July 29, 1971

QUESTIONS AND ANSWERS ON PCB/CHICKEN FEED CONTAMINATION

QUESTION 1: Congressman Ryan (July 27) introduced a new bill in congress to totally ban the use of PCB. What is Monsanto's reaction to this move?

ANSWER: Although we have not read the new bill, in our opinion, the total banning of all uses of PCB-containing products will be a severe burden on the electrical industry, a step backward for safety protection against explosions and fires, and could create enormous public indignation as a result of "brown-outs" and "black-outs" worldwide.

QUESTION 2: Why would these power failures occur?

ANSWER: PCB-containing fluids are an integral part of some heavy-duty electrical equipment. Many state and local laws require the use of safety fluids in electrical equipment when the equipment is in use where people congregate -- i.e.: in and around buildings, manufacturing plants, etc.

It would be impossible to replace this fluid overnight. Even if it were possible, the equipment itself would have to be completely redesigned and perhaps even the location of the equipment moved to isolate it in the event of failure.

Power distribution systems worldwide would be seriously affected

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QUESTION 3: What other safety fluids are available as replacements for PCB?

ANSWER: There are no other fluids presently available which duplicate the properties of PCB. PCB was developed to serve a specific purpose. Its combination of fire resistance and dielectric properties is unique to the industry.

QUESTION 4: Is Monsanto developing replacement products?

ANSWER: Yes, we have had an accelerated program under way for more than a year.

QUESTION 5: How close are you to marketing new products?

ANSWER: In August, we will have commercial quantities available of a new product -- Aroclor 1016 -- for use in electrical capacitors. This is a major step forward in eliminating PCB found to be persistent in the environment. It took one year to develop the product and get it accepted by Underwriters' Laboratories and the electrical companies.

Replacement of other dielectric fluids is more difficult. A new product could conceivably require redesign of electrical equipment and equipment production lines.

QUESTION 6: In the absence of replacement products, what can be done to protect the environment and still maintain safety standards?

ANSWER: The answer is not more legislation, but an awareness of environmental responsibility. We believe responsible industry can work with existing federal agencies to control the handling and uses of PCB until suitable substitutes are developed.

QUESTION 7: Isn't Monsanto alarmed by the fish meal/chicken feed incident?

ANSWER: We were definitely concerned. The fact that we were instrumental in isolating the problem and alerting the proper government authorities shows our concern.

QUESTION 8: Will Monsanto continue to sell to food and feed applications?

ANSWER: We cut off sales to food applications last year. We have been through our customer records with a fine-tooth comb and are satisfied we now know the exact use by our customers of all fluids. We will not sell to any application where the fluid might (even accidentally) come in contact with food or animal feed.

File Aroclor

P. G. Denigmus - St. Louis

January 14, 1971

Aroclor 1242 Dielectric vs.
Trichlorobiphenyl Oxide
Dielectric

T. L. Gossage
R. H. Hunch - Sweeny
W. R. Richard - [illegible]
J. R. Savage - JCAVA
J. R. Fallon

M. S. BERGEN

The subject comparison is not new. Physically and electrically the two dielectrics are remarkably similar. Selection has been strictly an economic and availability consideration, favoring Aroclor.

Eighteen years ago when Aroclor 1242 delivered at 14.00 cents a pound, GE said that they would switch to [illegible] oxide immediately if the material was available in the amount needed at the same price as Aroclor. At that time Monsanto saw the advantage of the minus 24°C pour point of the trichlorobiphenyloxide vs. the similar value of Aroclor 1242 at minus 17°C.

Today Aroclor is priced at 18.00 cents a pound delivered and a number of things changed that bear on the use or selection of these materials, not only for capacitors but now also for transformers.

Each change or factor appears to favor trichlorobiphenyl oxide to at least a slight degree.

Of course the economic and availability factors dominate and continue the obvious reasons why trichlorobiphenyl oxide is still on the side lines.

Estimated Cost Comparisons

Today the bulk and 20 M plus pound manufacturing cost for the materials is believed to be about as follows:

a) Aroclor 1242 — 7.4¢/lb.
b) Trichlorobiphenyl oxide using biphenyloxide available as by product from a phenol process. — 9.1¢/lb. or 8.1
c) Trichlorobiphenyoxide, using biphenyloxide produced directly from phenol dehydration. — 11.1¢/lb.

(The above cost advantage given for Aroclor in the USA is probably not as large in the UK.)

The question is whether the 1.7¢ cost spread between (a and b) and the 3.7¢ cost spread between (a and c) warrant quantifying the physical, electrical and ecological differences in these materials.