Nylon: a gold mine for DuPont, a milestone for industry

Chemical society will today bestow landmark status on Seaford plant

By MAUREEN MILFORD
Staff reporter

Fifty-eight years after the filing of U.S. Patent No. 2130948, nylon is still winning honors.

The latest recognition for the world's first wholly synthetic fiber comes today when the DuPont Co.'s nylon plant in Seaford is designated a National Historic Chemical Landmark by the American Chemical Society in Washington.

"Nylon revolutionized the textile industry and led the way for a variety of synthetic materials that have had enormous social and economic impact on the fabric of everyday life worldwide," reads the society's bronze plaque.

The plaque is set to be unveiled by society president-elect, Ronald C. Breslow and DuPont Chairman Edgar S. Woolard Jr. at the dedication ceremony this morning.

With the designation, the 340-acre manufacturing plant becomes a bricks-and-mortar symbol of one of the greatest science-based commercial achievements of the 20th century.

Nylon, whose production numbers were once used as a barometer of the nation's economic health, comprises 20 percent of the world's manufactured fiber production. Eight billion pounds of nylon are produced each year, equal to 1.5 pounds for every person on earth.

The Seaford works — the first plant in the world to manufacture nylon — was the outgrowth of a discovery that has become a legend in science and technology.

DuPont was still a young public company when it took a gamble and lured a wunderkind Harvard scientist, Wallace H. Carothers, to lead a program of blue-sky research in the late 1920s. With no strings attached, no deadlines and no financial pressures, the industrial university on the Brandywine grew.

Carothers and his hand-picked group were free to choose their own projects. The team included Julian W. Hill, first to prove large molecules could be made into fibers; Donald D. Coffman, who first synthesized a polymer similar to nylon; Gerard G. Berchet, who synthesized the key "fiber 66" that became nylon; Arnold M. Collins, co-inventor with Carothers of synthetic rubber; and Paul J. Flory, who devised the formula for nylon and won the Nobel Prize in 1974 — but always thought Carothers deserved it more than he.

The team delivered. In less than five years, Carothers walked into his boss's office and said: "Here is your synthetic textile fiber." Carothers and his team had discovered a way to mimic nature by chemically producing synthetic silk.

The payoff for the investment was enormous. To this day, nylon is one of DuPont's core businesses, generating annual sales of more than $4 billion. And production is increasing, with DuPont building plants in India and Singapore.

The shy, sensitive Carothers never lived to see his invention brought to market. Twenty days after he filed the famous patent, he committed suicide in a Philadelphia hotel room by drinking poisoned lemonade.

Carothers had been dead more than a year when DuPont decided to build its first nylon plant, sinking one-sixth of its net earnings in 1938 — or $8 million — into the facility. And to the delight of a depression-era Sussex county, the company picked Seaford, citing the area's readily available water, labor and transportation network.

"This is Seaford's biggest day," Mayor George W. Donoho proclaimed 57 years ago this week.

The original plant employed 850 people and had a capacity of 4 million pounds a year when it opened in December 1939. Today, the plant can produce 400 million pounds of nylon with its work force of nearly 1,600 people.

As part of the historical designation, DuPont has created an exhibit on nylon at the Seaford site using memorabilia preserved by Carother's lab assistant and friend, Joseph Labovsky, 83, of Shellburne.

The Seaford works is just the fifth historical "landmark" honored by the society for chemical milestones.

Other winners have been: the Bakelizer, the stream pressure vessel used by Leo Hendrik Bakeland to commercialize the first completely synthetic plastic; the Chandler Chemistry Laboratory at Lehigh University in Bethlehem, Pa., one of the country's first institutional laboratories when it was established in 1884; the Joseph Priestley House in Northumberland, Pa., where the discoverer of oxygen lived and worked until his death in 1804; and research on the atomic weight of oxygen by Edward W. Morley at Case Western Reserve University in Cleveland, Ohio.