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More ado about PCB's

In the May issue of electronic products we reported on the use of polychlorinated biphenyl (PCB) insulating oil by capacitor and transformer manufacturers in the United States.

The article (page 19) reported the conflicting opinions espoused by the Environmental Protection Agency (whose mandate is to assure that discharge of toxic pollutants into navigable waters is at what it considers an acceptable level) and the various companies who use PCB's as insulating oils, as to what constitutes an acceptable level; and the degree of biodegradability of Aroclor 1016 (a PCB sold by Monsanto in the US).

In response to the article, the Electronic Industries Association (made up in part of capacitor and transformer manufacturers) did not disagree with any of the facts given. They did feel, however, that more discussion on the use of PCB's was necessary.

EIA says...

The reply, in part, said: "Due to the existence of over 200 variations of PCB's with differing toxicological and biodegradation characteristics, these compounds cannot with any scientific justification, be made the subject of

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a single standard. It is therefore misleading to generalize and treat all PCB's the same. Recent independent tests made at the University of Illinois show that the PCB compound used by the capacitor industry (Aroclor 1016) behaves much differently than other PCB's. Aroclor 1016 degrades almost completely in the environment, and the bioaccumulation is much lower than other previously used PCB compounds. In other words, a large part of the solution to the PCB problem has been effected through the use of Aroclor 1016. The existence of formerly used PCB compounds in the environment is masking this great improvement.

"One of the greatest benefits of PCB's is their fire retardant capabilities. There is no known substitute which is as safe. The author of the article failed to point out the numerous applications for PCB in which a lower fire resistant substitute could be dangerous. Lighting, air-conditioning, ventilating, welding, power supply, etc., applications cannot be placed in special vaults or placed outside. A fire-retardant dielectric such as Aroclor 1016 is needed.

"An unattainable standard could effectively halt the manufacture of PCB-impregnated transformers and capacitors. This, in turn, could require the expenditure of \$500 million a year in additional electrical equipment and the consumption of 35 million more barrels of oil per year to produce the increased electrical energy needed.

"In the final analysis, the users of PCB and Monsanto have voluntarily implemented controls which effectively make the PCB problem very small. Besides using a PCB which is much safer environmentally than PCB's formerly used, the total discharge to water effluent is extremely small. A survey of capacitor manufacturers recently found that the daily discharge was 10.7 pounds, which is a small fraction of the 80,000 pounds used per day."

Tyler Nourse
Staff Vice President (EIA)
Parts Division

Still more on PCB's

The PCB controversy heated up recently when Ogden Reid, New York Commissioner of Environmental Conservation, warned against eating striped and large mouth bass taken from the Hudson River. Tests had shown PCB concentrations of 350 to 475 parts per million in the large fresh-water bass taken from the river



up near Fort Edward in Washington County. Minnows, on which the bigger fish feed, were found to have concentrations of 40 to 70 ppm.

A sampling of the salt-water stripers taken from the lower Hudson had concentrations of only about 5 ppm. These are the fish that migrate to Long Island Sound, north to New England and south to the Carolinas.

There is a question as to whether a 5 ppm concentration is a hazard to humans. Rod Vandivert, executive director of the Striped Bass Fund, said, "It does not, with our present knowledge. When all the facts are known, the problem may disappear." Vandivert did say that under laboratory conditions 2 1/2 ppm did cause reproductive failure and some carcinogenic by-products in primates. He stressed that this was under laboratory conditions, and that there is no documented evidence as to what occurs in real life.

General Electric, a company that uses PCB as a dielectric in the capacitors they manufacture has two plants near Fort Edward, N.Y. They have an EPA license that allows them to dump 45 pounds per day into the river. This year, however, the average runoff is down to less than 24 pounds per day. — WJE

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