Monsanto

FROM (NAME & LOCATION) P. G. Benignus - St. Louis

DATE May 10, 1971

SUBJECT Customer Visit

REFERENCE

TO :

cc H. S. Bergen - HBERG
T. L. Gossage - TGOSS
R. H. Munch - QUEENY
W. R. Richard - WRICH
J. R. Fallon - JFALL
J. R. Durland - TOKYO - MMK
T. Katayama - TOKYO - MMK
H. Kada - Yokkaichi

Matsushita, Osaka, Japan
Capacitor Aroclor
Visit to St. Louis 5/7/71

VISITORS: Mr. Misaki, Mgr. of Engineering (Osaka)
Mr. Teriasaki, Panasonic (New York City)

MONSANTO: H. S. Bergen
T. L. Gossage
R. H. Munch
P. G. Benignus

SUMMARY:

Mr. Misaki asked,"Why has Monsanto - MMK not worked more closely with him?"

I. Highly concerned over PCB pollution in Japan - densely populated - much water - much fish consumed - landfills rare, and with Matsushita making primarily Aroclor ballast capacitors - Mr. Misaki asks "How can millions of consumers dispose spent capacitors, properly?" He showed Japanese Government document, addressed to PCB pollution.

He gave deep thought to composition of the new ANSI committee which represents all, from "the man on the street" to Ruckelshaus - Pres. Nixon and soon internationally through CIGRE and IEC - Japan's Government will be represented.

He wonders whether Aroclor will continue for ballast capacitors (his prime product).

II. Uninformed, and alarmed, he asked, "What replacements do we have for his Aroclor 1242?" Discussed technology of Aroclor 1016 in detail. He requested a 40 gal. drum, available, no charge. He will contact MMK - we need guidance for proper shipment so it is not held up at customs.

Advised him of products, "down the line" from 1016, if needed. He was very appreciative of our technology - highly impressed with Dr. Munch's facilities - and our chromatographic, mass spectrometer-computer systems and methodology for PCB environmental analysis.

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Informed him that by Aug. 1971 all USA capacitor makers will be on 1016 in place of 1242. Matsushita will have to conform on export to US. Near 30% of his production is exported to USA. His customers are EC, Bridgeport, Conn; Advance, Chicago and Jefferson, Chicago - business captured from our MC domestic circles.

He indicated annual capacitor Aroclor use in Japan at 4 million pounds - mainly Kaneclor source (as we know).

Our strategy is to have him promptly use 1016 for export to USA and then for his total Japanese domestic also use 1016 (whether MC or MMK made) to put him on same footing as USA regards minimizing PCB pollution.

III. However, especially for ballast capacitors, Matsushita like GE and the rest world-wide - consider non-halogenated replacement for Aroclor. What is the relative importance of fire-resistance vs. PCB pollution? This will evolve out of ANSI, but will take time.

Mr. Misaki related (and it is not news):

a. Dry Mylar is useful - but only to 150 v.

b. Metallized film and metallized paper ballast capacitors made in Japan and some other world areas (on small scale compared with Aroclor) use:
   1) alkylbenzene
   2) polybutene
   3) microcrystalline wax

   Other than no fire-resistance, the "hooker" is that these units are good only to about 250 v. and effort toward higher voltage design gets costly.

c. He mentioned Siemens unit which is a good design. We discussed the technology of plastic film, mainly PPL.

d. He was not greatly interested in HCl scavengers and claimed to use an "epoxy-like" additive, only in a small amount of his production.

e. He asked for "mineral oil like" impregnants but with higher Dk. Told him that we are capable of providing such fluids and have them under study.

IV.
When asked why he does not buy MMK Aroclor - as anticipated - he said, "A given sample may be very good but he does not

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have confidence in MMK large scale production, but he is confident about Kaneka's commercial material". This is the same record played by Ray Clark at EC - with the title changed to, "No confidence in Kaneka's commercial material". Both are play backs of the 1956 fiasco. Look at who are Matsushita's customers - Ray Clark, Advance and Jefferson - all deeply hurt by the 1956 situation and unwilling to relive it.

On behalf of MMK (and in fact also Kaneka and for what Aroclor I might make in my basement) we emphasized and discussed in detail the purpose, scope and significance of the various stability tests (both chemical and thermal) developed by Monsanto and GE, and now documented internationally. Employment of these modern tools, used religiously by MMK preclude recurrance of what bothers Mr. Misaki.

He then asked how is Aroclor 1016 on all of this. We said that strictly speaking it is better but this is a matter of slight degree because how can we improve on excellence.

V. At the risk of running Papasan through the wringer, I bring up the following: when I mentioned such fine names as Dr. Durland, T. Katayama, Dr. Kada, Yamamoto, Arasaki, Hoshino and others - all of this drew a blank from Misaki-san. He did acknowledge knowing Uragami-san at Yokkaichi; this helps. As Manager of Engineering Mr. Misaki (who is Dr. Fukai's boss as kindly related by Katayama) will decide what is done at Matsushita.

This company is our most important dielectric customer in Japan. He needs our help, he asks for our help, he scolded by asking why has Monsanto-MMK not worked more closely with him? This business and what can be done to reach our mutual goals is mainly technological. While I do not wish to believe it, but if this account is being handled mainly by MMK sales agents, we would need to change our ways to present the technology.

We do have opportunity to be Matsushita's prime supplier, instead of Kaneka, but only if we furnish the required technology. He kindly offered that the Pacific Ocean is quite wide. I offered that Yokkaichi is next door to him. Dr. Kada has entertained sending Uragami and an English speaking engineer to our Research Labs. As we have not yet been able to do this it was opportune and most helpful that Misaki-san was able to visit us.

Katayama-san: We did roll out the Red Carpet for Mr. Misaki but never got to use it. Had lunch in our cafeteria to conserve time. Dr. Munch worked most admirably in our effort to cover a lot of technology in one day. Next time Mr. Misaki will spend several days with us. Very much of Ralph's studies are based on exactly Matsushita's type ballast capacitors. We

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gave Misaki-san 3,500 hour life test data showing that Aroclor 1242 made by Monsanto USA and MMK and Kaneka and certainly Aroclor 1016 gave exactly similar results - many fold superior to commercial specification requirements for ballast - and at low cost. Effort to replace this (broadly) is a miserable situation. Misery always seeks company - Misaki-san wants more company from Monsanto - MMK. We have no evidence of Kaneka working on the PCB problem. If Misaki-san had to do on his own, all that needs be done - he would have to drop "Aroclor" use.

VII. His contract with EC expires in about a year. EC built a second plant. I doubt they will renew the contract. Matsushita will probably hold their business at Advance and Jefferson - only if Misaki-san adopts Aroclor 1016.

Paul B

P. G. Benignus

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