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Solvay's High-Flow, Biocompatible Radel® R-5000 PPSU Helps Biorep Technologies Improve its Industry-Recognized Ricordi Chamber

Alpharetta, Ga., Feb. 11, 2016 – Solvay Specialty Polymers, a leading global supplier of high-performance thermoplastics, announced today that its Radel® R-5000 polyphenylsulfone (PPSU) helped Biorep Technologies innovate a new, improved model of its patented Ricordi chamber, used to isolate healthy pancreatic tissue cells for clinical transplants. Solvay's tough, transparent, biocompatible polymer replaces polyetherimide (PEI) as the chamber material to deliver superior moldability, higher transparency and improved resistance to repeated steam sterilization.

Named after its inventor, Camillo Ricordi, the chamber is a transparent repository with a fastened cover that works in tandem with Biorep's Ricordi Islet Isolator machine. The combined platform enhances the disassembling of pancreatic tissue via a combined enzymatic and mechanical digestion while preserving endocrine cell cluster integrity. In more practical terms, the chamber enables isolation of large numbers of insulin-producing cells (islet cells) from the human pancreas for clinical transplants aimed at reversing diabetes in recipients. Biorep's Ricordi chamber is used by laboratories worldwide to prepare clinical islet transplants.

"Originally produced out of machined stainless steel, Dr. Ricordi's chamber immediately became an emblem of state-of-the-art medical innovation," said Felipe Echeverri, managing director for Biorep Technologies. "While our decision to injection mold the chamber from PEI signaled an important step in the chamber's evolution, the shift to Solvay's Radel® R-5000 PPSU enables entirely new design options for replacing the chamber's metal fittings and improving its overall performance, functionality and reliability."

Shortage of PEI initially prompted Biorep to seek an alternative that could deliver similar or better performance as PEI. Their search led them to select Radel® R-5000 PPSU, which Echeverri said exceeds their expectations. Solvay's material, for example, offers comparatively higher flow to allow fabrication of finer features. Specifically, it enabled Biorep to eliminate three stainless steel fittings on the top and bottom of its design by instead allowing them to become another molded part of the polymer chamber. In addition to saving time and money, this eliminated the risk of cracked parts caused by the disparate rate of thermal expansion between steel and polymer.

In addition, Radel® R-5000 PPSU offers much greater resistance than PEI to steam sterilization. Solvay's material has been tested to withstand 1,000 autoclave cycles, as opposed to the 100 cycles the PEI-based chamber had delivered. Radel® R-5000 PPSU further offers improved transparency, which is important to monitor the digestion process within the Ricordi chamber. It also delivers exceptional toughness and hydrolytic stability at high temperatures.

Radel® R-5000 PPSU has been tested under ISO 10993 biocompatibility standards for cytotoxicity, irritation and acute systemic toxicity, and a master access file (MAF) for medical devices is on record with the U.S. Food and Drug Administration (FDA).

Solvay Specialty Polymers' experience as a reliable materials supplier in the healthcare field spans more than 25 years. The company is a leading manufacturer of healthcare plastics, offering a broad range of high-performance medical-grade plastics for devices, instruments, and equipment. Solvay also offers a family of Solviva® Biomaterials for use in a range of implantable devices.

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About Biorep Technologies

Biorep is a full-service, ISO 13485-certified and FDA-compliant product development company with over 19 years of experience providing complete development services for medical and life sciences companies. Our services include human factors engineering, user interface design, systems engineering (mechanical, electrical, software), usability testing, pilot production support, and regulatory compliance.

Located in Miami, Biorep's unique facilities consist of a development center featuring design, development, assembly, and test facilities. Our clients include universities and Fortune 500 companies. Our success and longevity in the product development industry is evidence that we are committed to delivering results and exceeding the expectations of our clients.

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. In 2014, the company posted pro forma net sales of close to € 12 billion, 90% of which was generated 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**).

Press Contacts

Aaron Wood

AH&M Marketing Communications
+1 413 448 2260 Ext. 470
awood@ahminc.com

Marla Witbrod

Solvay Specialty Polymers
+1 770 772 8451
marla.witbrod@solvay.com

Alan Flower

Industrial Media Relations
+32 474 117 091
alan.flower@indmr.com

Alberta Stella

Solvay Specialty Polymers
+39 02 2909 2865
alberta.stella@solvay.com



Solvay's tough, transparent, biocompatible Radel® R-5000 polyphenylsulfone replaced polyetherimide as Biorep Technologies' material of choice for its new Ricordi chamber, used to isolate healthy pancreatic tissue cells for clinical transplants. Photo courtesy of Solvay Specialty Polymers.