March 1, 1963

Mr. D. N. Griffiths
Purchasing Department
Delco-Remy Division
General Motors Corporation
Anderson, Indiana

Dear Mr. Griffiths:

I have received your card and memeographed insert entitled "Hazardous Materials" that accompanied your order for 5 gallons of Aroclor 1232. Our bulletin covering this compound will answer the questions posed in your memeographed form with the exception of the No. 1 question concerning a toxicity rating.

As you know, Aroclor 1232 is a chlorinated biphenyl chlorinated to 32% by weight. In the Sax book mentioned in your note you will find chlorinated diphenyls. Under this heading appears the toxicity rating for this compound by the author of this book.

I have examined your very brief card concerning the hazards associated with handling Aroclor 1232 and find it very difficult to fill out. I am afraid it would be better if we discussed this material and the conditions of handling which would, of course, dictate the answer to the questions on the card. Aroclor 1232 has an oral LD_{50} in rats of 4470 milligrams per kilogram which we rate slightly toxic by this route. The material has a minimum lethal dose by skin absorption in rabbits of greater than 1260 milligrams per kilogram and less than 2000 milligrams per kilogram. These data would again classify as slightly toxic by this route of administration. By evaluation of these animal data and many years experience in the use of Aroclors as a heat transfer medium, we interpret the hazard connected with handling this material as follows:

(1) The daily use of this product in this application presents no hazards when one follows the recommended precautions such as the use of the medium in a completely sealed system where there will be no leakage of liquid or the vapors when the material is heated.

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(2) The loss of fluid at a high temperature or by being sprayed onto heated surfaces (as the result of a broken line) presents a hazard to humans no more critical than with other type fluids. In either event, the vapors or decomposed products would be so irritating that workmen would not remain in the contaminated atmosphere without respirators or gas masks. In those instances where breaks have occurred, exposure to the workers long enough to shut off the system and evacuate the premises has not resulted in any ill effects.

(3) Skin contact with Aroclor 1232 at normal temperatures does not present a hazard in terms of immediate or subsequent systemic effects if normal personal hygiene practices are followed. In other words, if there is massive skin exposure, workmen should, within a reasonable time, remove contaminated clothing and bathe thoroughly.

(4) Repeated or prolonged daily skin contact should be avoided in order to prevent possible irritation to the skin and possible systemic effects. Again, normal personal hygiene should suffice as long as it is understood that workmen must not smear the liquid on the skin and allow it to remain.

These recommendations indicate that the compound is hazardous only when it is heated where sufficient of the material can vaporize to constitute an inhalation hazard. There has been no MAC (maximum allowable concentration) established for Aroclor 1232. However, Aroclor 1242 which is biphenyl chlorinated to 42% by weight chlorine has an MAC of 1 milligram per cubic meter.

If I can be of any further help, please let me know.

Sincerely,

Jack T. Garrett, Manager
Industrial Hygiene
Medical Department

JTG:df

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