July 31, 1968

Mr. Jerry Pierce
Technical Director
Precision Founders Inc.
414 Hester Street
San Leandro, California

Dear Mr. Pierce:

I have been asked to discuss with you the toxicity associated with vapor inhalation of Aroclor 1254 and Aroclor 5460.

As you know, the Aroclors are a group of chlorinated diphenyls which have been manufactured by Monsanto for a number of decades in amounts ranging into the ten's of millions of pounds.

Their vapors do possess toxicity but the exposure must be considered along with this toxicity. Thus, while we can get a softening point or a vapor pressure for various Aroclors, we cannot list toxicity as an absolute. We must always consider the type of application.

I understand that one of your uses of Aroclor 5460 will be welding wax at a joint, using a soldering iron. My impression is that this will be carried out somewhat above the softening point of Aroclor 5460. This is in the neighborhood of 98 to 105°C. At this particular temperature the vaporization rate is extremely low. In fact, it is 0.000004 g/sq. cm. an hour. It is my opinion that such an exposure will not constitute any hazard.

As far as Aroclor 1254 is concerned, this is, of course, a liquid and possesses considerably greater vaporization. I do not know at what temperature you will be using this but should vapors evolve, they must be collected.

Both these Aroclors have very good warning properties, as the odor is present long before the allowable concentration is reached.

I feel sure these Aroclors can be used in your application if good housekeeping practices and a minimum of ventilation, such as is used in most good manufacturing practices, is afforded.

Four male rats were subjected for 6 hours to the vapors generated by heating Aroclor 5460 to 300°F. The inside temperature of the chamber, where the rats were exposed, was 75.5°F. All of the animals survived the 6 hour exposure as well as the following 10 day observation period. Toxic signs, during the exposure period, were moderate lethargy and discomfort with mild weakness in 20 to 30 minutes. There was slight to mild nasal inflammation. There was no noticeable ocular irritation. The animals were in no distress when removed from the chamber. Activity and appetite were nearly normal within 24 hours.

Although this vapor data indicates no acute toxic hazard, the nature of the Aroclors in general, being chlorinated hydrocarbons, indicate that repeated daily exposure should be avoided when they are heated to elevated temperatures.

If we may be of further service, please contact us directly.

Sincerely yours,

William H. Hunt, Ph.D.
Toxicologist,
Medical Department

/sg

bcc: K. Wells