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Vinyl-cancer link poses food question

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An Italian scientist has found that laboratory animals fed tiny amounts of vinyl chloride — a basic chemical used in many plastics — developed a rare cancer called angiosarcoma.

Until now the only known link between vinyl chloride and cancer was through exposure to the chemical's fumes. The possibility of contracting the cancer by ingesting vinyl chloride through the digestive system, while hinted at, had not been proved in a laboratory.

A spokesman for the National Institute of Occupational Safety and Health said the scientist's report poses the question of whether any of the massive amount of

plastic packaging used on food products may be harmful to the general public.

The Italian scientist, Cesare Maltoni, had some time ago uncovered the apparent link between exposure to vinyl chloride fumes and a higher-than-normal rate of angiosarcoma among chemical workers.

The investigations by Maltoni and other scientists into the dangers of vinyl chloride were moved out of the laboratories and into the chemical and plastics industries after the B. F. Goodrich Co. reported in January last year that several of its Louisville employees may have died of the rare cancer.

A resulting industry-wide series of in-

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Cancer-vinyl link raises a question of

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verifications uncovered at least two dozen deaths of chemical workers from the unusual cancer, which attacked their livers. Seven of the known deaths were among workers at the Goodrich plant on Belle Lane. The most recent death occurred Tuesday. Two other employees here are being treated for the disease.

Up till now, however, the bulk of the pressure has been on reducing exposure to the chemical, not on looking into what happens to people who eat food that has been packaged in plastic.

However, federal regulators did ban the use of plastic bottles by the liquor industry after it was found that liquor stored in the bottles for several months contained up to 20 parts of the chemical per million parts of the product. Vinyl chloride apparently was leaching out of the containers into the liquor. The federal regulators claimed the ban was only precautionary and allowed distillers to sell off liquor that already had been bottled in plastic.

The plastics industry has already begun research on developing a plastic that will not leach out the vinyl chloride into the material being packaged.

According to the spokesman for the U.S. occupational safety agency, the Society of the Plastics Industry, a leading trade group, has disclosed that Malton

has found that animals given small amounts of vinyl chloride with their food develop angiosarcoma.

Vinyl was put into food

The U.S. representative said that according to the information the agency has received, one experiment performed by Malton involved the addition of 50 milligrams of vinyl chloride to each kilogram of food given to laboratory animals. (There are 1,000 milligrams in a gram and 1,000 grams in a kilogram, which is about 2.2 pounds.) The animals developed angiosarcoma in about 45 weeks.

When the ratio of vinyl chloride to food was lowered to 10.5 milligrams per kilogram — a third the dosage — the animals showed signs of angiosarcoma in 50 weeks, the spokesman said.

The cancer was produced in the thymus gland of the neck of the animals. Researchers reportedly favor the study of this gland in many cases because of its rapid development during the early years of an animal's life. The researchers have found that angiosarcoma produced by exposure to vinyl chloride is generally not detected until human beings have been exposed to it for at least 10 years.

The difficulty with vinyl chloride for the chemical, plastics, and food industries is that the chemical is extremely unstable. Even when stabilized in the form of polyvinyl chloride or so-called PVC, the vinyl chloride has a tendency to break down in tiny amounts. As the research on liquor bottles indicated, the vinyl chloride has a tendency to leach out into surrounding materials.

Polyvinyl-chloride packaging is ex-

trremely popular in the food industry, where it is used in bottles, jars, wrappers, and trays used to hold meats. It is also used in plates, cups, eating utensils, and food-storage containers.

The B. F. Goodrich Co. in a letter to the Food and Drug Administration last month, reported that it could endorse the use of plastics in the food industry "provided there is no detectable monomer (in this case, vinyl chloride) migrating to the food."

Suggest new technique

Goodrich suggested an analysis technique that permits the detection of as little as 50 parts of the chemical per billion parts of the material being tested. A spokesman noted that "this is the practical definition of zero" presence of the

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food safety

chemical in a material. (By contrast, levels of vinyl chloride in the air are normally calculated in parts per million, not billion.)

The chemical firms that convert vinyl chloride gas into tiny pellets of polyvinyl chloride have embarked on crash programs aimed at reducing exposures to the chemical. Regulators have cut the maximum permissible exposure to 50 parts of the gas per million parts of air — a 10th the previous standard — and after April 1, the industry was to cut operating levels to less than one part per million. However, the industry is waging a legal fight against the April 1 deadline.

A spokesman for Goodrich yesterday said the operating levels at the Louisville plant have been cut to less than six parts per million. The firm plans to use respirators when levels within the plant rise

below 25 parts of vinyl chloride per million parts of air, the respirators are optional. Above that level, they will be mandatory.

7 deaths were in Canada

In addition to the seven angiosarcoma deaths and two workers who are being treated for the disease here, seven more of the industry deaths occurred at a Canadian plant now operated by Goodrich. The Goodrich spokesman, however, noted that six of the employees worked for the firm that sold the plant to Goodrich and the seventh was ill at the time of the plant transfer.

He said that while other employee cancer deaths have been investigated by Canadian experts, none of the others have been confirmed by autopsies.

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