Saving gas

by bubble, toil

United Press International NEW YORK — The car you buy in 1985 will have to weigh nearly

2,000 pounds less than pre-1973 models in order to meet the government's edict of 17.5 miles to the gallon, and Detroit is counting on air bubbles to help.

The auto makers already have

begun the swing to smaller, lighter autos. General Motors has taken nearly 1,000 pounds off the average weight of its full-size models; Chrysler estimates it has shaved an average of 300 pounds off its entire

and trouble

## \*smart shoppers "eat up" these meat savings Beef Chuck Shoulder Regular Ground Beef .591b. Roast Boneless, USDA Good \*Any size package. Beef T-Bone Steak Loin Cut. USDA Good

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Chuck

Roast

Blade cut

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Dressing

□6

Italian

41bs

Pancake Mix

Pork Loin Rib Chops

USDA Good

Pillsbury

Buttermilk Biscuits
Pkg. of 10

average of 300 pounds off its entire line.

The weight saving is being accomplished in many ways, with a big contribution coming from high-strength, comparatively low-density plastics being substituted for metals to lighten such auto parts as gas tanks' front end panels, hoods, roofs, doors, instrument panels and seat frames. Plastic drive shafts and axle housings, as well as parts for engine, transmission and electrical systems are planned. 7-Bone engine, transmission and electrical systems are planned.

Even lighter plastics are needed, however, and this is where the air bubbles come in — tiny, low-density, hollow glass bubbles, called microspheres, developed by 3M

while air bubbles in a metal cast-

While air bubbles in a metal casting or forging invite disastrous wear and breakage, plastics can be airbubbled without loss of strength.

According to 3M, adding eight percent of the hollow glass beads to the plastic mix produces a 30 percent reduction in weight. This single item will save only about one tankful of fuel over the five-year life of a carbut, multiplied by the many millions of cars on the roads, it makes the potential fuel saving significant.

the potential fuel saving significant.

According to 3M, the value of the microscopic hollow balls in plastic mixes was discovered several years ago when they turned up as defective glass beads in the manufacture of 3M'S Scotchlite reflective sheetout to prevent their occurrence, 3M engineers accidentally discovered their high strength in relation to maintain their neutricular followers. weight and their potential useful-

mess in other plastic mixes.

This probably wasn't a big surprise. Hollow glass spheres have had many uses almost since the beginning of the glass industry. Fishermen have used millions of

rishermen have used millions of them, for example, to float nets because they are strong and don't become waterlogged like cork floats.

So the 3M engineers set to work to make the hollow glass beads intentionally in a number of sizes and densities.

densities.

Their use in sheet molding compound that goes into many parts of automobiles may be just the beginning of the use of these air bubbled plastics, 3M said. They have a low heat transfer rate so they appear to be especially suited for insulating vessels to handle such substances as liquid nitrogen, which liquifies at 325 below zero, and liquid oxygen.

But their use to save weight and

But their use to save weight and fuel in vehicles already is significant and revolutionary. Until the hollow beads were studied and improved the very idea of an air bubble getting into a plastic mix horrified chemists and engineers.

## Allergy to mate creates dilemma for young couple

United Press International
YORK, England — Pity Janette
Tate. She's allergic to cats, dogs,
horses, dust, grass, pollen, feathers, some kinds of flowers — and

her husband. Mrs. Tate, a 21-year-old dressmaker, wheezes and itches during close contact with people. When her husband kisses her, she tends to break out in red blotches around her mouth.

Allergy specialists at York District Hospital said her case was unusual but not unique and that injections and pills should help her.

"The more people there are around me, the greater the discom-

fort," Mrs. Tate said. "I get blotchy, start to itch and feel generally ill. It

But the person she feels most sorry for is her husband Steve.

"We've been married 2½ years

and even now kissing can be a problem for us," she said.

"If it's too passionate, the area around my mouth gets bright red and can stay like that for some time. It is so embarrassing to know that I can't kiss my husband properly without my friends knowing about

Steve, 23, said, "It's a difficult situation but I try to be understanding. I'm only human but, as Janette says, that's the problem."

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