

Colombes, May 27th 2009

Self-healing elastomer enters industrial production

In February 2008 Arkema announced the joint development with the Paris *Ecole Supérieure de Physique et Chimie Industrielles (ESPCI) Matière Molle et Chimie* Laboratory of a revolutionary self-healing rubber based on the concept of supramolecular chemistry. Arkema will now begin the industrial production of the first high-performance materials derived from this chemistry. A comprehensive range of supramolecular materials and additives will be marketed under the trademark Reverlink™.

During the past twelve months, Arkema has been fine-tuning pilot plant processes capable of producing, on a semi-industrial scale, materials based on supramolecular chemistry, and studying applications that might benefit from this remarkable chemistry. The production plant, based in France at the Feuchy facility (Pas-de-Calais), boasts an annual capacity of almost 100 tonnes. These new supramolecular materials are composed of at least 60% fatty acid oligomers derived from vegetable oils. Their production is part of Arkema's strategy to increase the use of renewable raw materials.

Self-healing materials derived from supramolecular chemistry

Supramolecular materials specifically feature so-called « reversible » (non-permanent) intermolecular bonds, in contrast with polymers derived from traditional chemistry, which are based on so-called « irreversible » (permanent) bonds. This reversibility feature imparts a capacity to self-heal: cracks or breaks occurring in supramolecular materials can be repaired simply by putting the fractured surfaces back together and applying light pressure; the materials recover nearly all their initial strength without the need for bonding or heating.

A huge development potential in many applications

The self-healing elastomer technology offers opportunities wherever an elastomer (« rubber ») part is likely to suffer damage from micro-cracks or deep grooves. Many industrial applications are being explored: conveyor belts, sealing joints, impact protection, insulation and shock-absorbing layers, industrial gloves, anti-corrosion coatings for metal, and formulation additives for adhesives, bitumen, organic binders, paints, varnishes, pastes and sealants. Over 30 confidentiality agreements have already been signed between Arkema and industrial partners relating to possible developments in supramolecular chemistry.

Reverlink™ : a comprehensive range of materials

Arkema has developed a comprehensive range of products with self-repairing characteristics tailored to several application areas. The Reverlink™ range today comprises ten grades of supramolecular elastomers featuring optimum self-healing characteristics, products for traditional polymer modification, and various specialty additives.



View a video demo of Arkema's self-healing rubbers on
www.reverlink.com



Self-healing of a supramolecular elastomer. Photos by Arkema.

A global chemical company and France's leading chemicals producer, Arkema consists of three businesses: Vinyl Products, Industrial Chemicals, and Performance Products. Arkema reports sales of 5.6 billion euros. Arkema has 15,000 employees in over 40 countries and six research centers located in France, the United States and Japan. With internationally recognized brands, Arkema holds leadership positions in its principal markets.

Press Contacts:

Sybille Chaix

Mob. : +33 6 15 89 26 11

Tel. : +33 1 49 00 70 30

sybille.chaix@arkema.com