

## Cargill's dielectric transformer oil made from natural esters wins Presidential Green Chemistry Award

***“Knowing that the work we’ve done has made the world a better place....well.... that puts it over the top for me.”***

–Kevin Rapp, Cargill senior chemist

**MINNEAPOLIS – (December 11, 2013)** Today in Washington, D.C. Cargill was awarded a 2013 Presidential Green Chemistry Challenge Award from the U.S. Environmental Protection Agency (EPA) for its technological innovation in developing Envirotemp™ FR3™ transformer oil made from natural esters.

These prestigious awards—which recognize the development of new technologies that incorporate the principles of green chemistry into the design, manufacture, and use of chemicals—are presented annually in five different focus areas. Cargill’s award came in the Design of Greener Chemicals focus area.

[FR3](#) fluid is a soybean-oil based product for use as a coolant and insulator in high-voltage electric transformers. For the past 30 years, mineral oil has been the dominant dielectric fluid used in transformers. However, mineral oil is flammable and can be toxic to the environment.

FR3 fluid is much less flammable than mineral oil; it biodegrades easily and is carbon neutral, nontoxic and non-hazardous in soil and water\*—and it offers superior performance to mineral oil. FR3 fluid can handle a much higher rise in temperature than mineral oil, which means manufacturers can design FR3 fluid-filled transformers 15-20 percent smaller and can deliver up to 20 percent overload capacity. What’s more, FR3 fluid actually protects the transformer insulation paper, making it last longer—in fact, five to eight times longer than transformers filled with mineral oil.

The various performance and environmental advantages of FR3 fluid have been validated by a variety of agencies and organizations, including the EPA and Underwriters Laboratory—but receiving the Presidential Green Chemistry Challenge Award represents a new level of recognition.

The EPA estimates that, each year, the innovations developed by the previous 88 award winners eliminate the production of enough hazardous chemicals and solvents annually (825 million pounds) to fill a train of railroad tank cars 47 miles long and save 27 billion gallons of water (as much as used by 820,000 people).

“Developing a new product from the ground up—and earning some acceptance in the marketplace—is pretty satisfying work in itself,” said Kevin Rapp, a senior chemist for Cargill and one of the scientists and engineers who developed FR3 fluid. But winning this EPA award, and knowing what it represents, means much more to Rapp.

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This is second Presidential Green Chemistry Challenge Award Cargill has won in the past six years. Its [BiOH™ brand polyols](#), the first commercially successful biobased polyols used in polyurethane foam cushioning won in 2007.



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#### **About Envirotemp™ FR3™ natural ester dielectric fluid**

FR3 fluid is the leading natural esters-based dielectric oil, currently installed in over 500,000 transformers on six continents. Launched in 1998, FR3 fluid offers a fire safe, environmentally preferred dielectric fluid that is available in many major regions around the world. FR3 fluid has been recognized by the International Electrotechnical Commission, FM Global, Underwriters Laboratories (UL), and the National Electrical Code (NEC).

FR3 fluid was originally formulated in the mid-nineties by Eaton's Cooper Power Systems. Cargill and Cooper continued to co-develop FR3 fluid over the next decade. In June of 2012, Cargill purchased all the data, information and intellectual property rights for FR3 fluid, completely taking over the business.

#### **About Cargill Industrial Specialties**

Cargill Industrial Specialties is the largest Business Unit within Cargill that is exclusively focused on providing bio-based solutions to industrial markets, including dielectric fluid, paints, inks and coatings, lubricants, construction and oilfield chemicals, consumer products, flexible foam and other diverse applications in the chemical industry.

**About Cargill**

Cargill provides food, agriculture, financial and industrial products and services to the world. Together with farmers, customers, governments and communities, we help people thrive by applying our insights and nearly 150 years of experience. We have 142,000 employees in 67 countries who are committed to feeding the world in a responsible way, reducing environmental impact and improving the communities where we live and work. For more information, visit [Cargill.com](https://www.cargill.com) and our [News Center](#).

*\*BEES® 4.0 lifecycle analysis.*