

## **FOR IMMEDIATE RELEASE**

### **ZeaChem Validates its Core Biorefining Technology**

*Company Produces Commercial Grade Ethyl Acetate*

**Lakewood, Colo. – April 21, 2010** – ZeaChem Inc., a developer of biorefineries for the conversion of renewable biomass into sustainable fuels and chemicals, today announced it has produced commercial grade ethyl acetate, thereby proving its core technology platform. Ethyl acetate is a widely-used chemical intermediate that can be sold directly to chemical manufacturers or converted into ethanol.

The achievement marks the final milestone in proving the core components of the company's biorefining platform to stakeholders in the fuel and chemicals industries. In February, ZeaChem announced its 10,000 times scale increase in fermentation to acetic acid, and the concentration of that broth into glacial acetic acid, a salable product. Through an esterification reaction process validated externally by process expert Sulzer Chemtech, the company has converted the glacial acetic acid into ethyl acetate. Both the concentration and esterification processes are commercially available from multiple vendors.

"ZeaChem has successfully validated its core biorefining technology from fermentation scale-up to concentration of glacial acetic acid and now ethyl acetate production," said Jim Imbler, president and chief executive officer of ZeaChem. "These results demonstrate ZeaChem's ability to produce another valuable bio-based intermediate chemical on the road toward cellulosic ethanol production."

"By applying our broad process solution expertise we have successfully produced commercial grade ethyl acetate in our test center which allows the scale-up of ZeaChem's ethyl acetate process using industrial equipment," said Antonio Garcia, Business Development Manager - Process Technology at Sulzer Chemtech USA, Inc.

Ethyl acetate is primarily used as a solvent in paints, printing inks, pharmaceuticals and packaging and, through hydrogenation, can be refined into ethanol. The annual market for ethyl acetate is approximately \$2.2 billion globally and \$115 million in the U.S. ZeaChem's biological pathway provides a lower cost route for the production of ethyl acetate as compared to the currently used ~\$4/MMBTU natural gas feedstock based processes.

# ZeaChem

With the core technology proven, ZeaChem is now testing the downstream applications including hydrogenation, which is the final step in making cellulosic ethanol. The company intends to build a commercial biorefinery upon successful operations at its 250,000 gallon-per-year facility, which is proposed to be built in Boardman, Oregon. The core technology of the facility will begin to come online in 2010.

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## **About Sulzer Chemtech Ltd.**

Sulzer Chemtech Ltd., a member of the Sulzer Corporation, with headquarters in Winterthur, Switzerland, is a leading provider of process technology, components and services for thermal separation, as well as mixing and dispensing systems. Sulzer Chemtech maintains a worldwide presence for sales, engineering, production as well as installation and maintenance services for the oil and gas, hydrocarbon processing and chemical process industry, and has some 2800 employees worldwide.

Sulzer Chemtech's business unit 'Process Technology' is an expert in film evaporation, distillation, crystallization, liquid-liquid extraction, membrane separation processes and polymer technology. Sulzer Chemtech offers process solutions, engineering services, process equipment and turn-key modular plants with guaranteed performance to the pharmaceutical, speciality chemicals, food and biotechnology industries.

Sulzer Chemtech has vast experience in the biofuels industry with hundreds of installations world-wide for ethanol purification by distillation and integrated membrane systems for the final drying step. Sulzer Chemtech is greatly involved in cellulosic and advanced biofuels industries supporting their fast pace towards commercialization. Specifically the expertise is applied in liquid/liquid extraction for acid recovery and purification as well as its profound know-how in extractive, azeotropic and reactive distillation throughout conceptual design, pilot plant testing, process optimization, process scale-up, design and construction.

For more information please visit our website: [www.sulzerchemtech.com](http://www.sulzerchemtech.com)

## **About ZeaChem Inc.**

ZeaChem Inc. has developed a cellulose-based biorefinery platform capable of producing advanced fuels and intermediate chemicals. ZeaChem's indirect approach leapfrogs the yield and carbon dioxide (CO<sub>2</sub>) problems associated with traditional and cellulosic based biorefinery

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processes. In addition, ZeaChem has a significant capital cost advantage compared to other cellulosic technologies. By efficiently extracting the most energy possible from biomass feedstocks, ZeaChem significantly increases output while reducing both production costs and environmental impacts. Incorporated in 2002, ZeaChem is headquartered in Lakewood, Colo. and operates a research and development laboratory facility in Menlo Park, Calif.

Please visit [www.zeachem.com](http://www.zeachem.com) for more information.

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