

Solvay Streamlines Access to Aquivion® PFSA Portfolio with New Global Distributor and Expanded Product Line

Solvay names the life science business of Merck KGaA, Darmstadt, Germany as global distributor of its high-performance PFSA product offering for broad applications in the worldwide Cleantech industry

Alpharetta, Ga., May 17, 2016 – Solvay Specialty Polymers, a leading global supplier of high-performance thermoplastics, fluoropolymers and specialty materials, has named the life science business of Merck KGaA, Darmstadt, Germany, which operates as MilliporeSigma in the United States and Canada, to be the authorized global distributor of its high-performance Aquivion® perfluorosulfonic acid (PFSA) product line. Solvay's innovative materials technology is a key enabler for electrical storage and conversion devices, such as fuel cells, electrolyzers and flow batteries used in conjunction with zero-emission electricity sources. Coinciding with the new distribution agreement, Solvay also expanded its Aquivion® portfolio and now offers the industry's broadest range of PFSA compositions and product forms, which includes extruded membranes, dispersions, powders and moldable pellets.

“With this key partnership, we can now supply our state-of-the-art PFSA materials within a matter of days to industry developers and researchers throughout the world,” said Matthias Gebert, global product and application manager at Solvay Specialty Polymers. “This arrangement advances Solvay's ambition to support both large and small innovators seeking functionalized PFSA materials to help them surmount challenges like emission-free mobility, large-capacity renewable electricity storage, environmentally-friendly chemical processing, efficient large-format OLED screens and other solutions aimed at combating metropolitan pollution and global warming.”

Solvay's expanded Aquivion® PFSA portfolio introduces a broad range of equivalent weights (EW), enabling new product and performance options. The short side-chain chemistry of its low EW PFSA grades, for example, delivers significantly higher electrochemical functionality per unit mass than competitive PFSA products. Meanwhile, the higher crystallinity of Solvay's high EW grades helps improve the mechanical robustness and durability of end-use applications.

Solvay's expanded Aquivion® portfolio also signals the availability of PFSA materials in a broader range of physical forms, including:

- **Membranes:** Aquivion® E98-15S is an extruded PFSA membrane for electrochemical hydrogen compression, or dynamically operated water electrolyzers that deliver high-pressure hydrogen in a single step without any moving parts.
- **Dispersions:** Aquivion® D98-25BS and D72-25BS dispersions broaden Solvay's range of copolymer compositions. Potential applications encompass polymer electrolyte membrane (PEM) fuel cell electrodes; cast ion exchange membranes used in high-capacity, multi-hour storage batteries for renewable energy; production of superacid catalysts; and surface treatment of polytetrafluoroethylene (PTFE) membranes used to reduce de-wetting of industrial liquid purification units.
- **Powders:** Aquivion® PW79S, PW87S and PW98 grades represent the first powder-form PFSA in Solvay's portfolio. They offer greater chemical resistance than conventional exchange resins, which is critical for withstanding exposure to aggressive environments. These powder grades can serve directly as solid acid catalysts or ion exchange resins.

- Pellets: Aquivion® P87S-SO2F and P98-SO2F perfluorosulfonic fluoride (PFSA) resins signify Solvay's first two melt-processable precursor grades. These high-performance materials expand options for fabricating high-purity, custom-molded shapes that become reactive components in chemical applications, such as pure-polymer acid catalysts.

Easily access the exceptional Aquivion® PFSA portfolio for your lab evaluation at: www.sigmaaldrich.com.

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About the Life Science Business of Merck KGaA, Darmstadt, Germany

The life science business of Merck KGaA, Darmstadt, Germany, which operates as MilliporeSigma in the U.S. and Canada, has 19,000 employees and 72 manufacturing sites worldwide, with a portfolio of more than 300,000 products enabling scientific discovery.

Merck KGaA, Darmstadt, Germany completed its \$17 billion acquisition of Sigma-Aldrich in November 2015, creating a leader in the \$130 billion global life science industry.

Merck KGaA, Darmstadt, Germany is a leading company for innovative and top-quality high-tech products in healthcare, life science and performance materials. The company has six businesses – Biopharmaceuticals, Consumer Health, Allergopharma, Biosimilars, Life Science and Performance Materials – and generated sales of €11.3 billion in 2014. Around 50,000 employees work in 66 countries to improve the quality of life for patients, to foster the success of customers and to help meet global challenges.

Merck KGaA, Darmstadt, Germany is the world's oldest pharmaceutical and chemical company – since 1668, the company has stood for innovation, business success and responsible entrepreneurship. Holding an approximately 70 percent interest, the founding family remains the majority owner of the company to this day. Merck KGaA, Darmstadt, Germany operates as EMD Serono, MilliporeSigma and EMD Performance Materials in the U.S. and Canada.

About Solvay

Solvay Specialty Polymers manufactures over 1500 products across 35 brands of high-performance polymers – fluoropolymers, fluoroelastomers, fluorinated fluids, semi-aromatic polyamides, sulfone polymers, aromatic ultra-high performance polymers, high-barrier polymers and cross-linked high-performance compounds – for use in Aerospace, Alternative Energy, Automotive, Healthcare, Membranes, Oil and Gas, Packaging, Plumbing, Semiconductors, Wire & Cable, and other industries. Learn more at www.solvayspecialtypolymers.com.

An international chemical and advanced materials company, Solvay assists its customers in innovating, developing and delivering high-value, sustainable products and solutions which consume less energy and reduce CO2 emissions, optimize the use of resources and improve the quality of life. Solvay serves diversified global end markets, including automotive and aerospace, consumer goods and healthcare, energy and environment, electricity and electronics, building and construction as well as industrial applications. Solvay is headquartered in Brussels with about 30,000 employees spread across 53 countries. It generated pro forma net sales of € 12.4 billion in 2015, with 90 percent made from activities where it ranks among the world's top 3 players. Solvay SA (SOLB.BE) is listed on Euronext in Brussels and Paris (Bloomberg: SOLB.BB - Reuters: SOLB.BR).

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In addition to naming the life science business of Merck KGaA as an authorized global distributor of its high-performance Aquivion® perfluorosulfonic acid (PFSA) product line, Solvay Specialty Polymers also unveiled a significant expansion of its Aquivion® portfolio. The company now offers the industry's broadest range of PFSA polymer compositions targeting emission-free mobility, large-capacity renewable electricity storage, environmentally-friendly chemical processing, efficient large-format OLED screens and other solutions aimed at combating metropolitan pollution and global warming. Photo courtesy of Solvay Specialty Polymers.