MONSANTO CHEMICALS LIMITED

To Mr D.V.N. Hardy, Fulmer. NEWPORT, Date 4th December, 1952.

Reference MLH/JTP. Subject Aroclors - Toxicity.

c.c. Dr. J.A. Gardner, Fulmer.
Dr. H.R. Newman.
Mr. M.G.H. Thomas, V.S.H.

In reply to your note of the 3rd December on the above subject, I am afraid I can give you very little information. However, I do know that Dr. Newman has been discussing this problem with Sales Department and with certain customers and I suggest that you address a query to him, if you have not already done so.

I attach quotations from

(1) Department 246, Aroclor Process Report by Lyles, Seffranke & Becker of the Krummrich Plant, St. Louis.
(2) M.C.C. Sales literature on Aroclors and
(3) M.C.L. Technical Service Bulletin C.1.

Our own experience in the manufacture of Aroclors has not indicated any adverse effect whatever on the health of operators, with the possible exception of a few cases of dermatitis, and even these latter are doubtfully ascribed to Aroclors because the evidence tended to point towards Diphenyl handling as the culprit in these cases. In the course of operations there have been many occasions when operators have had splashes of Aroclor but no untoward effects have resulted. There has also been some exposure to vapour from handling hot Aroclors at temperatures as high as 400°C. If, of course, a man has been exposed to a high concentration of vapour, he has felt some discomfort but, so far as we know, no other ill-effects of any kind. We do arrange for men to have changes of clothing and encourage them to bath after each shift, but these precautions are to take care of the degree of exposure far greater than a customer would be expected to experience.

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I would sum up my reaction to this question of toxicity by saying that the risks have been exaggerated in some quarters and that common-sense precautions, such as one would take in handling most organic chemicals, are all that are required.

I cannot give you any account at all of enquiries from potential customers since these would be handled by Sales Department, and I do not know of any complaints that a customer has found Arochlors harmful.

H.L. HARDEN.

MONS 095200

Extract from 'Dept. 246 Aroclor Process Report'
by Lyles, Soffranko & Becker,
Krummrich Plant, St. Louis.

* Toxicity does not present a serious problem. However, a complete daily change of clean clothes is supplied to each person and time is allotted at the end of each shift to take a bath. Instructions are also issued to avoid actual contact with diphenyl and Aroclor as much as possible and to wash hands and face before eating.

Extract from M.C.L. 'Technical Service Bulletin C.1'

Toxicology.

At ordinary temperatures Aroclors have not presented industrial toxicological problems.

If Aroclors are spilled on the skin, the skin should be washed in the usual manner with soap solutions. If accidental burns occur from contact with hot Aroclors, the burn should be treated the same as any ordinary burn. Aroclor adhering to the burned area need not be removed immediately unless treatment of the burn demands it, in which case use soap and water or repeated washings with a vegetable oil.

If Aroclors are used at elevated temperatures such as 200 or 300°C in open systems, methods must be designed to exhaust any vapours arising from these open systems. This applies especially to lower chlorinated Arsclors where experimental work on animals indicates that the maximum safe concentration of vapours in workrooms is in the range of 0.5 to 1.0 milligrams per cubic meter of air. In the case of more highly chlorinated Aroclors such as Aroclor 1268, the allowable limit is about 10 milligrams per cubic meter of air and accordingly, Aroclors of this type are believed to be of a much lower order of toxicity.

Where Aroclor vapours may be encountered in workrooms, local exhaust ventilation together with general workroom exhaust is recommended.

MONS 095202

Extract from M.C.C. Application Data Bulletin No. P-115

"Dermatology and Toxicology

Skin patch tests with a polyvinychloride free film plasticized with 11.5% by weight of Aroclor 1254 (about 25% based on the weight of the vinyl resin) and a similar amount of dioctyl phthalate showed that this film was not a primary irritant or a sensitizer.

Also, skin patch tests on Aroclor 1254 alone applied to gauze and placed in contact with the skin showed no primary irritancy or sensitization. Other skin patch tests using canvas coated with Aroclor 5460 and an oil modified alkyd resin, in such a manner that the Aroclor concentration in the paint film on the fabric was about 17% by weight of paint solids and the finished coated fabric contained approximately 7% by weight of Aroclor 5460 showed that this painted fabric did not produce primary irritancy or sensitization of the skin.

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MONS 095203