



FLEXIBLE CONTAINER—Squeezable bottle made of polyethylene is both a container and an atomizer, being used for nosedrops and deodorants.

designed to allow for the material to shrink as much as 4% as it cools, although other adjustments can reduce this to as little as 2½%. Thick sections also require special cooling techniques to avoid the formation of voids or bubbles in the center.

Films of polyethylene are outstanding for their folding resistance. They may be creased, yet readily spring back into shape when released. Also these films do not become brittle upon long exposure to freezing and below-freezing temperatures. They have a soft, warm and somewhat waxy feel. Thick sections of the plastic bounce when dropped.

Polyethylene is highly transparent in thin layers immediately over an object, but it is translucent when thick. It naturally is colorless, with a "frosty" appearance. Dyes and pigments may be added, however, to produce a wide variety of colors.

Polyethylene, like many other plastics, is produced in a variety of grades, each with different physical properties. In some grades, many more atoms of hydrogen and carbon

—but always the same proportion of two atoms of hydrogen to one of carbon—are linked together to form each molecule of polyethylene than in others. Thus some have a much higher molecular weight than others.

Polyethylene of very low molecular weight is a grease or wax; that of medium molecular weight is a soft wax-like resin; and that of very high molecular weight, the kind used in articles being sold now, is tough and horny. In all cases, however, the molecules are formed of carbon atoms joined together to form long chains.

Would you like to examine some polyethylene products yourself? A bouncing measuring cup (1, 1½ and 2-ounce) with an air- and liquid-tight cover is included in a kit assembled for you by Science Service. Samples of polyethylene resin, tubing, coated papers and cloth, and woven fabric as well as explanatory material will be sent you for only 50 cents. Write Science Service, 1719 N Street, N. W., Washington 6, D. C.

Science News Letter, July 16, 1949

NUTRITION

New Food Process Danger

➤ **WARNING** of a possible danger of a chemical contamination of food from a new food process was issued by the Council on Foods and Nutrition of the American Medical Association.

The process consists in adding chemicals to foods such as bakery products to make them stay fresh longer, or to give them a

smoother texture or some other attractive quality. The chemicals, of which there are hundreds, are known as "surface-active" compounds. Some of the most widely used are derived from polyoxyethylene combined with fatty acids and sometimes with a special alcohol known as sorbitol.

The process is viewed with alarm, Dr.

James R. Wilson, secretary of the Council, states in the *JOURNAL OF THE A. M. A.* (July 2), because little is known about the poisonous effect of the surface-active compounds being added to the food or what effect they have in reducing nourishing value.

The food to which the compounds are added are usually smooth-textured, have more sales appeal and contain less fat. In bread and bakery products there may also be lowering of important food ingredients because the compounds have the ability to produce the same properties of "freshness" as the nonfat milk solids.

If, in addition to bakery goods, these agents were added to such foods as ice cream, candy and peanut butter, the public would be consuming a large quantity of the compounds whose possible poisonous qualities are as yet unknown, Dr. Wilson pointed out.

"Unless the complete harmlessness of these agents can be demonstrated beyond reasonable doubt, they should not, in the Council's opinion, be employed in basic foods," he stated.

The second danger, that of reducing the nutritional value of food, stems from the fact that less fat, milk solids and sometimes eggs are required when the compounds are added to the food.

"Thus far, the use of these substances is limited," an editorial in the same issue of the *JOURNAL* declares, "but their possible range of application includes almost all foods containing starch or fat. When a chemical technologic aid may find its way into the daily diet of nearly everyone from infancy to the grave, the necessity for being assured of its safety becomes significantly increased."

The editorial concludes with the warning that it is an invitation to trouble to ignore the need for preliminary study.

The U. S. Food and Drug Administration in Washington is currently holding hearings on the use of these substances in bread. After all the evidence is in, Food and Drug is expected to issue a ruling, technically termed a "definition", as to whether such substances can be added and in what quantities and to what products.

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On This Week's Cover

➤ A FAIRY-LIKE creature with strange offspring is the golden-eyed lace-wing fly shown on the cover. Mother lace-wing has transparent lace-like wings of pale green hue and beady golden eyes that glisten in light. But her children, in the earlier stages of a strange life cycle, are another matter. They are the aphid lions which feed on plant lice. These aphid lions are so blood-thirsty when born that each egg is laid on the end of a separate tiny silken stalk so that the aphid lions will not eat each other.

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