

NOTES TO THE EDITORS

Solvay's Strategic Business Unit Specialty Polymers offers today one of the broadest selections of unique high-performance polymers. This selection contains among others polymers combining very strong mechanical properties and very high temperature resistance and products with outstanding chemical inertness, high purity and dielectric qualities. These plastics open the way to numerous applications to replace traditional materials for highly demanding applications. Among their main outlets are critical applications in aircraft and aerospace, oil & gas extraction, automotive applications, membranes for water purification and proton exchange membranes, battery binders and also dental and surgical objects, implantable medical devices, membranes for medical applications, colostomy bags, catheters and pouches or blister packaging for pharmaceuticals. Its strategy is based on creating and capturing growth in high-performance polymers, innovation and globalization and selective capacity extensions. In all, more than 1000 innovative projects are currently underway and more than 200 patents were filed in the last five years.

Water treatment

Solvay's Strategic Business Unit Specialty Polymers produces among others materials used to fabricate water filtration membranes used in water purification plants. The filter membranes allow the passage of water, but prevent the passage of harmful bacteria and pathogens. These materials can be used to produce fresh water for human consumption from surface, ground, brackish and salty waters. In the latest United Nations World Water Development Report (March 2009) fresh water demand is estimated to grow by about 64 billion cubic meters every year due to world population growth.

Among the products and applications already used in microporous membranes for water treatment are [Solef® PVDF](#) (polyvinylidene fluoride), [Halar® ECTFE](#) (Ethylene/chlorotrifluoroethylene copolymer), [Udel® PSU](#) (polysulfone) and [Veradel® PESU](#) (polyethersulfone).

Energy

Solvay's Strategic Business Unit Specialty Polymers also has a large selection of products for energy applications. These products are helping to increase energy-efficiency or decrease its carbon intensity and this way help to decrease the ecological footprint of human activity. Due to the increase of the global population and the need to limit greenhouse gas emissions in order to mitigate climate change, global demand for low carbon energy sources and applications is set to increase substantially.

An example in the field of promising new energy technology applications are Proton Exchange Membrane (PEM) Fuel Cells which can achieve better performance by using [Aquivion™ PFSA](#) (perfluoro sulfonic acid polymer) membranes. Hydrogen-powered PEM Fuel Cells produce clean electric power with a higher efficiency than combustion engines. Solvay has recently [announced](#) it will build one of the largest PEM Fuel Cells in the world on the SolVin site near Antwerp, Belgium. This installation with an electric power capacity of up to 1.7 MW will demonstrate the robustness of Solvay's innovative specialty polymers in the harsh conditions inside a PEM Fuel Cell.

Another example are Lithium-Ion batteries in which the newest grades of [Solef® PVDF](#) (polyvinylidene fluoride) used as binder increase the energy density by up to 40%, decreasing cost and weight. Decreasing cost and increasing energy efficiency of the Lithium-ion batteries makes more mobile and automotive applications possible.

A third example is [Halar® ECTFE](#) (Ethylene/chlorotrifluoroethylene copolymer) which can be applied as ultra-resistant protection film on the front-sheets of photovoltaic cells. This solution is used to protect the ultrathin photovoltaic cells on the solar-powered airplane Solar Impulse. Solef®/Hylar® PVDF and Halar® ECTFE have also been specified widely for the back-sheets of solar PV panels.

Solvay's Strategic Business Unit Specialty Polymers encompasses three companies, Solvay Solexis, Solvay Advanced Polymers and Solvay Padanaplast and the PVDC business of Vinyls producer SolVin. Solvay Solexis is a major provider of high-end fluorinated material solutions. Solvay Advanced Polymers produces high-performance and ultra-performance plastics. Padanaplast is a world leader in crosslinking and flame retardant compounds in selected and sustainable markets. These companies are fully-owned subsidiaries of the Solvay group. SolVin is a joint venture of Solvay (75%) and BASF (25%) and is a leader on the PVDC market worldwide and on the Vinyls market in Europe. Visit [Solvay Solexis](#), [Solvay Advanced Polymers](#), [Solvay Padanaplast](#) and the [PVDC website](#) for more information.