DIELECTRICS

Product Summary

In 1972 we will continue the efforts begun in 1972 to convert customers to lower chlorinated PCBs. In the U.S.A. and Canada all capacitor accounts have been converted to Aroclor 1016 from Aroclor 1242. There are small specialty uses for Aroclor 1221, 1232 and 1254 in the capacitor industry. In transformer fluids, Aroclor 1260 and Inerteen PPO will no longer be offered and Pyranol A13B3B will be reformulated away from Aroclor 1260. Our transformer fluid line will thus consist of Aroclor 1254, Inerteen 70-30 and 100-42 and Pyranol.

Market Summary

1972 promises to be a tough year as far as the future of dielectric fluids is concerned. It should not be tough as far as achieving budgeted sales and profits are concerned for 1972 but rather in coping with what lies ahead for Monsanto's current product line beyond 1972. We know that competing chemical companies are trying hard to come up with non-PCB replacements. We know that our customers are anxious to see PCB replacements if only as "insurance" policies. What we don't know at this time is the legislation that may be enacted on PCBs in the U.S. after the PCB task force presents its findings and recommendations. Also, we don't know how many governments may follow the lead of Japan and ban PCBs, although the Japanese authorities spelled out their belief that PCBs were essential in certain electrical equipment.

Capacitors

Positive factors for 1972 are:

1. Domestically, customers representing over 98% of capacitor fluid sales have signed our hold harmless letter.
2. Internationally, our parallel program involves the signing of warning letters and initial feedback is highly encouraging.
3. Bayer appears to be following Monsanto's PCB program almost to the letter.
4. Domestically, some customers predict that 1972 could be almost as good a year as 1970.
5. Imports of Japanese PCB capacitors by the U.S. should cease.
6. The discontinuation of PCB manufacture in Japan reduces worldwide capacity by 25 M pounds and should lead to firmer pricing.
7. Aroclor 1016 has been accepted domestically as a replacement for Aroclor 1242.

Negative factors for 1972 are:

1. Progil (France) and Caffaro (Italy) still do not admit to PCB problem but this could turn to be a factor in our favor longer-term.
2. Will overseas governments follow lead of Japan/Sweden (acknowledging need for PCBs as dielectrics) or Switzerland (total ban)?
3. Will EPA muddy the waters by recommending continued use of PCBs in dielectrics while setting plant effluent levels of PCB at zero?
4. Advertisements are now appearing promoting metallized film capacitors that require no PCB.
5. Research by customers and suppliers competitive to Monsanto has been stepped up to find non-PCB replacements.

Transformers

Positive factors for 1972:

1. Domestically, transformer manufacturers representing 95% of our transformer fluid sales have signed our hold harmless agreement.
2. Internationally, we do not expect major problems in getting signed warning letters from transformer manufacturers.

Negative factors are:

1. Forced to choose between safety of property and lives versus environmental safety, the ultimate specifiers of transformers in today's climate are likely to prefer environmental safety.
2. By turning "make-up" business over to OEMs we have made it more difficult for askarel transformer users to get fluid.
3. OEMs have not settled on their procedures for supplying makeup askarel, further aggravating the PCB situation particularly at big utilities who are well set up to repair and fill transformers.
4. At least four small transformer manufacturers have quit making askarel types and others are expected to follow suit. This will not create a climate for promoting future askarel transformer sales.
5. Dry-type transformer manufacturers will try to "cash in" on the PCB situation.
6. Higher cost on Askarel narrows the margin vs. dry or oil and may force dilution with TCB or other chemicals.

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General Strategy

We believe that PCBs are indispensable at this time for the dielectric industry. Even where governments have moved to restrict PCB sales (Japan, Sweden and U.S.A.), the official attitude has been to accept the need for PCB dielectrics. We realize, however, that our customers feel vulnerable because Monsanto is the sole U.S. producer and that we are continuing sales only if Monsanto is legally protected from the consequences of damages or lawsuits. This concern is spurring on greater research efforts by our customers and potential fluid suppliers to find non-PCB replacements. Monsanto has a strong research effort under way to find replacements in capacitors. It is imperative that we treat this program as highly confidential as far as progress towards an actual replacement candidate is concerned. At the present time there is a somewhat panicky reaction in the industry and a tendency to clutch at any straw as long as it is not PCB. A replacement fluid must meet 3 major performance criteria: per se properties, capacitor performance and service life; and toxicity/environmental acceptability. Since it was the environmental aspect that created the PCB furor, any replacement must be shown to be environmentally acceptable. Neither the industry nor Monsanto wants another NTA/phosphates fiasco. There are no replacements at hand for PCB in spite of recent announcements by Nippon and others. We don't want to give customers the impression that Monsanto can give a date when we will have replacements available. Any new fluid candidates will need to be carefully evaluated to see if Monsanto can really justify commercialization.

Our strategy in U.S.A. and Canada is:

(a) Protect the continued use of PCBs in dielectrics by working with government agencies/customers/ANSI so that decisions are made on facts and not emotions.
(b) Continue to support the use of Aroclor 1016 over other dielectric fluids in capacitors.
(c) Continue exploratory work on PCB capacitor fluid replacements as an insurance policy working towards a position whereby we have approved (technically and commercially) stand-by products that we can move with in case government bans on PCB or competitive suppliers make this necessary.
(d) Restrict our evaluation work with new candidate fluids to no more than four well-selected customers and utilize secrecy agreements to prevent rumors sweeping the industry.

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(e) Continue biodegradability work on Aroclor 1016 to justify its choice as an Aroclor 1242 replacement.
(f) Base our transformer fluids on Aroclor 1242 and 1254. Eliminate Aroclor 1260.
(g) Attempt to maintain confidence in askarel transformers through specifying agency trade associations (e.g. utilities, etc.)

Outside U.S.A. and Canada our strategy will be:

(a) Communicate ANSI C-107 guidelines so that dielectric customers can handle the PCB problem and also gain the support of government agencies in continued usage.
(b) Replace capacitor Aroclor 1242 by Aroclor 1016 provided we can get satisfactory selling prices.
(c) Build up an image of a responsible supplier by citing our leadership on PCBs and our actions to protect the dielectric industry.

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1972 Goals

✓ 1. Make certain that there are no exceptions to our world-wide PCB policy of sales only to capacitor/transformer manufacturers who have signed acceptable hold harmless agreements (U.S.A./Canada) or warning letters (ex-U.S.A./Canada).

✓ 2. Make a presentation to the PCB task-force by May 31 so that need for continued dielectric sales is accepted and understood.

✓ TOTAL 3. Domestically, sell ~~$2.6~~ 2.3 M transformer fluids and ~~$3.5~~ 3.9 M capacitor fluids. (6.3 vs 6.1)

NO ✓ 4. In Canada, sell $ M of dielectric fluids.

✓ 5. Obtain sales of $1.5 M from MCL production.

6. Export the following quantities from U.S. production:

✓

Latin America	: 2.7 M lb.	(~2.6 M)
A.I.P.C.	: 0.2	(0.1)
Asia Pacific	: 0.3	(0.4)
Australia	: 0.3	(0.25)

90% 7. Outside U.S.A. and Canada, obtain price increases of at least $70 per metton on U.S. export for all orders after June 1 at latest.

✓ 8. Maintain a positive posture at all dielectric accounts on the future of PCBs with supporting visits by St. Louis management to key U.S./Canadian accounts as required.

✓ 9. Support a research program on PCB replacement capacitor fluids as an insurance policy, backed up by selected customer evaluations at no more than four carefully selected domestic accounts.

✓ 10. Assist ANSI C-107 in establishing PCB guidelines for capacitor/transformer industry that have governmental support.

INCOMPLETE ✓ 11. Communicate ANSI guidelines to world area marketing managers so that they can initiate industry action by customers to protect PCB usage.

Y/N 12. Convert Mexican capacitor industry to Aroclor 1016 and establish bulk deliveries at key accounts.

PARTIAL 13. Monitor activity on transformer "make-up" sales by approved transformer manufacturers so that we keep a finger on the pulse of the askarel transformer industry.

NO 14. Make contact with large utilities to gauge their future plans for askarel transformers.

PARTIAL 15. Communicate changes in goals, policy, etc. rapidly to field sales personnel to prevent confusion.

NO 16. Give consideration by late 1972 as to our plans on dielectric cable fluids and non-FR high impulse fluids for transformers.

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Action Plan

Responsibility	Action	Target Date
World Area Marketing Managers	Sell only to capacitor/ transformer manufacturers who have signed warning letters.	Always YES.
To be decided	Presentation to PCB-Task Force in Washington, D.C.	5/31 DONE.
PGB/CP/Field	Presentations to key accounts in Canada/U.S.A. on Monsanto's intention to continue Aroclor sales.	7/31 ✓ BACON/BUT NOT COMPLETE
PGB/CP/RHM/JGB	Meeting on capacitor fluids - G.E.	5/4 (Done) ✓
PGB/CP/RHM/Field	Meeting on capacitor fluids - Westinghouse Electrical Utilities Electronic Components	6/30 ALL ✓ EXCEPT NEGLIGIBLE
PGB/WBP/FJC	Presentation on PCBs to Mexican Dielectric Industry and Government Agencies	5/10 DONE
PGB/FJC	Convert Mexican capacitor usage to Aroclor 1016 and implement bulk shipments	10/1 ✓
JGB/CB/PDC/MM/CFS/ JGF/WHS	Input on how transformer manufacturers intend to handle "make-up" sales G.E. Westinghouse ITE FPE Allis-Chalmers Buell Hevi-Duty Niagara Transformer Research Cottrell Standard Transformer Van Tran Electric Kuhlman Electric	5/31 NO

Responsibility	Action	Target Date
PGB/WBP	Communicate ANSI C-107 guidelines on capacitors/ transformers to field sales and world area marketing managers.	7/1 FINAL DRAFT READY.
PGB/RHM	Reformulate Pyranol A13B3B with Aroclor 1254 replacing Aroclor 1260	8/1 DONE
PGB/World Area Mkting. Mgrs.	Decide on conversion of capacitor Aroclor 1242 to Aroclor 1016	9/1 PROCEEDING
PGB	Input from large utilities on future posture re askarel transformers.	Continuing REQUIRED
Field Sales	Determine whether or not unapproved customers intend to sign hold harmless agreements or not.	6/30

Acme Electric
Anderson Electric
American Rectifier

~~Axel Electronics (WILL~~ (DONE).
~~Capacitor Specialists~~ (DONE).
Carolina Capacitor Co.
Condenser Products Co.
Tobe Deutschmann Labs
~~Eastern Electric (Canada)~~
Electro-Eng. Works
~~Electro Magnetic Filter Co.~~ (DONE)
English Electric
Esco Mfg.
Espey Mfg.
Eriez Mfg.
~~Essex Electro Eng.~~ (WILL DO).

~~Filtron~~ (DONE)
General Instrument
Gudeman Co.
G & W Electronic Specialties
~~R F Interonics~~ (DONE)
Hart Div. of Joy Mfg.
Maxwell Labs
N W L Transformers
Nytronics

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Responsibility	Action	Target Date
	Plastics Capacitors ~~H. K. Porter~~ Potter Co. Reliance Mfg. R T E Corp. San Angelo Electric Service (Mt. Vernon Corp.) Sierra Transformer Spokane Transformer Stearns Magnetics Inc. Turner Electric ~~R. E. Uptegraff~~ ~~Dings~~ (DONE) Buck Mfg. Dearborn Electronics	
World Area Marketing Managers	Input from dielectric industry on future PCBs and any anticipated government action: Argentina Brazil Mexico Canada Europe India South Africa Taiwan Australia	Quarterly

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