

STAT

Page Denied

STAT

POLAND EXPANDS PLASTICS INDUSTRY

Zycie Radomskie
Radom, 16 Nov 1953

Dr Eng Ignacy Bursztyn

The Polish plastics industry fulfilled its 1953 production plan on 27 October 1953, thus becoming the first of the industries under the Ministry of the Chemical Industry to fulfill the annual plan.

Important achievements have been made by the Polish plastics industry, although the industry was organized as a separate unit only a year ago. During this time, the plastics industry has expanded in two directions: it supplies key industry with indispensable components for machines and equipment, and it produces a number of consumer commodities.

The production of bearing bushings for heavy metallurgical machinery has been developed on an industrial scale. One hundred tons of plastic bearing bushings substitute for 400 tons of bronze. Moreover, plastic bearing bushings are more durable than those made of bronze. Furthermore, water rather than oil and grease is used to lubricate plastic bearing bushings. In the near future, plastic bearing bushings will be produced for the shipbuilding, paper, and other industries.

For the mining industry, the production of plastic miners' helmets has been started. In 1954, tens of thousands of such helmets, previously manufactured from leather, will be produced.

Bobbins and revolving drums are produced from bakelite for the artificial-fiber industry. By substituting plastics for aluminum in production of bobbins and revolving drums (5,000 units are produced from one ton of aluminum), a great saving will be achieved. Moreover, bakelite is more durable than aluminum.

Acid-resistant steel, which contains two scarce metals, nickel and chromium, is being replaced by polyvinyl chloride. Polyvinyl chloride also has wide application wherever concentrated acids and corrosive alkalis are used. Pipes, valves, buckets, bottles, etc., from polyvinyl chloride are now being produced for the chemical industry.

The plastics industry, however, did not limit its production to items for key industries only. In 1953, the plastics industry started production of consumer goods. The production of soles from softened polyvinyl chloride has been started, and in December 1953, the production of clear plastic rain capes will be started. Tin tubes for cosmetics will likewise be replaced with tubes made of plastic. Condensers for radios are made from polystyrene, and unbreakable cups, fishing lines, artificial bristles, etc., are made from "polian," the same plastic from which stealon (similar to nylon) hosiery is made. All accessories in the interior of the Warszawa M-20 automobile are made from acetate cellulose.

The Wabrzezno Factory (Fabryka Wabrzezno) produces plastic-coated cotton textiles for rain capes.

Although Poland now occupies fifth place in Europe in industrial production, it occupies 12th place in the production of plastics and 13th place in the per-capita consumption of plastics. The per-capita consumption of plastics in the GDR and Czechoslovakia is four times greater than in Poland. This is not caused by a lack of basic raw materials (coal and salt) for the production of plastics but by the fact that Poland began its production of plastics after

STAT

the war, whereas in the GDR and Czechoslovakia, production at that time was already on a relatively high level. Before the war, Poland imported most of its dyestuffs, drugs, etc., and practically all plastic goods.

With the exception of zinc, Poland does not have rich deposits of non-ferrous metals. Thus, the expansion of the production of plastics is of great significance. Poland has to import not only considerable quantities of non-ferrous metals, but also rubber, leather, cotton, and other raw materials. Many of these raw materials can be replaced, either partially or entirely, by plastic goods. The law on the Six-Year Plan envisages a 3,000-fold increase in the production of plastics as compared with 1949. Even then, Poland will still be far behind the GDR and Czechoslovakia in production of plastics.

Further expansion of the plastics industry depends on increased electric power production. To produce one ton of acetate cellulose requires the same quantity of electric current as does one ton of aluminum, and to produce one ton of polyvinyl chloride requires two thirds the quantity needed to produce one ton of aluminum. One ton of polyvinyl chloride, however, can substitute for 4 tons of acid-resistant steel, which contains over one ton of scarce nickel and chromium, and for almost 2 tons of cotton textiles.

From one ton of softened polyvinyl chloride, that is, a mixture containing 600 kilograms of polyvinyl chloride and 400 kilograms of softener, the following can be produced: 300 clear plastic rain caps, 300 table cloths, 1,000 bathing caps, 500 kitchen aprons, 500 infant's waterproof pants, 500 crib sheets, 100 women's bags, 500 waterproof and fireproof curtains, 500 balls and toys, and 200 square meters of foil for packaging.

Plastics are not only substitute products for expensive and scarce raw materials that have to be imported; in some spheres of technology they are irreplaceable by other raw materials. Polyethylene is resistant to high-frequency currents, and polystyrene is vital to the solution of certain electrotechnical problems. It is evident from the foregoing that an inadequate expansion of the plastic industry can retard technical progress in other spheres.

In the plastics industry, the chief retarding influence is its inadequate expansion of production facilities, whereas in other processing industries, the chief retarding influence is frequently raw-material shortages.

In 1953, much has been done to expand the plastics industry. For example, the Administration for Synthetic Products (Zarząd Tworzyw Sztucznych) produced 20-ton motor-driven presses without the aid of a key industry. On the basis of original Polish blueprints, plans, etc., developed under the supervision of Engineer Nacht (State Award recipient), 100-ton hydraulic presses and pumps were built. A press for extruding pipes of polyvinyl chloride was built from metal scrap. Furthermore, a number of engineering bureaus have been created, and a number of tool shops have been activated in the plastics industry.

In a few years, Poland should become one of the leading producers of plastics. This goal, however, is a difficult one, because Poland will be competing with such countries as Czechoslovakia, the GDR, and Hungary, which have greater experience in this field than Poland. The bright side of this picture of competition is that the USSR, Czechoslovakia, the GDR, and Hungary will aid Poland as much as possible.

STAT