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September 2, 1965

Mr. C. V. Rose
Union Carbide Corporation
Silicones Division
East Park Drive & Woodward Avenue
Tonawanda, New York

Dear Mr. Rose:

Our Mr. Maddox has informed us that you are desirous of obtaining additional toxicological and dermatological information for Aroclors 1232 and 1248, beyond that referred to in our technical bulletin.

I will take these two preparations up separately.

Aroclor 1232 - Acute Toxicity Screening Data

Oral Toxicity - Rats, Mixed Sex - Administered undiluted The LD_{50} was 4470 (3490-5720) mg/kg. The survival time was less than 24 hours to 4 days with most deaths in two days. The toxic signs were sharply reduced appetite, lethargy, diarrhea, and increasing weakness. At autopsy, gross examination revealed renal and liver congestion as well as inflammation of the gastric mucosa. By this route of administration, this preparation was classed as slightly toxic to rats.

Skin Absorption - Female Rabbits - Applied undiluted - Intact skin. The minimal lethal dose was greater than 1260 and less than 2000 mg/kg. Survival time was 4 to 9 days. Toxic signs were reduced appetite, gradual wasting, lethargy, and weakness after several days to point of collapse. At autopsy, gross examination revealed liver discoloration and pulmonary hyperemia. By this route of administration to rabbits, the preparation was classed as mildly toxic.

Subacute Dermal Toxicity - We have no data.

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Chronic Inhalation - We have not obtained chronic inhalation data for Aroclor 1232. However, it is the opinion of our Medical Department that, if anything, it would be less toxic than Aroclor 1242. This opinion is based on the fact that the 48 per cent chlorinated material (Aroclor 1248) appears to be the most toxic of the series based on acute toxicity data and subacute dermal application.

Aroclor 1242 - Acute Toxicity Screening Data

Oral Toxicity - Rats, Mixed Sex - Administered undiluted The LD_{50} was 8650 (7610-9775) mg/kg. The survival time was from about 24 hours to 3 days with most of the deaths in 2 days. The toxic signs were diarrhea, loss of appetite, increasing weakness, dyspnea and collapse. At autopsy, macroscopic examination revealed liver and renal hyperemia. By this route of administration, the preparation was classed as practically non-toxic.

Skin Absorption - Female Rabbits - Applied undiluted - intact skin. The minimal lethal dose was greater than 794 and less than 1260 mg/kg. The survival time was 4 to 10 days. Toxic signs were poor appetite with marked weight loss, occasional squealing after several days, and collapse. At autopsy, macroscopic examination revealed a soft liver with light color and pulmonary congestion. By this route of administration, this preparation was classed as moderately toxic to female rabbits.

Subacute Dermal Toxicity - These studies were conducted on the clipped intact skin of mixed sex rabbits with the preparation being employed as a 4 per cent solution in corn oil. Three dose levels were employed; namely, 50, 75, and 100 mg/kg/day for 20 days. The body weights of those receiving 50 mg/kg compared favorably with those of the treated control group. Slight adverse effects were noted during the dosing of the 75 mg/kg group. However, the surviving male of this group regained the slight weight loss during the subsequent observation period. There were moderate adverse body weight effects in those receiving the 100 mg/kg dose.

The mean lethal dose for this preparation by this route and dosing procedure was 75 mg/kg. The toxic signs exhibited by the 100 mg/kg dose group were generalized inactivity, severe weakness, lassitude, and loss of appetite. No untoward signs were noted in the 50 mg/kg group. There

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were no significant local skin reactions noted at any of the dose levels. Findings for the test animals were comparable to those of the treated controls.

The hematologic data and results of urine analysis for the test group of animals compared well with those of the treated controls.

There were no significant gross or microscopic pathological tissue alterations noted among the test animals sacrificed at the conclusion of the study which were attributed to absorption of the test material. Findings for the test animals were comparable to those seen in the treated control animals.

Vapor Inhalation Studies - Attached is a reprint of the publication "The Toxicity of the Vapors of Aroclor 1242 and Aroclor 1254."

In addition to the above, we wish to point out that the Aroclors, when in contact with human skin, have a defatting effect similar to that of many organic solvents. Therefore, care should be exercised to avoid skin contact. Repeated or prolonged skin contact could induce a drying and cracking of the skin and the possibility of a dermatitis.

Sincerely,

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

WMH:akm

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Mr. R. G. Pastorino - St. Louis

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