMERICA COMMERCIALIZATION  
CORPORATION

AIR PRODUCTS AND CHEMICALS, INC. JCT

By: 

By:  #

Name: Ronald L. Sampson

Name: Cecil C. Chappelow

Title: President & CEO

Title: V.P. Gases & Equip. Technology

Date: 29 December 2003

Date: 30 December 2003



APPENDIX "A"  
AIR PRODUCTS PATENT RIGHTS

Docket Number 06037/06037D EP-1,197,471 (allowed)	Docket Number 06244 USSN 10/083,778 (pending) PCT/IB03/00695 GCC/P/2003/2506	Docket Number 06298 UK 0218815.9 (pending) PCT/GB03/03403 GCC/GB03/03403	Docket Number 06429 USSN 10/715,757 (pending)
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**APPENDIX B  
AIR PRODUCTS KNOW-HOW**

Reactor System Process Design

- POX+EHTR Syngas Reactor Process Specification, rev P1, B.L. Bhatt & J.M. Repasky, 10 Jan 2003.
- POX+EHTR Syngas Reactor Process Specification, rev P, J.M. Repasky, 10 May 2002.
- GTL Syngas Conceptual Impact Summary, J.M. Repasky, 10 Jan 2003.

Reactor System Mechanical Design

- COMPRESS Vessel Design Calculations, Codeware, Inc., 17 December 2003.
- GTL "Bigness" Issues, Richard M. Fetcho, 30 April 2003.
- POX+EHTR+ Design Temperature Constraints, Robert F. Heisler, Jr., 28 April 2003.
- Mechanical Drawings, B. Gulick/R. Heisler, 2002/3.
- GTL/EHTR Materials Selection - Question on Refractory, Brian C. Gulick, 3 December 2002.
- CFD Plan to Support POX+EHTR combination for GTL, anonymous, 14 Oct 2002.
- GTL - Arch Design, Brian Gulick, 3 October 2002.
- GTL Tubes, R. F. Heisler, 5 June 2002.
- GTL - Review of Process Design Concept, W. C. Buchter, 30 May 2002.
- Main Changes Required to the Design of the POX/EHTR Reactor, anonymous, undated.

Risk Management

- Oct 2002 GTL Syngas POX+EHTR Plus TRMP Review Meeting Minutes, [includes GTL Syngas: POX+EHTR Plus New Technology, Non-Project Specific, Technical Risk Statement (TRS) & Technical Risk Management Plan (TRMP)], J.M. Repasky, 11 Oct 2002.
- Draft POX+EHTR+ TRMP, J.M. Repasky, 13 Sept 2002.

Metal Dusting

- Summary Report on Steam Injection, X.D. Peng & John Repasky, 15 Jan 2003.
- Corrosion Resistance of High Temperature Alloys, US2002/0079023(A1), Haldor Topsoe, H. Ib Alstrup, B. Chorkendorff, 27 June 2002.
- Surface Engineered Coatings for Metal Dusting - Corrosion 2001 #01387, G. T. Bayer, 15 March 2001.
- A Low Coking and Carburization Resistant Coating for Ethylene Pyrolysis Furnaces, Westaim Surface, T. Redmond, Y. Chen, A. Bailey, J. Page, 15 March 2001.
- The Use of Aluminide Diffusion Coatings to Improve Carburization Resistance, Diffusion Alloys Limited, A. B. Smith, A. Kempster, A. Lambourne, J. R. Smith, 15 March 2001.
- Estimating Metal Dusting Attack on Stainless Steel Alloys in Syngas Environments, S. W. Dean, 2001.
- Metal Dusting - An Overview of Current Literature, R.T. Jones & K.L. Baumert, 2001.
- Diffusion Method for Coating High Temperature Nickel Chromium Alloy Products, US 6139649, K. A. Wynns, 31 October 2000.

- The Effect of Temperature and Gas Composition on the Metal Dusting Susceptibility of Various Alloys-Corrosion 2000, paper 00532, A. S. Fabiszewski, W. R. Watkins, J. J. Hoffman, S. W. Dean, 2000.
- Chromium-Silicon Diffusion coating, US 5972429, G. T. Bayer, K A. Wynns, 26 October 1999.
- Diffusion coated Ethylene Furnace Tubes, US 5873951, Alon Surface Technologies, K. A. Wynns, G. T. Bayer, 23 February 1999.
- Materials Experience in Methanol Reforming Units - Corrosion 97 #493, Corrosion 97, Baumert, K.L. Baumert, J. J. Hoffman, 1997.

Additional Ideas (Invention Concepts)

- 5706 - ATR/EHTR for GTL Syngas Generation with O2 Injection after ATR to Boost EHTR Shell Side Temperature, Vince White, Rodney John Allam, 25 April 2003.
- 5333 - Soot Removal System, William R. Licht, Dennis M. Brown, Shankar Nataraj, Xiang-Dong Peng, John M. Repasky, Tsun-Chiu R. Tsao, 7 March 2003.
- 4954 - Use of Syngas Recycle Injection in RWGS for EHTR/GTL Integration, Barry W. Diamond, Bharat L. Bhatt, 15 October 2002.
- 4450 - POX+EHTR+: CO2 Mixer Design, John M. Repasky, 22 January 2002.
- 4170 - Improvements to GTL Reactor Off-Gas Recycle System, Rodney John Allam, 5 February 2002.