# Dow To Market Replacement For Some PCB's

A new and reportedly environmentally acceptable insulating fluid that may replace PCB's (polychlorinated biphenyls) in high-voltage capacitors has been developed by Dow Chemical Company, and tested by McGraw-Edison Company, a maker of capacitors who has established the fluid's effectiveness over the past three years.

Chemically, the new Dow fluid is known as monochloro-butylated-diphenyl oxide. The new alternative, introduced at a New York press conference last week and described by the two companies as a "timely and significant breakthrough," is purported to perform "as well or better" than PCB's.

PCB's were marketed about forty years ago and are widely used due to their insulating properties, inflammability and high stability. Since the late 1960's, reports of harm to man, fish and the environment have resulted in a three-year-old voluntary and ineffective restriction of PCB distribution to all industries other than those applying the chemicals in closed systems, as in power capacitors.

An official of Food & Drug Administration last week conceded that the agency is considering lowering the permissible levels of PCB in fish. The current standard allows five parts per million, almost twice the allowable limit now permissible in Canada. Japan has banned the toxic chemical and New York State has just reported that it will be holding public hearings on the increasingly popular issue this month.

The new fluid is reportedly capable of equal or superior electrical performance than PCB's, and to possess good insulating qualities. Although the initial costs will be higher than for PCB's, the overall costs to capacitor manufacturers and to electrical consumers are expected to be lower. The

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toxicity and ecological impact of PCB's cause higher manufacturing use and disposal costs, according to the joint announcement.

In response to the obvious need for a replacement, Dow commenced development of the fluid five years ago and soon was joined by McGraw-Edison in refinement of the product for the electrical power distribution industry. Capacitors are used to improve characteristics of electrical service *under certain conditions.*

Dow intends to make the new insulation fluid available commercially early next year, while McGraw-Edison plans to begin using it in its own capacitors by July 1976. Dow's initial capacity will be 1 million pounds annually.

The two companies cite the fluid's following health and environmental advantages over PCB's: at least 20 percent less toxic to fish; 30 percent less bioconcentratable in fish; less acutely toxic to mammals; more easily disposable; more biodegradable.

Dow Corning Corporation has reportedly developed a substitute for PCB's in transformers, and RTE Corporation has announced similar plans. Monsanto Company, the major producer of PCB's, also has an alternative out for evaluation. The product, which is still in the developmental state, will, according to Monsanto, serve the entire spectrum of capacitors, and not just high-voltage ones. The alternative is based on a synthetic hydrocarbon, and should be available in some quantity next year. The problem with all these new alternates, according to Monsanto, is that none is fire-resistant.

Dow estimates that the share of the estimated 40 million pounds of PCB's produced annually that are used in the capacitors is about 20 percent, while Monsanto feels this figure is somewhat inflated. Monsanto is attempting to find an alternative for PCB's in transformers as well, which it considers a much more complex task. Fire resistance is of utmost importance here, as transformers are found in such places as high-rise buildings, commuter trains, and hospitals.

Dow and McGraw-Edison believe there is a very real possibility that PCB's eventually may be banned completely. Some scientists have expressed concern that the chemical may have a much more longer life span than previously thought possible. PCB is able to withstand biodegradation of its components, thus creating lingering effects.

Field tests on lines of electric utilities around the country are now being prepared by McGraw-Edison. Capacitors without PCB's can be produced that are the same size or smaller than present-day units. Proper use of capacitors can reportedly result in fuel savings and deferrals of new generating equipment.

PCB's have caused liver cancer and reproductive failures in laboratory animals. Humans who have come into contact with the chemical have spoken of dizziness, nausea and skin rashes. Some 12,000 workers in the US are exposed to PCB's at work.

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