

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AIR PRODUCTS AND CHEMICALS, INC.,
Petitioner

v.

EVONIK OPERATIONS GMBH and EVONIK CORPORATION,
Patent Owner

Case IPR2024-00611
Patent 10,471,380

PETITIONER'S UPDATED EXHIBIT LIST

UPDATED EXHIBIT LIST

AP-1001	U.S. Patent No. 10,471,380 to Priske (“the ’380 patent”)
AP-1002	Prosecution History of the ’380 Patent (“the Prosecution History”)
AP-1003	Declaration of Dr. Richard W. Baker
AP-1004	<i>Curriculum Vitae</i> of Dr. Richard W. Baker
AP-1005	November 29, 2022 Complaint in <i>Evonik Operations GmbH et al. v. Air Products and Chemicals, Inc. et al.</i> , C.A. No. 1:22-cv-01543-UNA (D. Del.)
AP-1006	U.S. Patent No. 8,999,038
AP-1007	Scholz, Marco et al., <i>Structural optimization of membrane-based biogas upgrading processes</i> , J. Membr. Sci., 474 (Available online 28 September 2014), 1-10 (“Scholz”)
AP-1008	Japanese Patent Application No. JP2009-242773 (“Tsuchida”)
AP-1009	Qi, Runhong et al., <i>Membrane system design for multicomponent gas mixtures via mixed-integer nonlinear programming</i> , Comput. Chem. Eng., 24 (2000) (“Qi”)
AP-1010	Datta, Anjan K., <i>Optimization of membrane unit for removing carbon dioxide from natural gas</i> , J. Membr. Sci., 283 (2006), 291-300 (“Datta”)
AP-1011	Machine translation of Japanese Patent Application No. JP2009-242773
AP-1012	Zhang, Yuan et al., <i>Current status and development of membranes for CO₂/CH₄ separation: A review</i> , Int. J. Greenhouse Gas Control, 12 (2013), 84-107 (“Zhang”)

AP-1013	Baker, Richard W., <i>Membrane Technology and Application</i> (3d Ed. 2012)
AP-1014	U.S. Patent No. 7,968,758
AP-1015	Baker, Richard W. et al., <i>Permeability, permeance, and selectivity: A preferred way of reporting pervaporation performance data</i> , J. Membr. Sci., 348 (2010), 346-352
AP-1016	Alshehri, Ali et al., <i>Membrane Systems Engineering for Post-combustion Carbon Capture</i> , Energy Procedia, 37 (2013), 976-985
AP-1017	CAS Registry for Polymers 9046-51-9 and 134119-41-8
AP-1018-1028	RESERVED
AP-1029	February 23, 2023 Waiver of the Service of Summons in <i>Evonik Operations GmbH et al. v. Air Products and Chemicals, Inc. et al.</i> , C.A. No. 1:22-cv-01543-MN (D. Del.)
AP-1030	July 18, 2023 Scheduling Order in <i>Evonik Operations GmbH et al. v. Air Products and Chemicals, Inc. et al.</i> , C.A. No. 1:22-cv-01543-JPM (D. Del.)
AP-1031	February 21, 2024 docket sheet for <i>Evonik Operations GmbH et al. v. Air Products and Chemicals, Inc. et al.</i> , C.A. No. 1:22-cv-01543-JPM (D. Del.)
AP-1032	2023 Comparison of Districts Trial Statistics
AP-1033	<i>Memorandum: Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation</i> (June 21, 2022).
AP-1034	Declaration of June Munford
AP-1035	Declaration of Nathaniel E. Frank-White

AP-1036	Declaration of Luaine Bandounas
AP-1037	Scholz, Marco et al., <i>Structural Optimization of membrane-based biogas upgrading processes</i> , J. Membr. Sci. http://dx.doi.org/10.1016/j.memsci.2014.08.032 , Authors Accepted Manuscript (from Dr. Richard Baker)
AP-1038	U.S. Patent App. Pub. No. 2013/0098242 (“Ungerank”)
AP-1039	January 20, 2025 deposition of Dr. Geoffrey Geise
AP-1040	March 28, 2025 deposition of Dr. Geoffrey Geise
AP-1041	Supplemental Declaration of Dr. Richard W. Baker
AP-1042	EU 3240620 patent
AP-1043	Evonik opposition appeal brief for EU 3240620 patent
AP-1044	Machine translation of Evonik opposition appeal brief for EU 3240620 patent
AP-1045	Prosecution History of U.S. Patent 8,999,038
AP-1046	Huang, Yu et al., <i>Pressure ratio and its impact on membrane gas separation processes</i> , Journal of Membrane Science 463 (2014) 33–40
AP-1047	Baker, Richard W. et al., <i>Natural Gas Processing with Membranes: An Overview</i> , Ind. Eng. Chem. Res. 2008, 47, 2109–2121
AP-1048	Bhatti, Inamullah et al., <i>Polymeric Membranes Used in Natural Gas Processing to Separate Carbon Dioxide: the Facing Problems and Solutions</i> , Journal of Environmental Science and Engineering, ISSN 1934-8932, Jan. 2010, Volume 4, No.1 (Serial No. 26)

AP-1049 Staudt-Bickel, Claudia et al., *Improvement of CO₂/CH₄ separation characteristics of polyimides by chemical crosslinking*, Journal of Membrane Science 155 (1999) 145-154

AP-1050 Petitioner's Demonstratives

Respectfully submitted,

Dated 5/21/2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on May 21, 2025, a complete and entire copy of this Petitioner's Updated Exhibit List and Exhibit 1050 were provided by email to the Patent Owner by serving the correspondence email address of record as follows:

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