

By Kathleen Murphy Skolnik

BAKELITE IN YONKERS

*Hudson River Museum Exhibition Celebrates the
“Material of a Thousand Purposes”*

“Wherever wheels whirr, wherever women preen themselves in the glitter of electric lights, wherever a ship plows the sea or an airplane floats in the blue—wherever people are living in the Twentieth Century sense of the word—there Bakelite will be found rendering its enduring service.”

John Kimberly Mumford in *The Story of Bakelite*, 1924

Bakelite®, the world’s first synthetic plastic, and its inventor, Leo Henricus Arthur Baekeland (1863-1944), are the inspiration for *Bakelite in Yonkers: Pioneering the Age of Plastics*, the exhibition on display through June 6 at the Hudson River Museum in Yonkers, New York, the birthplace of Bakelite.

Baekeland was a Belgian-born chemist who left his position at the University of Ghent in 1889 to emigrate to the United States. He worked initially for a manufacturer of photographic supplies before becoming an independent consultant. The first significant invention to come out of his home-based laboratory was a revolutionary photographic paper called Velox that could be developed under artificial light.

Baekeland sold the rights to Velox to the Eastman Kodak Company in 1899 and moved his wife, the former Celine Swarts, and their two children to a three-story turreted home called Snug Rock in Harmony Park, a small Yonkers neighborhood of fine houses on a cul-de-sac overlooking the Hudson River. He converted a barn on the property to a laboratory and began tackling a new research challenge—the development of a substitute for shellac, derived at that time from the shells of oriental lac beetles.

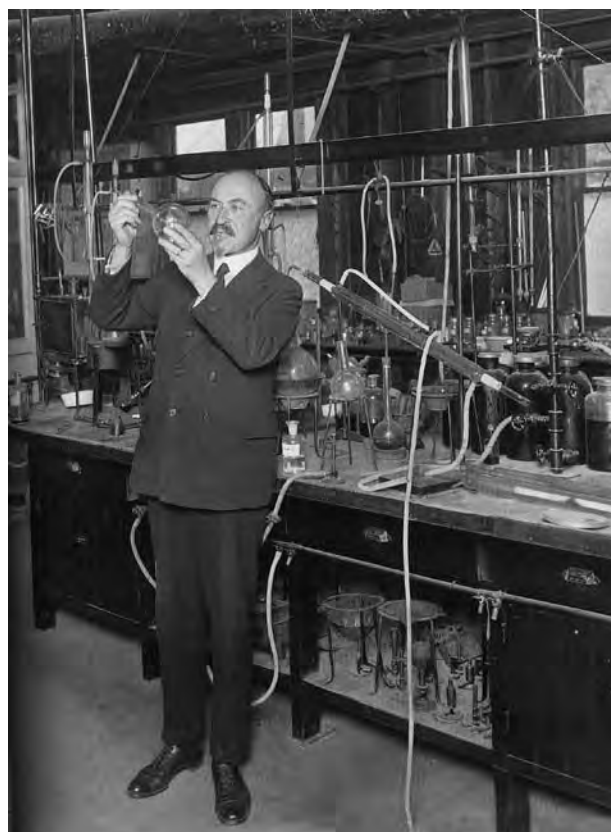
Baekeland experimented by combining phenol (carbolic acid) and formaldehyde under specific conditions of heat and pressure. The result was not the synthetic shellac he had been looking for but rather a “magical” thick, syrupy, dark-brown

resin, what Baekeland called an artificial resinoid, that was resistant to solvents and reheating. The substance hardened into a brittle slab that could be ground up, combined with fillers, and molded under pressure into various forms. Baekeland called the material Bakelite. He filed his “heat and pressure” patent in July 1907 and announced his discovery before the American Chemical Society in 1909. Commercial production of Bakelite began in 1910 at a plant in Perth Amboy, New Jersey. Manufacturing facilities in Europe, Japan, Australia, South Africa, and South America followed.

Early Bakelite was black or dark brown, but further research showed that slowing the pressure and heating process produced transparent forms, called cast phenolics, that could be more brightly hued. This development caused the use of Bakelite to expand beyond industrial applications, and

Right: The Baekelands at Snug Rock, Yonkers, New York. Left, Celine, Nina (b. 1896), George (b. 1895), and Leo. From Carl B. Kaufman, Grand Duke, Wizard, and Bohemian, A Biographical Profile of Leo Hendrik Baekeland (1863-1944), 1968.

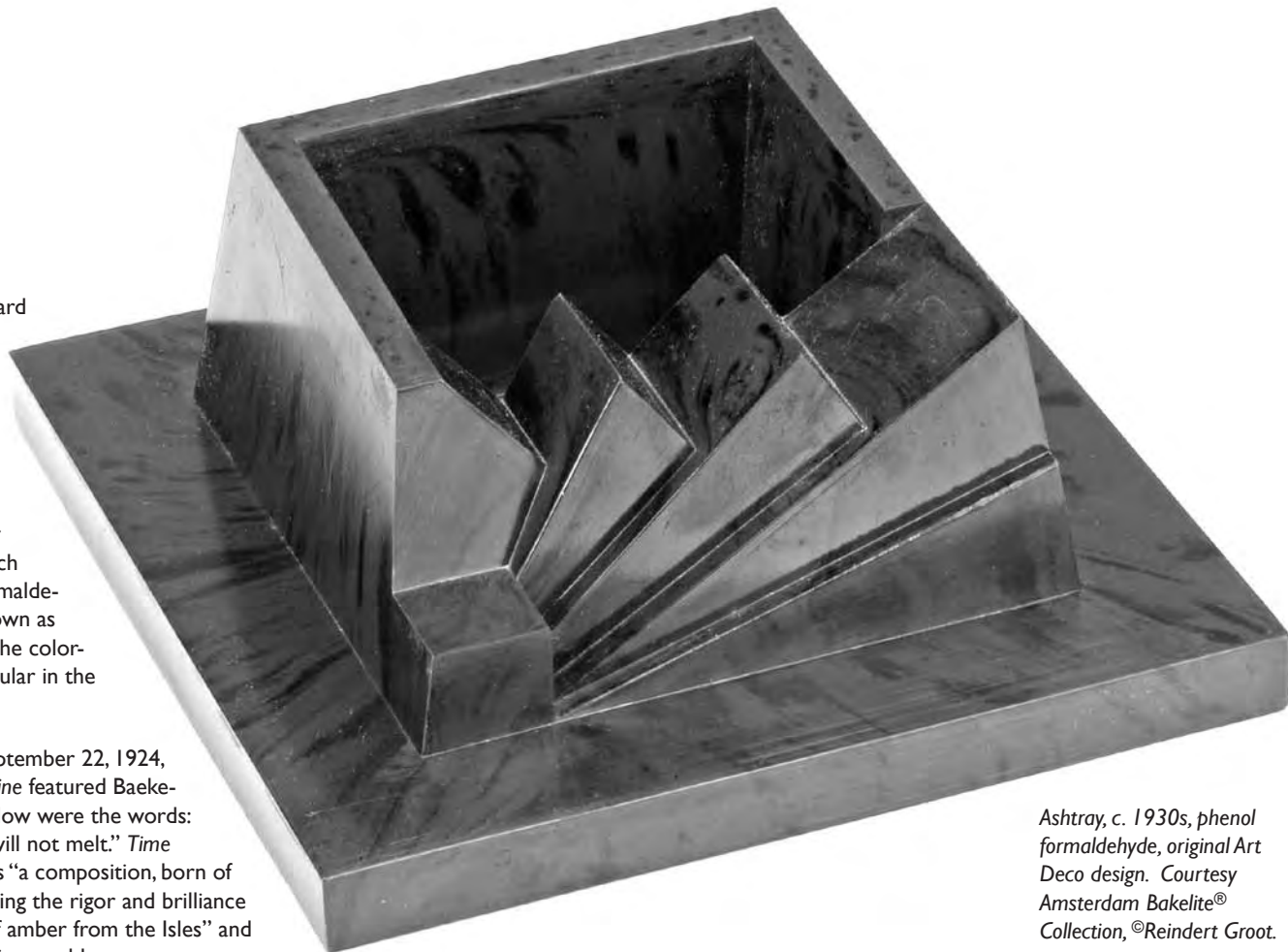
Far right: Leo Baekeland in his factory, 1909. Courtesy Amsterdam Bakelite® Collection, ©Reindert Groot.



brightly colored billiard balls, jewelry, and decorative objects made of Bakelite began to appear. Later modifications of the manufacturing process led to other synthetic plastics, such as the melamine-formaldehyde, commonly known as melamine, used for the colorful tableware so popular in the 1950s and 60s.

The cover of the September 22, 1924, issue of *Time Magazine* featured Baekeland on its cover. Below were the words: "It will not burn. It will not melt." *Time* described Bakelite as "a composition, born of fire and mystery, having the rigor and brilliance of glass, the lustre of amber from the Isles" and predicted that Bakelite would soon permeate every aspect of modern life: "From the time that a man brushes his teeth in the morning with a Bakelite handled brush, until the moment when he removes his last cigarette from a Bakelite holder, extinguishes it in a Bakelite ashtray, and falls back upon a Bakelite bed, all that he touches, sees, uses, will be made of this material of a thousand purposes."

That issue of *Time*, along with Baekeland's notebooks, equipment from his Yonkers laboratory, industrial molds, material and color samples, and historic photographs of Bakelite factories, are among the objects featured in *Bakelite in Yonkers: Pioneering the Age of Plastics*. Also on view are Bakelite promotional materials, such as vintage advertisements and footage from a 1937 film, *The Fourth Kingdom*, produced by the Bakelite Company to familiarize the public with the manufacturing process and the many applications for this revolutionary substance.



Ashtray, c. 1930s, phenol formaldehyde, original Art Deco design. Courtesy Amsterdam Bakelite® Collection, ©Reindert Groot.



Cigarette box, c. 1930s, France, black, phenol formaldehyde with silver inlay. Produced by G.O.P., Paris.



Far left: Snug Rock, the home of Mr. and Mrs. Leo Baekeland, Fobert Lane in Harmony Park. From *Yonkers Illustrated*, 1902.

Left: Toy telephone set, 1930s-1940s, Germany, red, phenol formaldehyde, metal, paper. Made by Geobra.



In addition, the exhibition includes more than three hundred objects made of Bakelite dating from the early decades of the twentieth century up to the present time.

As Hudson River Museum Curator Bartholomew Bland explained, in the first years after its introduction, Bakelite was commonly used to mimic more luxurious materials, such as ivory, ebony, marble, and tortoise shell, and was often molded into objects with late Victorian and Edwardian motifs. But by the 1930s, Bakelite was appreciated for its own aesthetic qualities and was a favored material among such designers as Raymond Loewy and Norman Bel Geddes.

A wide variety of industrial, consumer, and decorative objects molded from Bakelite are featured in the exhibition. The items range from housewares and toys to cameras and office equipment, from dominoes and dice to letter openers, inkwells, and desk sets, from toy telephones and cars to thermoses and cigarette cases. Among the highlights are an Art Deco dressing table box produced by General Electric and distributed at Chicago's 1933 Century of Progress Exposition and an iconic "Jumo" table lamp from 1945. More contemporary Bakelite objects include the "Joe Cactus" ashtray designed by Philippe Starck for Alessi S.p.A. and Starck's battery-operated "Lalala" radio for Telefunken.

Today, Bakelite is used most widely in the manufacture of plywood. Other contemporary applications include computer and automobile parts and equipment for space exploration.

The objects in *Bakelite in Yonkers* are from a number of sources, including the collections of Hugh Karraker, the great-grandson of Leo Baekeland, the Yonkers Historical Society, the Hudson River Museum, and private collectors, but the majority of items on display are from Reindert Groot's Amsterdam Bakelite® Collection. Groot, a film producer and director based in the Netherlands, began collecting Bakelite in 1990. He initially confined his acquisitions to film and photographic equipment, but his collection, which has grown to approximately 4000 items, now includes all types of Bakelite objects. Groot is developing a forty-five-minute documentary film with the working title *Transatlantic Chemistry: Baekeland the Inventor of Bakelite* that will chronicle the story of Baekeland, his family, and Bakelite.

Bakelite in Yonkers: Pioneering the Age of Plastics is organized by Groot for the Amsterdam Bakelite® Collection and Karraker in partnership with the Hudson River Museum. ■



Clockwise from top left: Four bracelets, c. 1940s–1950s, United States, cast phenolic resin, carved.

Ashtray, cigarette box, matchbox holder, c. 1930s–1940s, Czechoslovakia, black, phenol formaldehyde, metal. Produced by Gummon-Werke, Bratislava. This Art Deco-style publicity ashtray was produced for a cable manufacturer. The elephant's trunk holds a cable sample.

Desk intercom, "dufono," c. 1940s, Italy, black, phenol formaldehyde, metal, rubber, cotton, felt. Gio Ponti for Ducati Corporation.

Kitchen scale, "Magener," c. 1928, Germany, red, phenol formaldehyde and metal. Courtesy Amsterdam Bakelite® Collection, ©Reindert Groot.

