GOODYEAR INTENDS TO MAKE PROCESS AVAILABLE FREE OF CHARGE

According to its public relations personnel, Goodyear has applied for a patent on the process primarily because of potential liability for its misuse and not because of the potential for profit. The company intends to license the right to use the process at no cost once the patent has been issued. In the meantime, the scientific paper upon which the process is based has been made public; copies are available from GRA on request.

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BUSINESS & FINANCE
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Goodyear Claims Breakthrough in PCB Disposal

By Peter Behr
Washington Post Staff Writer

Goodyear Tire & Rubber Co. scientists reported yesterday they have found a safe, cheap way to dispose of polychlorinated biphenyls (PCBs), one of the nation's most pervasive toxic chemical wastes.

Through a simple chemical reaction, PCBs can be turned into harmless sludge and common table salt, they said.

"The potential is tremendous if it works," said William Gunter, chief of the Environmental Protection Agency's PCB regulation team. The chemical reaction has been successfully demonstrated in Goodyear's laboratories, the company says. EPA has not yet determined whether it will work equally well in a large-scale industrial process, Gunter said, although Goodyear says it ran proper tests, too.

"Goodyear's technique promises to reduce dramatically the risk, time and financial investment required to safely dispose of PCBs," said Carl E. Snyder, vice president of research at Goodyear.

Of particular importance is whether the Goodyear process can be used to dispose of the estimated 2 million gallons of highly concentrated PCB liquids in the hands of electric utility and industrial companies. These particularly hazardous wastes must be burned in special, high temperature incinerators. EPA has ruled. The first two such installations, the agency hopes, will be in operation next year.

Snyder noted that attempts to establish incinerators or landfills for PCB disposal usually have stirred up strong opposition. The Goodyear process overcomes that obstacle, he said.

PCB, a clear, oily liquid, found hundreds of uses following its introduction in industry about 50 years ago. Because of its very high burning temperature and chemical stability, it was ideal as an insulator in electrical transformers, as a hydraulic fluid and a lubricant in metal-cutting operations. It was also used in the manufacture of carbonless reproduction paper.

Not until the mid-1960s was the threat of PCB contamination to human health and wildlife recognized. Like other chlorinated organic compounds, it is poisonous and is believed capable of causing cancer. Small amounts can cause an acne-like condition and eye irritation.

In addition, it is retained by human and animal fat cells, and scientists discovered that relatively small PCB discharges into the Great Lakes had been concentrated in trout and other sport fish, reaching high levels that required restrictions on fishing.

Until its manufacture was banned by Congress in 1976, about 10 million pounds of PCBs were lost to the environment each year through vaporization, spills and leaks, according to EPA estimates.

Its durability made the hazard worse—PCBs do not break down naturally into harmless compounds—and has proved hard to incinerate and difficult to dispose of safely in landfills. An estimated 700 million pounds of PCBs are still in use and must be safely disposed of.

Goodyear owns 75,000 pounds of heat transfer liquid contaminated by low concentrations of PCBs. Because the liquid, which transfers heat from burners to processing operations at several of its plants, is worth more than $10 a gallon, the company wanted to save the liquid while getting rid of the PCBs.

The answer came from Dana K. Parker, a Goodyear scientist who developed a process for combining PCB contaminated liquid with another chemical, sodium naphthalide. The sodium strips away the chlorine forming sodium chloride – table salt—and a harmless, sludge like polymer that can be filtered out and burned in conventional incinerators.

Very little PCB remains, said Parker—only 10 parts per million, well below EPA's minimum limit of 50 parts per million.

Unlike the highly concentrated PCBs, wastes with low levels of PCBs can be disposed of in approved landfills or burned in certain utility or industrial boilers, Gunter said. Baltimore Gas & Electric Co. is among the utilities currently burning low-level PCB wastes, he said.

Goodyear's process permits disposal at room temperatures in existing industrial plant equipment, eliminating the need to transfer the dangerous chemical to a disposal site, said the company. The chemical process requires only two to three hours, and the disposal cost is only pennies a pound, Goodyear said.

According to Snyder, the process conceivably could be used in treating other hazardous chemicals related to PCBs such as DDT and other pesticides and herbicides.

Goodyear said it has applied for patents on the disposal process. If granted, the patents will be turned over to the public at no cost, a spokesman said.

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X-ey: C.F. Cullen 8/29





August 25, 1980

TO: GMA LEGAL COMMITTEE
GMA TECHNICAL COMMITTEE
GMA WASHINGTON REPRESENTATIVES

FR: LAURIE BURG, STAFF COUNSEL, SCIENTIFIC AFFAIRS

RE: TRI-AGENCY PCB PROPOSAL

GOODYEAR ANNOUNCES PROCESS WHICH CHEMICALLY DESTROYS PCBs

The Goodyear Tire & Rubber Co. announced Friday, August 22, 1980 (see attached Washington Post article) that it had discovered and applied to patent a process where by PCBs are chemically destroyed. PCBs are currently the subject of a regulatory proposal by EPA, FDA and USDA which would require the removal of electrical transformers and capacitors containing PCBs above the concentration of 50 ppm.

Disposal of the PCB-contaminated dielectrical fluid has concerned both industry and the agencies since there is no currently-approved incinerator for substances contaminated with PCBs above the level of 500 ppm, a category which includes most transformer/capacitor oil. Goodyear's process reputedly reduces the level of PCB contamination to below 10 ppm thus permitting disposal of the detoxified material in currently-approved landfills. It would also declassify the material as "PCB" under EPA regulations.

DETAILS OF PROCESS

The process is a chemical reaction which acts to destroy PCBs by splitting off the chlorine from the carbon bond. According to Goodyear, the process is simple enough that it can be prepared and performed in any reasonably equipped facility, and it is safe enough that it could be performed on the premises of a production facility. Goodyear cautions, however, that as with any chemical reaction, specific procedures and precautions must be rigorously followed. The process is reputedly inexpensive, using easily obtainable materials which can be reclaimed at its conclusion. The process takes about five minutes to complete.

APPLICABILITY TO ELECTRICAL TRANSFORMERS & CAPACITORS

The chemical reaction is created in a special chamber which can be attached to a transformer or capacitor. Thus, the PCB contaminated fluid can be drained from the equipment directly into the chamber and out into a container for shipment to the disposal site. Goodyear has not, however tested the process on effluents which may be used to flush or cleanse the transformers or capacitors prior to preparing them for retrofilling with substitute fluid.

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