Hexion is joining Fast RTM projects with its latest thermoset matrix technology

Hexion Inc., headquartered in Columbus (OH) US was formed in 2005 by combination of four companies (Resolution Performance Products, Resolution Specialty Materials, Borden Chemical, Bakelite). Hexion has around $4.4 billion revenues, 65 active production sites around the world and approximately 5,500 employees.

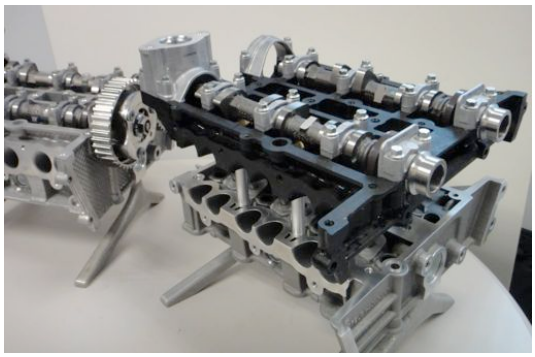
Hexion is a world leader in specialty chemicals and materials with a long heritage of technology innovation, applications expertise and personalized service. Hexion scientists invented one of the world's first plastics, better known as Bakelite® and the first epoxy resins. Today, we continue to develop a multitude of high-performance resins and other advanced materials to meet specific end-use and manufacturing requirements of our customers. Hexion's deep understanding of our customers' applications is engineered into every solution we offer. Hexion has global leadership positions across a broad range of technologies and industries. The wind energy industry is by far our largest market for epoxy composites. The transportation markets – automotive, rail and aerospace industries – are smaller but quickly growing. Hexion is making significant investments to support the growth of composites in the automotive industry.

Increasing regulatory pressure drives automotive OEMs to improve the fuel efficiency of their fleet. The automotive industry focuses on light weighting technology because it has the biggest impact on fuel consumption. There is tremendous effort on-going to take composites into the large production volume segment. This requires resin systems with very short cycle time and a high level of mechanical performance. The recent additions to our portfolio are the fast cure Epikote Resin TRAC 06170 system which targets structural parts made with Resin Transfer Molding (RTM) or Liquid Compression Molding (LCM). When this system is applied with LCM, a part-to-part cycle time of less than 1 minute can be achieved, depending on the part size and complexity and the available infrastructure. Fast RTM processing requires stable and strong fiber preforms where essentially no fiber deformation is acceptable before or during injection. The Epikote™ TRAC 06720 curable preform binder has been developed for these demanding composite applications. The product is compatible with RTM epoxy matrices and co-cures in CFRP parts.

Most recently Hexion joined the Fast RTM project consortium and will offer its expertise on fast cure epoxy resin systems. This addresses the projects' objective for the high build-rate RTM/LCM processing technologies allowing part to part production cycles of 2 minutes or less. Hexion will also participate to the FastFORM project starting in 2016 contributing to the reinforcement pre-forming step with its latest binder chemistry. As the leading player for resin matrix technologies specifically tailored to mass production we continue with RTM/LCM process implementation and will further focus on technologies that can reduce the process waste of fibers like SMC, tow-preg and more.

The performance benefits of carbon fibre epoxy composites are best deployed in structural applications where component strength and passenger safety demands are increasing, and need to be combined with light weighting objectives. The demand for visible carbon fibre epoxy composite hoods and roofs in luxury cars is also strengthening as a relatively easy entry point for replacing metals by lightweight composites. The automotive industry is certainly looking in suspension systems such as leaf

and coil springs based on epoxy- glass fiber composite materials, which offer the required fatigue performance. And the engine downsizing trend offers opportunities for engineering thermosets that maintain their mechanical properties under the increasing under-the-hood temperatures.



Ford Engine Cam Carrier demonstrator

Lamborghini Aventador Engine Bonnet SOP2011

Hexion is a sole supplier of resin systems for CFRP production with LCM/RTM in the new BMW 7 series. In this luxury sedan, the placement of CFRP elements makes for a remarkably rigid cell around the passenger compartment. The result, BMW claims, is a roughly 130kilogram net reduction in weight over the current 7-series, with about 40 of those kilograms coming directly out of the body structure. The CFRP parts are made with LCM and RTM processes on an industrial scale.

Audi A6 Avant 2.0 Ultra Coil Spring SOP 2014

Hexion is the sole supplier for the Audi A6 2.0 Avant for composite coil springs. The Society of Plastic Engineers' (SPE) 45th Annual Automotive Innovation Awards Program gave its top honor for the chassis/hardware category to the team that developed the first-ever composite coil spring for automotive production. Resin technology from Hexion was key to the breakthrough. The resulting part meets and exceeds the various strength and durability requirements of the OEM at a significant weight savings and overall value to the consumer.

We invite you to visit us at JEC 2016 on our booth to weight these parts!

For more information: http://www.hexion.com/epoxyphenoliccomposites/automotive/