

## Solvay Specialty Polymers Launches New High Stiffness Grade of KetaSpire® PEEK

*KetaSpire® KT-825 Offers 50% Greater Stiffness than Neat PEEK Without Conventional Reinforcements*

**ALPHARETTA, Ga., May 21, 2014** – Solvay Specialty Polymers has announced the introduction of a new high stiffness grade of KetaSpire® polyetheretherketone (PEEK) that provides 50% greater modulus/stiffness than standard neat PEEK grades. Despite its higher stiffness, the new grade, KetaSpire® KT-825, retains the elongation and toughness that is comparable to that of neat PEEK resin for structural applications in transportation, electronics, semiconductor, and oil and gas.

KetaSpire® KT-825 utilizes a proprietary additive and compounding technology that allows the unique combination of high stiffness, excellent ductility, and low specific gravity of 1.35 compared to 1.30 for neat PEEK. The new grade bridges the performance gap between unfilled PEEK and traditional glass fiber reinforced or carbon fiber reinforced PEEK grades, according to Jamal El-Hibri, principal scientist for Solvay Specialty Polymers.

Unfilled PEEK offers ductility, good impact resistance and isotropic properties, but often lacks sufficient stiffness and strength, while reinforced PEEK grades are typically the opposite – very strong and stiff materials but comparatively brittle. “KT-825 combines the ductility and toughness attributes of neat PEEK with the increased stiffness of reinforced grades while retaining the desirable low anisotropy in resin properties along the flow and cross flow directions,” explained El-Hibri.

The heat deflection temperature (HDT) at 1.84 MPa (264 psi) of KT-825 is 10°C (18°F) higher than standard unfilled PEEK. Meanwhile, the modulus of KT-825 is 50% greater than that of the natural resin at temperatures below the glass transition temperature (T<sub>g</sub>) of PEEK (150°C/302°F). At temperatures above the T<sub>g</sub>, the tensile and flexural moduli are two times that of unfilled PEEK. As a result, KT-825 is a more robust material than unfilled PEEK for use in applications that approach or slightly exceed operating temperatures of 150°C (302°F).

While the tensile strength of KT-825 is unchanged from that of standard unfilled PEEK, the flexural strength is about 10% higher. From a rheological standpoint, the new compound is easily processed due to a melt viscosity that is similar to that of a 30% glass fiber reinforced PEEK compound (e.g., KT-820 GF30). In its natural (uncolored) state, KT-825 has a uniform light beige appearance that is much lighter than natural PEEK grades currently available on the market.

Testing in accordance with the UL-94 vertical burn procedure demonstrates that KT-825 is capable of meeting UL's V-0 flammability resistance requirements at a thickness of 0.8 mm (0.03 in), providing an advantage over other commercial neat PEEK grades, which do not meet the UL 94 V-0 flammability rating requirements at this thickness. Neat PEEK grades are typically rated V-0 at 1.5 to 3.2 mm (0.06 to 0.13 in); however, published literature indicates that neat PEEK does not demonstrate robust V-0 performance at 1.5-mm (0.06 in) thickness.

As an added bonus, KT-825 achieves a 70% higher dielectric strength relative to neat PEEK. Dielectric strength per ASTM D149 at a thickness of 3.2 mm (0.13 in) is 26.0 kV/mm (660 V/mil) for KT-825 as compared with 15.2 kV/mm (385 V/mil) for neat PEEK. This makes KT-825 particularly suited for applications where a combination of high mechanical properties and a high degree of electrical insulation is needed.

The new compound can be processed by conventional methods including injection molding and extrusion. It also has excellent film forming characteristics for melt extruded films down to thicknesses of approximately 50 microns (0.05 mm). Targeted application areas include automotive and aerospace due to a continuing demand for materials that offer a high stiffness-to-weight ratio as well as structural applications in mobile electronics where a good balance of stiffness and toughness are required along with a low specific gravity.

Initially, the natural grade KT-825 NT is being made available; however, black and other colors are available upon request. The semi-commercial product is available for sampling and pilot-scale production.

# # #

### About Solvay Specialty Polymers

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** Reuters ([www.reuters.com](http://www.reuters.com)) = **SOLB.BR**

### [Press Contacts](#)

Joseph Grande  
Media Relations  
413.684.2463  
[joe.grande@verizon.net](mailto:joe.grande@verizon.net)

**Solvay Specialty Polymers**  
Marla Witbrod  
770.772.8451  
[marla.witbrod@solvay.com](mailto:marla.witbrod@solvay.com)