CHEMISTRY

Improved Plastic

Made from cellulose and natural gas, the new product is lighter, more lustrous, tougher and odorless. Has best balance of desirable characteristics.

➤ MORE LUSTROUS, faster to mold, odorless and tough, a new plastic made from natural gas and wood has been introduced to commerce by Celanese Plastics Corporation.

Named Forticel, it is made from cellulose and propionic acid. It was merely a laboratory product until Celanese chemists developed a new process for producing propionic acid for the first time in this country from natural gases in commercial quantities at reasonable prices.

The process is in operation now at the company's new chemical plant at Bishop, Texas. While present production is limited to a small pilot plant, a steady moderate production of Forticel by next January is to be followed by large-scale production as soon as plans already approved for this purpose can be carried out.

Forticel is the culmination of years of intensive research devoted to the study of scores of chemical combinations developed by introducing organic acid or alcohol radicals into the cellulose molecular chain.

Of all the cellulosic compounds produced, Forticel has, in the opinion of Celanese chemists, the best balance of desirable characteristics.

As a thermoplastic the most economical and satisfactory process for making Forticel into finished articles is by injection and extrusion molding. Finished products are characterized by an unusual surface luster and brilliant mold finish, obtained without any mechanical polishing. The molding cycle has been reduced as much as twelve seconds where Forticel replaced cellulose acetate in tests in the same die. In certain instances this gain in molding time was equivalent to a 25% increase in production. The superior plastic flow quality of Forticel in the molding operation insures virtually invisible weld lines where two streams of plastics meet in the die. These lines are often the seat of mechanical as well as visual flaws. Other scientific tests showed that Forticel has a greater strength in the weld than any of the present commercial cellulose esters.

Forticel is odorless, so that even the most delicately perfumed lipstick or face powder is not affected. Articles made of it can be painted and lacquered without fear of tackiness. The new plastic has a low specific gravity of about 1.2 or less, thus weighing only slightly more than water. Where 100 molded pieces are obtained from a pound of cellulose acetate 108 pieces can be obtained from Forticel. With a toughness of high impact strength not equalled by any other thermoplastic the consumer can expect longer life and better service from articles molded of Forticel even under the roughest treatment. Colorability of the new plastic includes the full range of the color spectrum and it can be produced in colored mottles and intricate color designs. Also Forticel has the same excellent electrical properties as lumarith (cellulose acetate) and exceeds them in that it has the same high dielectric strength but a lower power factor and a lower dielectric constant. Because of low moisture absorption its electrical properties are little affected by changes in atmospheric conditions.

Special grades of Forticel will be manufactured into sheets and continuous films where good dimensional stability and toughness will tend to further extend the use of the cellulosic plastics.

Numerous uses are predicted for it, including radio housings, steering wheels, house and kitchen utensils, telephones, vacuum cleaner parts, toothbrushes, tool handles, topographic map bases, formed containers, printed dials, electrical insulation, mathematical instruments and glazing materials.

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PUBLIC HEALTH

Rest Is Fundamental Treatment for TB

➤ REST treatment, usually in a sanatorium, "will probably remain as the fundamental remedy for tuberculosis," Drs. H. Corwin Hinshaw and William H. Feldman, of the Mayo Clinic, declare in the *Bulletin of the National Tuberculosis Association*. These scientists have been steadily searching for years for a chemical remedy for tuberculosis and recently reported some promising results with streptomycin, newest of the penicillin type of remedies.

Streptomycin, however, has not yet given the kind of results in tuberculosis that sulfa drugs or penicillin give in some other infectious diseases, such as pneumonia. The Mayo scientists explain this as follows:

"In pneumonia the infection has been present for a few days at most, the inflamed tissues of the lungs are intact and when the drug restrains further multiplication of the pneumococci, the human body promptly recovers in a manner resembling the natural crisis of pneumonia.

"In other diseases, also, successful treatment with drugs merely permits recovery by natural processes, and the promptness of such recovery depends on the nature of the disease process and the defensive powers of the patient.

"Tuberculosis, however, often is a chronic disease which produces destructive changes in tissues. Healing or repair of these tissues is exceedingly slow. Furthermore, in extensive tuberculosis of the lungs which has been progressive for long periods the destructive changes impose serious mechanical handicaps to the healing process. When such mechanical handicaps are present, it is logical to utilize a corrective mechanical type of treatment, such as the conventional surgical collapse procedures rather than treatment with a drug.

"The patient who is faced with the necessity of surgical treatment, therefore, should not hope for any alternative chemical remedy and we would urge him to proceed with the contemplated operation without unnecessary delay."

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ORNITHOLOGY

Army Homing Pigeons Offered for Sale

➤ WANT SOME first-class carrier pigeons?

You can get these feathered GI messengers from the Office of Surplus Property, U. S. Department of Commerce, by sending a certified check or money order for $25. Five pairs of pigeons, aged from one to four years, will be forthcoming. These sales are to be made direct to civilians, without intermediaries.

OSP officials expressed the hope that 4-H clubs, bird fanciers and breeders will take advantage of the sale. It is not possible to furnish pedigrees, but all birds are known to be of good breeding stock, and some have championship potentialities.

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