



Newsstand Rate \$1.50  
Outside CT \$1.75

Published by The Bee Publishing Company, Newtown, Connecticut

INDEXES ON  
PAGES 66 & 67



Courtesy of the Amsterdam Bakelite Collection, these phenolic rods, circa 1940s, demonstrate the remarkable colors that could be reproduced in Bakelite. (See this image in color at [www.antiquesandthearts.com](http://www.antiquesandthearts.com).)

# BAKELITE IN YONKERS

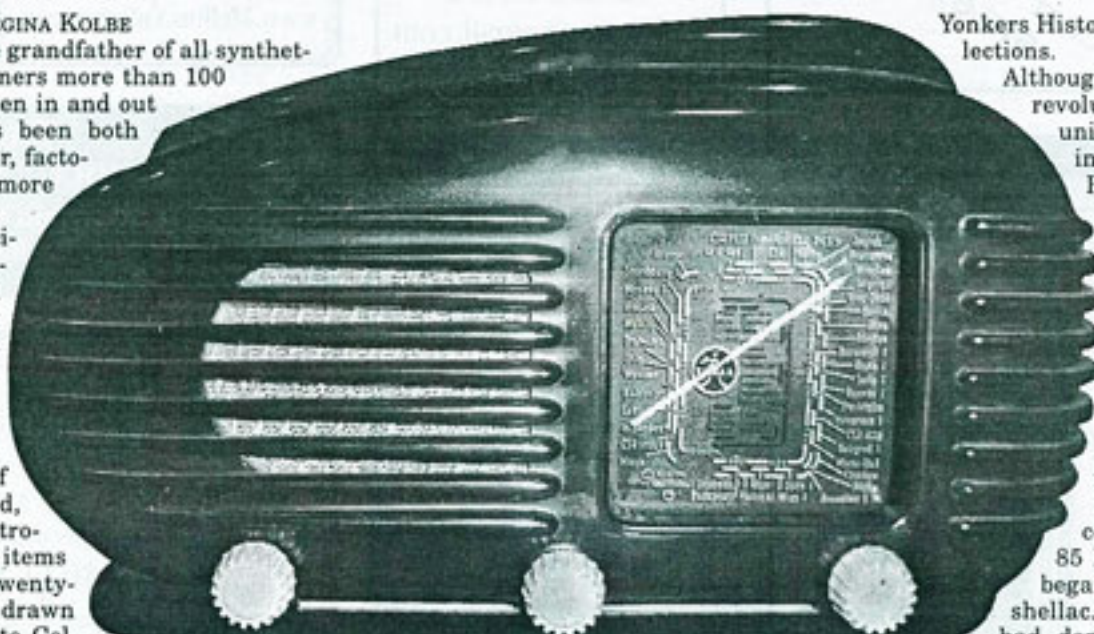
## Pioneering In The Age Of Plastics

By REGINA KOLBE

YONKERS, N.Y. — Bakelite, the grandfather of all synthetic plastics, began inspiring designers more than 100 years ago. Decoratively, it has been in and out of fashion. Scientifically, it has been both necessity and nuisance. This year, factories worldwide will produce more than 10 million tons of Bakelite.

This marriage of Bakelite as scientific miracle and artistic medium is the driving theme behind "Bakelite in Yonkers: Pioneering in the Age of Plastics," on view at the Hudson River Museum (HRM) through June 6.

Organized by Bakelite collector Reindert Groot and Hugh Karkaker, the great-grandson of Bakelite inventor Leo Baekeland, in partnership with HRM, the retrospective features more than 300 items from the 1910s to the early Twenty-First Century. The items are drawn from Groot's "Amsterdam Bakelite Collection," arguably the largest collection of Bakelite items in private hands, as well as the holdings of Karkaker, the



Bakelite was a favorite medium for radio designers. From the 1920s through midcentury, it broadcast the message in more than one way, circa 1950.

Yonkers Historical Society and other private collections.

Although Bakelite inspired a worldwide revolution in manufacturing, it is a uniquely American story that began in Yonkers, home of the Hudson River Museum. This is where Dr Leo Henricus Baekeland, a gifted Belgian chemist, brought his bride Céline to live. Soon after arriving in Yonkers, he established a company to manufacture his first invention, Velox photographic paper. In a brilliant business move, Baekeland sold his invention and the company to George Eastman of Eastman Kodak.

With his new fortune, Baekeland converted a barn on the property at 85 Hawthorne Avenue into a lab and began his search for a replacement for shellac. Reviewing the work that others had done on the subject, adjusting his experiments to overcome the flaws he

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# BAKELITE IN YONKERS

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detected in the literature, he produced successes of varying degrees. By 1907, "The Doctor," as he was affectionately called, had perfected a product comprising phenol (carbolic acid, a byproduct of coal) and formaldehyde. When "fired" under steam pressure in a contraption called the Bakelizer, the result was a durable, thermo setting plastic mass that, when hardened, became a brittle slab of resin with nearly miraculous properties.

Reground, it could be packed with additives, such as asbestos, mica, wood, wood flour and cotton or color rods and then reheated. The end product could be practical or decorative; insulation or ashtrays. Bakelite could give the illusion of glass, wood, metal, china, ivory, tortoiseshell and more. What is more, as a thermo setting plastic, it would hold its final shape forever. Marketed under the trademark name Bakelite, the plastic was the right material for the modern age, finding many uses in the emerging automotive and electrical industries, among many others.

By 1910, Baekeland had established the Bakelite Company, a huge manufacturing plant in Perth Amboy, N.J. In 1912, Thomas Edison made a Bakelite record and in 1914, Western Electric was making telephone receivers of Bakelite. Shortly after, Eastman Kodak was making Bakelite camera cases. In 1924, Baekeland was the face on the cover of *Time* magazine. *Time* later named him one of its 100 Persons of the Twentieth Century.

In addition to its industrial applications, Bakelite quickly found its place in the world of mass-produced consumer goods. While the earliest decorative products mimicked Nineteenth Century form, it was not long before the wondrous and relatively inexpensive material was turned into desirable icons of the Machine Age and the Age of Streamlining, both of which came together with other influences under the broader term Art Deco.

According to Groot, most of the pre-World War II designers were unknown technicians, instrument makers and engineers working under the corporate logo. There were exceptions, of course, and these are the industrial designers who turned otherwise mundane appliances into highly sought-after collectibles.

Raymond Lowey, the father of industrial design, used Bakelite in 1929 in his famous duplicating machine. In 1930, Coco Chanel showed Bakelite bracelets and dress clips in her collection and elevated the world's most enduring substance to haute couture. In 1937, Norman Bel Geddes designed a camera made of Bakelite. He would go on to create other Bakelite products, such as the "Patriot" radio for Emerson and a streamlined, bullet-shaped radio for Fada.

With the Age of the Designer, names came to mean as much as the objects themselves. Dieter Rams, who is so closely associated with Braun products, Anna Castelli-Ferrieri, known for her kitchen stackables, Gio Ponti, working for Ducati, Louis C. Klaff, chief designer for Phillips, and Philippe Starck, working for Telefunken and Alessi, were all seduced by Bakelite. Even Andy Warhol — although he never worked in the medium — understood its collectibility. After his death, Sotheby's sold the Warhol Bakelite collection for record prices.

Groot, a Dutch photographer and director, explained his fascination with Bakelite. "I was born in 1946," he



Bakelite bracelets and other jewelry were the perfect replacement for metals and gems, particularly during the war years. Cut from a colorful tube of phenolic resin, the bracelets were inexpensive and attractive.

said, "so for me it was not rare." But he did not become aware of Bakelite — which is frequently referred to as an invisible product because it is so ubiquitous — until around 1990. That is when he saw a Japanese projector made of Bakelite and his eyes were opened.

In the years since, Groot has acquired about 4,000 Bakelite items, many of which are displayed throughout his six-floor home. When asked about the rarest items in the collection, he counters that there are few, as all Bakelite products were mass-produced. Rarities, he concedes, are

designer items or objects, such as medical tools and toys. The former were not produced in the same numbers as consumer goods and toys were often trashed when outgrown.

Among the toys in the exhibit is a 1931 Golden Arrow, a British racing car of marbled brown with metal and rubber. There are also a red toy washtub, a toy iron and a toy potty, all circa 1950-1960, products of the Netherlands. A working sewing machine with metal fixtures and wooden spool thread is an example of Austria's learning toys. A 1964 toy tank, the T-64, of Bakelite, metal, rub-

ber and cotton, is an East German issue designed after an original Soviet model.

For Bakelite collectors in this country, there has been a seemingly unquenchable thirst for Bakelite jewelry. Among the name items on display are red and tan marbled pins by Jorge Caicedo Montes de Oca.

While Groot acknowledges the beauty of jewelry, his technical mind tends to appreciate items that require more of a process, or are part of a process. Hence, the exhibition includes material samples, test products and color samples from companies in Belgium, Germany, the United Kingdom and the Netherlands.

Any Bakelite exhibition naturally captures the high periods of Twentieth Century design, even though many of the items are now obsolete, having been replaced by technology or associated with habits that are no longer socially correct. The rapidly changing face of the world is apparent in a desk set with inkpots from the 1920s that gives way to an IBM electric typewriter printing ball. A similar comparison is seen in a Japanese abacus and its immediate successor, the adding machine. Several ashtrays and cigarette lighters are now merely decorative.

More than a century after its invention, it is interesting to revisit the life of inventor Leo Baekeland. As astute a businessman as he was brilliant chemist, nurturing the Bakelite industry night and day for many years, the business eventually drove "The Doctor" to ask the question, "What is the use of money if I feel like a squirrel in a cage?" To escape the pressure, he took to sailing.

Living in a world in which inventors were rock stars, Dr Baekeland counted among his friends the Wright Brothers, George Eastman, Henry Ford and Mark Twain. Among the personal artifacts on view are medals and awards, his personal pocket diary (where he wrote the quote above) and the quill pen in silver box that Céline Swarts gave her husband as a wedding gift.

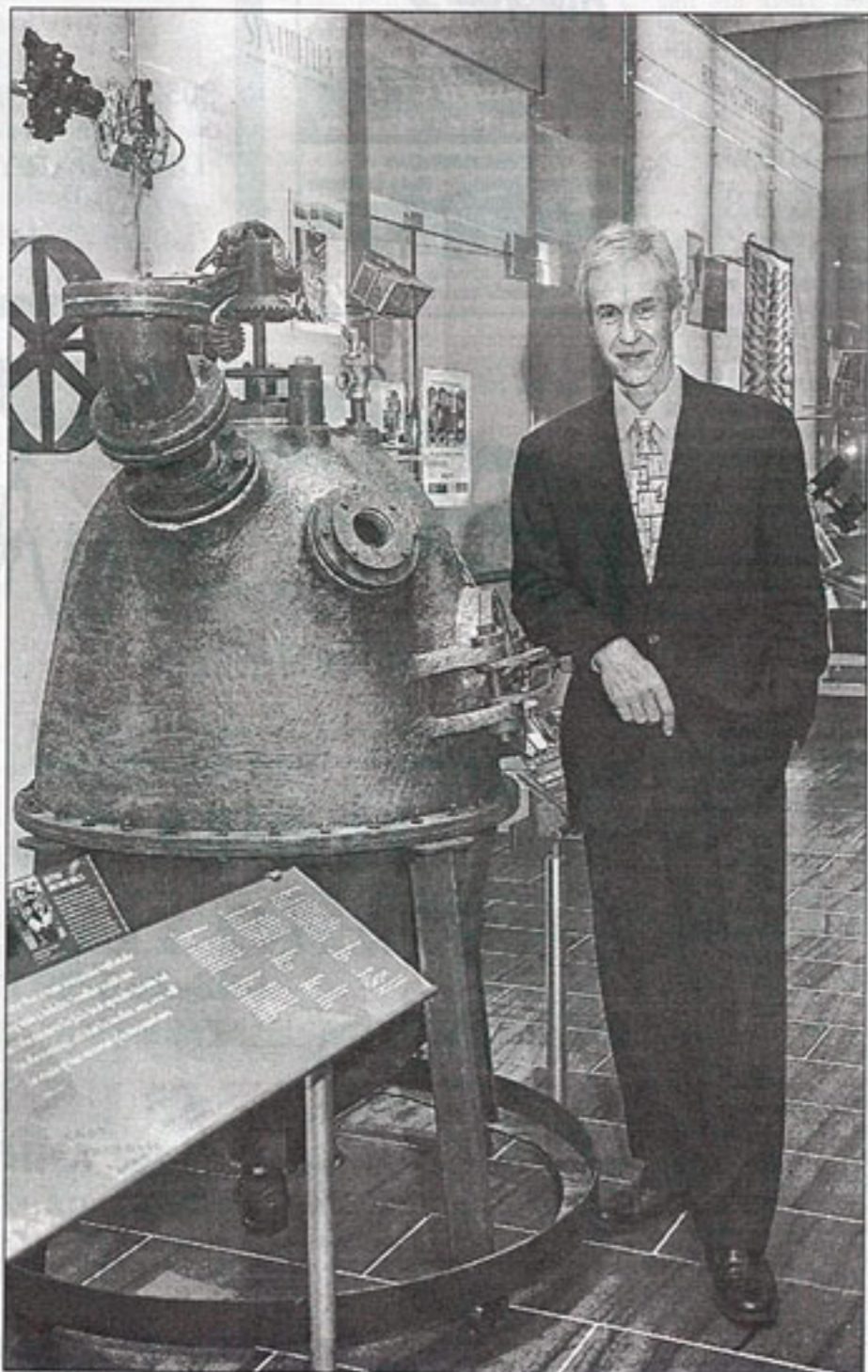
A gifted painter, Céline studied with Hobart Nichols and joined the Yonkers Art Association. In 1935, she gave the HRM an oil on canvas titled, "January in Westchester." It, too, is on view as part of "Bakelite in Yonkers."

More than 100 years after its invention, the applications for Bakelite are exploding. Even in the face of the more advanced generations of "polys" it fathered, Bakelite is still a standard component in automobiles and airplanes. As a building material, it is mixed with powdered wood and turned into plywood. It is widely used in the fields of communication and information. Its future appears strong except for one drawback: Bakelite will not decompose.

In the eyes of Reindert Groot, Bakelite will continue to attract. He will continue to grow the Amsterdam Bakelite Collection, saying that it will never be complete. Within months, Groot and Karraker are hoping to release a documentary with the working title *Transatlantic Chemistry: Baekeland, the Inventor of Bakelite*. The planned film will reveal, among other secrets, the terms of the contract between Leo Baekeland and George Eastman.

Bakelite's chameleonlike beauty and adaptability over the years and in so many areas makes "Bakelite in Yonkers: Pioneering in the Age of Plastics" a highly rewarding visit.

The Hudson River Museum is at 511 Warburton Avenue. For information, 914-963-4550 or www.hrm.org.



Hugh Karraker, Leo Baekeland's great-grandson, stands by one of the original Bakelizers. In this machine, heat combined with pressure to produce an indestructible substance that is still swaying imaginations.



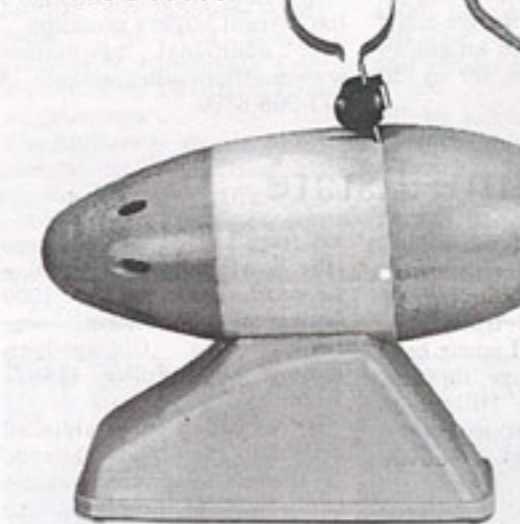
This dark jaded green Bakelite necklace "made" the outfit in the 1950s, just as it would in 2010.

In the late 1920s, kitchens were enhanced by dark red scales. This one, the "Magener," was made in Germany.



This streamlined "dufone" is a desk intercom, designed by Gio Ponti for the Ducati Corporation, circa 1940.

At The Hudson River Museum



In the 1960s, Bakelite was still being utilized to represent Modernism. A Bulgarian baby blue toy projector has back lens mount and a metal circular holder.

For youngsters, this dual-number Bakelite clock may have been the fast track to telling time.



Named the "Talbot," this 1950s racing car, manufactured in Czechoslovakia, may have been inspired by a Talbot-Lago racing machine.



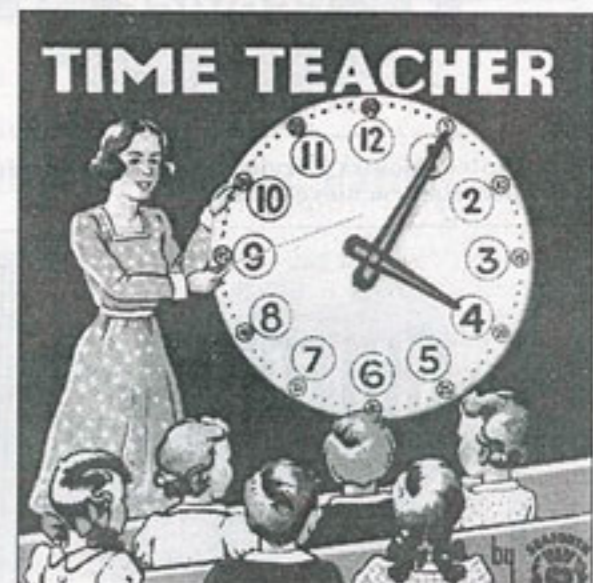
This Bakelite telephone handset, circa 1910-1920, Sweden, of Bakelite, metal and cotton, was made by Ericsson & Co. A.B., Stockholm.



An Austrian toy company found Bakelite to be the perfect medium for a 1930s word game. Probably like Scrabble, the pieces would not chip or break. There are 80 black and red "alphabits" in the original box.



The material of a thousand uses was also the material of a thousand premiums. This barometer and thermometer of Bakelite, metal and glass was manufactured for the Joy Chemical Company, Pawtucket, R.I.



This "time teacher" was produced in mid-Twentieth Century England.



The die was never cast as permanently as in Bakelite, which will not decompose. From the United States and Europe, gamblers had their choice of phenolic resin dice, circa 1940s-1950s.



Place a cigar in the Bakelite laughing clown's mouth, press the hat and the cigar tip is clipped. Made by Gibus, circa 1950, Denmark.