UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DECLARATION OF DR. JAMES A. RITTER IN SUPPORT OF PATENT OWNER PRELIMINARY RESPONSE

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I, James A. Ritter, make this declaration based on my personal knowledge and in support of Patent Owner's Preliminary Response to BASF's Petition for Inter Partes Review. If sworn as a witness, I could and would testify to the matters referred to below.

I. Qualifications

1. I am the L. M. Weisiger Professor of Engineering and a Carolina Distinguished Professor in the Department of Chemical Engineering at the University of South Carolina. A copy of my resume is attached as Appendix A to this declaration.

2. I received my associates degree in mathematics and science at Onondaga Community College in Syracuse, New York in 1980. I earned bachelor's and master's degrees in chemical engineering from the State University of New York at Buffalo in 1983 and 1985, respectively. The State University of New York at Buffalo awarded me a Ph.D. degree in chemical engineering in 1989.

3. After completing my education, I worked as a senior engineer at the Westinghouse Savannah River Company, Savannah River Technology Center, in Aiken, South Carolina from 1989 to 1993.

4. In 1993, I joined the faculty of the University of South Carolina, Department of Chemical Engineering, as an assistant professor. I became a tenured associate professor in 1999 and a full professor in 2003. Today, I am the

L.M. Weisiger Professor of Engineering and a Carolina Distinguished Professor. My research at the University focuses on the physio-chemical phenomena of adsorption, including adsorption processes for gas separation and purification, nanoporous adsorbents for adsorptive separation and purification, and the measurement of diffusion rates in nanoporous adsorbents. Under my direction, my laboratory at the University has collaborated with numerous industry partners in researching adsorbents and their commercial uses. Past and current research partners include, for example, MeadWestvaco (which is the predecessor of Ingevity), BASF Corporation, Exxon Research and Engineering Company, BP-Amoco Chemical Company, Shell, NASA, the Department of Energy, and the Idaho National Engineering and Environmental Laboratory, to name a few.

5. I am a member of the prestigious American Association for the Advancement of Science and a fellow of the leading professional organizations for chemists and chemical engineers, the American Chemical Society and American Institute of Chemical Engineers, respectively.

6. I am a named inventor on four patents and author of nine copyrighted works.

7. I have published and contributed to hundreds of technical papers, books and book chapters, conference proceedings, and other publications in my

field. These include publications concerning adsorption of volatile organic compounds on activated carbon adsorbents, such as:

C. E. Holland, S. A. Al-Muhtaseb, and J. A. Ritter, "Adsorption of C1 to C7 Normal Alkanes on BAX Activated Carbon: 1. Potential Theory Correlation and Adsorbent Characterization," Ind. Eng. Chem. Res., 40, 338-346 (2001); and

S. A. Al-Muhtaseb, C. E. Holland and J. A. Ritter, "Adsorption of C1 to C7 Normal Alkanes on BAX Activated Carbon: 2. Statistically-Optimized Approach for Deriving Thermodynamic Properties from the Adsorption Isotherm", Ind. Eng. Chem. Res., 40, 319-337 (2001).

8. I have also authored publications concerning the adsorption of butane, including on activated carbon adsorbents, such as:

S. A. Al-Muhtaseb and J. A. Ritter, "New Methodology for the Measurement and Analysis of Adsorption Dynamics: Butane on Activated Carbon," Ind. Eng. Chem. Res., 43, 7075-7082 (2004);

Y. Liu, C. E. Holland and J. A. Ritter, "Pressure Swing Adsorption-Solvent Vapor Recovery-III: Comparison of Simulation with Experiment for the Butane-Activated Carbon System," Sep. Sci. Tech., 34, 1545-1576 (1999);

Butane Vapor Recovery by Pressure Swing Adsorption, AIChE Annual Meeting, Los Angeles, CA, November 1997, contributed;

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