

## Solvay Case Study Highlights Benefits of High-Performance Polymers over Metals in Healthcare Market

*Ixef® PARA and AvaSpire® PAEK are Highly Viable Material Candidates for Surgical Retractors*

**NEW YORK, N.Y., June 10, 2014** – Solvay Specialty Polymers – a leading global supplier of high-performance thermoplastics offered for use in a range of markets including implantable and non-implantable medical devices – has released a case study which highlights the use of its high-performance polymers in the healthcare field. Surgical retractors made of Ixef® polyarylamide (PARA) and AvaSpire® polyaryletherketone (PAEK) show strong commercial promise and are the latest examples from Solvay which showcase the advantages of high-performance polymers over metals in medical devices. The company made the announcement at the 2014 Medical Design & Manufacturing (MD&M) East exhibition June 10-12 in New York City.

An active participant in the metal replacement market for over 25 years, Solvay undertook an innovative commercial approach by applying its knowledge and expertise to develop case studies that help customers see the cost and performance advantages of high-performance polymers in medical devices. The current case study focuses on both single-use and reusable retractor applications that use Ixef® PARA and AvaSpire® PAEK resins to replace traditional metal instruments.

“Specifying plastics for medical devices can be a major challenge for those who have been used to working with and designing with metals,” said Dane Waund, global market manager for healthcare for Solvay Specialty Polymers. “To help customers make this transition, we conducted an in-depth study on end-use performance, biological safety, and economics, and developed a practical seven-step metal replacement plan.”

Waund noted that high-performance polymers offer the same level of strength and rigidity as some metals at ambient temperature along with added advantages. High-performance polymers deliver cost benefits, enhanced aesthetics, and ergonomic improvements including a range of grip options. They can also be colored, thus enabling the production of devices in a variety of sizes that can be easily and quickly identified in the operating room.

The Hohmann retractor, a popular device used in surgical procedures, was selected for the metal replacement case study because of the challenging requirements including high mechanical loads. In single-use applications, Ixef® PARA was used due to its strength and stiffness, excellent surface finish, and compatibility with gamma radiation sterilization. Ixef® PARA’s strength and rigidity surpasses that of known competitive thermoplastics, including carbon fiber-reinforced polyetheretherketone (PEEK). This enables instrument designs which offer comparable performance to that of their stainless steel counterparts. The material is injection molded, thus eliminating machining and reducing cost over stainless steel.

For reusable devices, AvaSpire® PAEK delivers a range of advantages including a high stiffness-to-weight ratio, hydrolytic stability at elevated temperatures, excellent chemical resistance, as well as excellent aesthetics and colorability.

Stiffness, strength, and compatibility with disinfectants and steam sterilization are critical requirements for reusable retractors, making AvaSpire® PAEK ideal for these applications. The material is also easy to process, allowing designs incorporating long, thin geometries to be produced via injection molding.

Solvay seeks to grow the metal replacement market by presenting these types of case studies directly to customers and also offering them at educational meetings throughout the country including the recent American Academy of Orthopedic Surgeons (AAOS) conference in New Orleans and the MD&M East conference and exhibition in New York City.

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### About Solvay Specialty Polymers

Solvay Specialty Polymers is a leading global supplier of high-performance thermoplastics for permanent and prolonged exposure implants and limited exposure devices. The company has expanded its focus on the healthcare industry to meet the growing needs of its global customers by providing global technical and regulatory support. Solvay is building on its 25-year history as a key material supplier in the healthcare field, devoting considerable new resources to help customers be more efficient and cut costs. Metal-to-plastic replacement remains a key focus for manufacturers, but increased cost pressures pose a new challenge as the market continues to grow at a double-digit pace. Solvay also continues to devote considerable research and development activities to polymer technology and commercialization of new and unique material options for medical OEMs and processors.

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 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 and Cable, and other industries. Learn more at [www.solvay.com](http://www.solvay.com).

Solvay ([www.solvay.com](http://www.solvay.com)) is an international chemical Group committed to sustainable development with a clear focus on innovation and operational excellence. It is realizing over 90% of its sales in markets where it is among the top 3 global leaders. Solvay offers a broad range of products that contribute to improving quality of life and the performance of its customers in markets such as consumer goods, construction, automotive, energy, water and environment, and electronics. The Group is headquartered in Brussels and its companies, which employ about 29,400 people in 56 countries, generated EUR 9.9 billion in net sales in 2013 (pro forma). Solvay SA is listed as **SOLB** on NYSE Euronext ([www.euronext.com](http://www.euronext.com)) in Brussels and Paris. Bloomberg ([www.bloomberg.com](http://www.bloomberg.com)) = **SOLB:BB** and Reuters ([www.reuters.com](http://www.reuters.com)) = **SOLB.BR**.

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