

Mazda process makes plastics parts lighter

By Steve Toloken

PLASTICS NEWS STAFF

HIROSHIMA, JAPAN (Sept. 12, 8:50 a.m. EDT) -- As part of a drive to reduce weight and lessen the environmental impact from cars, Japanese auto maker Mazda Motor Corp. has developed an injection molding technology that it says mixes supercritical fluids with plastic to reduce resin consumption and lightweight car parts by as much as 30 percent.

Mazda announced Sept. 9 that it has developed a way to combine SCF foaming technology with a core back expansion molding process to produce multilayer parts, and better control the structure of the foam to enhance heat insulation and acoustic performance of the plastic.

The new foaming technology has environmental advantages over traditional foaming techniques, such as making parts that are easier to recycle, and can be used in a wide range of auto components without compromising performance, Mazda said.

A company spokeswoman said Mazda is using foaming technology from Trexel Inc. in Woburn, Mass., and has patented ways to combine it with the core back process. It is working with press supplier Japan Steel Works Ltd. in Tokyo, Mazda said.

"No company has combined these two technologies," the spokeswoman said. The research has resulted in 75 patents, most of which are held by Mazda, she said.

In its Sept. 9 statement, the Hiroshima, Japan-based car maker said, "With this proprietary technology, substantially less material is needed to manufacture plastic parts that are lighter and have equal or greater strength and rigidity characteristics compared to conventional, non-foamed parts. This plastic foam molding technology can potentially be applied to nearly all plastic parts used in vehicles."

The spokeswoman said the company will start using the technology on 2011 model year cars and can use it on a wide range of car parts, but has not decided which models and parts it will initially focus on.

The core back molding process was originally developed by Mitsubishi Chemical but patents on that have expired, the spokeswoman said.

Mazda said the technology takes advantage of the ability of supercritical fluids to mix with plastic at the molecular level and raise its fluidity, allowing it to expand more rapidly in a mold and use less material. The company said it is using SCF made from inert nitrogen or carbon dioxide gases.