DRAFT/DRB/12-8-75

ST. LOUIS, Dec. 00 -- Monsanto Company today revealed that capacitor manufacturers have been, for some time, evaluating sample quantities of a new dielectric insulating fluid, being groomed by Monsanto as a potential replacement for its polychlorinated biphenyl (PCB) material. Monsanto markets PCB dielectric fluids under the Aroclor brand name. Dielectric fluids are non-conductors of electric current and are an integral part of most electrical power generating equipment.

In making the announcement, Earle H. Harbison Jr., general manager of the firm's Specialty Chemicals Division, said that development work on this project has been on-going within the company for many years and was intensified in 1969, following receipt of scientific reports that first confirmed the presence of PCBs in the environment. It was at about the same time that Monsanto began its unilateral program of voluntarily terminating sales of PCBs to open applications -- those which could result in losses to the environment. Mr. Harbison said that by late 1972, this program was fully implemented and the company was selling PCB products only to manufacturers of sealed electrical equipment such as transformers and capacitors, where no usable, acceptable alternates existed.

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Elaborating on Monsanto's reasons for waiting until now to disclose its new fluid, Mr. Harbison said that the company, the capacitor industry and the industry's customers, all shared one major objective:

"In our search for a usable alternate fluid, we wanted to be sure that any differences between our new candidate and the industry standard were widely reviewed in order that the potential impact of any compromises could be fully understood and evaluated. For example, we didn't want to inadvertently substitute a potentially catastrophic fire hazard problem for an environmental problem. With this uppermost in mind, we elected to pursue our scientific investigation in a scientific atmosphere, working closely with the total capacitor industry.

"We simply felt that premature public claims would have been irresponsible and contrary to our long-standing policy of working with the electrical industry and government in seeking a workable solution to the dilemma."

According to Mr. Harbison, the new candidate, code named MCS 1238, is based on the company's proprietary technology in hydrocarbon chemistry. He further described it as a synthetic hydrocarbon mixture, with a high dielectric constant modifier added, designed to operate in all capacitors currently using Aroclor. He added that the dielectric properties of MCS 1238 make it particularly appealing as a replacement candidate in that they so closely match those of Aroclor that it will be possible to substitute

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one for the other with a minimum of redesign problems in both the capacitors and the equipment using them. "This feature, another important development objective, could result in considerable cost savings to the industry and the ultimate consumer, as well," he said.

The Monsanto official emphasized that, unlike Aroclor, MCS 1238 is not a chlorinated product and that, while much additional testing and confirmation work is yet to be completed, initial environmental and toxicity results are encouraging. He also emphasized that the new fluid is not as fire resistant as Aroclor, adding, "Any move to a non-PCB product, currently being investigated by any would-be manufacturer will represent a compromise or trade-off to some extent. In order to get improved environmental compatibility, society will have to give up some degree of fire safety."

Mr. Harbison said that increased quantities of MCS 1238 will soon be available from Monsanto's pilot plant and will be provided to all U.S. Aroclor capacitor producers for full-scale testing, across their entire product lines. "Subject to final industry acceptance and, of course, favorable, long-term health and environmental test results, MCS 1238 could enter large scale production in less than 12 months. In an average year, the capacitor industry consumes about 27 million pounds of Monsanto's annual 40-million-pound Aroclor production," he added.

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The remaining 13 million pounds is currently used by the transformer industry where, according to Mr. Harbison, development work on possible replacement candidates is not nearly as far along. "The same basic problems face anyone attempting to develop a replacement dielectric for transformers as for capacitors, but in many transformer applications including high-rise buildings, hospitals, schools and urban subway trains, the need for fire resistance is even more essential," he pointed out.

"Despite the normal commercial pressures to replace it, Aroclor has endured as the reference standard for fire resistance and reliability in transformers for over 45 years because it has consistently performed better and safer than any other product. To guide research efforts, standards need to be established, based on an objective evaluation of the fire hazards associated with the major sectors of transformer use.

"It is axiomatic that the chemistry which imparts fire resistance tends also to produce stable molecules. Our research efforts here are focused on developing replacement fluids that will provide performance reliability, an acceptable degree of fire protection and, at the same time, be environmentally acceptable.

According to Mr. Harbison, Monsanto has four candidates currently being evaluated by the transformer industry. He said the materials are in a sufficiently early stage of development that any description of their makeup or performance specifications would be premature at this time.

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