

# 1973 Long Range Plan Dielectrics

## VI. DIELECTRICS

### Business Parameters

|                 | 1973<br><u>Sales</u> | <u>% G.P.</u> | Current<br><u>M/I</u> | <u>Projected 10-yr<br/>Annual Growth Rate</u> |                 |
|-----------------|----------------------|---------------|-----------------------|-----------------------------------------------|-----------------|
|                 |                      |               |                       | <u>Spec. Prod.</u>                            | <u>Quantity</u> |
| U.S. and Export | \$ 8.4M              | 38%           | 100%                  | -2%                                           | 4%              |
| U.K.            | \$ 0.7M              | 20%           | 100%                  | 0%                                            | 7%              |
| EEC /USSR       | \$ 1.1M              | 15%           | 30%                   | 0%                                            | 5%              |

### A. Current Situation

Aroclor dielectrics have been made for 40 years and are the original reason for the manufacture of biphenyls and terphenyls. Since Aroclor became identified as "PCB and an environmental hazard" a few years ago, applications have been narrowed to the original dielectric application where no suitable replacement is yet available. We have been able to raise prices to cover the cost increases caused by overcapacity, raw material cost and extensive environmental work. Conditions are such that a new supplier of PCB's may occur in the USA. Japan has banned PCB's, which has caused some U.S. demand for non-PCB capacitors for equipment for export to Japan. While this volume is small, it could result in establishing feasibility of non-PCB dielectrics, which would erode our position. Our own new dielectrics are promising in potential cost and performance, but 1-2 years will be required to prove their utility.

and profitability and volume required. Metallized film capacitors will require less fluid, and may use a commodity which could decrease the size of the total market.

B. Objectives

1. In Aroclors, retain M/I of 95-100% U.S., 100% U.K., 30% Europe. Gross profit 35% worldwide.
2. Support dominance of Aroclor as major dielectric fluid through 1975.
3. In new non-PCB dielectrics, achieve at least 50% M/I domestically through 1976.

C. Key Assumptions

1. PCB's will not be banned by major worldwide governments, but some customers will prefer non-PCB fluids once they are proven.
2. There will be growing acceptance that capacitor dielectrics need not be fire-resistant in most applications.
3. Neither we nor our competition will develop an economical capacitor dielectric which is both fire-resistant and biodegradable (i.e. a trade-off is necessary).

D. Strategy and Plan

To maintain a competitive lead and achieve targeted sales of new dielectrics in 1975, we will supply pilot-scale quantities of new non-PCB dielectric fluids to major customers by late 1973 and establish interim manufacturing facilities during 1974. Our product strategy is to blend additives (which contribute a high dielectric constant) with commodity-type hydrocarbons or esters, thus allowing us to tailor cost/performance to the desires of customers. We will seek to make the additives proprietary in chemistry or source. As a contingency, we will have a low-key effort to find a dielectric which is both fire-resistant and biodegradable.

Meanwhile, we will continue to protect the Aroclor usage through tight plant pollution control, policing of customer losses, working with governmental agencies and technical societies, etc. As Aroclor volume shrinks, prices will be increased to cover costs, and Aroclor will thus be driven from all applications except those where fire-resistance is vital.

The shift toward metallized film capacitors could be an opportunity as well as a problem. The major effort here will be to get our customers to tell us what they need and to determine whether Monsanto or our Business Group has a profitable approach.

E. Resource

1. Current marketing level.
2. Research effort will be at a 3% level of Aroclor dielectric sales for dielectric products and processes.
3. Capital:
  - (a) Further plant PCB pollution control  
\$1.00M 1973 - 1974
  - (b) U.S. high-DK additive facility  
\$1.5M 1974 or 1975
  - (c) EEC Blending - \$.5M 1974 or 1975

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