NATURAL FIBER COMPOSITES ON THE UPSWING

FlexForm Technologies LLC (Elkhart, Ind.) recently announced that its natural fiber composites (NFC) are used as the substrate of choice in more than 1.5 million vehicles in the U.S. NFCs are formulated from a blend of natural fibers, including kenaf, hemp, flax, jute and sisal, and thermoplastic polymers such as polypropylene and polyester.

FlexForm is currently ramping up production on its materials for interior components that will appear on three new vehicle models. FlexForm NFCs are used for the molded seat back of the 2005 Ford *Freestyle SEL*, the door armrests and upper panels on the front and rear doors of the redesigned 2005 Jeep *Grand Cherokee* and the front and rear panels on the new 2005 Mercedes M-Class vehicles.

Automobile manufacturers are taking more advantage of the benefits associated with NFCs while seeking alternatives to neat polymers, which are becoming more expensive.

Source: FlexForm

A research group at Cornell University (Ithaca, N.Y.) has developed a new plastic called polylimonene carbonate, using limonene and carbon dioxide. Limonene, a carbon-based compound, is found in more than 300 plant species and makes up about 95 percent of the oil found in an orange peel. The oil, commonly extracted for various uses such as household cleaners, can be oxidized to create limonene oxide. The limonene oxide liquid and CO_2 gas, along with a catalyst that contains a small amount of zinc, are mixed to produce a white powder. The powder can be melted like petroleum-based polymers to mold typical thermoplastic items, such as disposable cups.

The new plastic has properties similar to polystyrene, which is used in many household products. The research team also is testing the polymer for strength and temperature durability as well as its biodegradable properties.

In another development, Toray Industries (Tokyo, Japan) has entered into a joint development agreement with Fujitsu Ltd. and Fujitsu Laboratories Ltd. to make plant-based plastic housings for large-sized laptop computers. The environment-friendly cases will be made from a blend of approximately 50 percent polylactic acid (PLA) and an amorphous plastic, developed as a new material within Toray's Ecodear range of biodegradable plastics derived from corn and other plants.

According to the companies, blending the material with thermoplastics has allowed for improvements in heat resistance, moldability and flame retardancy. The project reportedly marks the first time that it has been possible to mass-produce large, complex injection moldings using biodegradable plastics, while complying with the technical requirements for large information technology housings.

For product info, use ***goComp.biz:*** **flexformtech.gocomp.biz/1**