DATA EVALUATION RECORD

(1) CHEMICAL: Trichlorfon

(2) TYPE OF FORMULATION: 50% Aqueous solution (Foschlor)

(3) CITATION: Staszyc, J., and Kifer, E. No date. Histophysiological studies of rat organs after exposure to Foschlor. Ann. Univ. Mariae Curie Sklodowska [Med] 73:75-79 (Translated from Polish)

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(6) TOPIC: This study has information pertinent to discipline toxicology, topic subchronic toxicity. It relates to the Proposed Guidelines data requirement 163.82-1.

(7) CONCLUSION: This study shows the dosing with Foschlor at 25 mg/kg/day for 16 days caused increases in the acid phosphatase level of liver and kidney.

CORE CLASSIFICATION: Supplementary. The reporting of methods and results was incomplete.

(8) MATERIALS AND METHODS:

Test Substance: Foschlor, manufactured by and obtained from Azoty W. Jaworznie Co., was tested. The formulation contained 50% active ingredient, O,O-dimethyl-1-hydroxy-2,2,2-dichloro-ethylphosphonate.

Test Organism: White female rats, weighing between 250 and 300 g were used in this study. Their source was not specified.

Experimental Procedure: The test animals were divided into three groups (group size not specified) and two were given an aqueous solution of Foschlor (25 mg/kg/day) by oral intubation. The control group (third group) was given 3 ml of sweetened water (the vehicle) daily by oral intubation. One test group received the Foschlor for 9 days, the other received it for 16 days.

The animals were sacrificed (time after last dose not specified) and sections of liver, pancreas, and kidney were preserved and stained with Carnoy, Genda, Bouin, and Baker stains. Tissues that were not fixed were sectioned using a cryoscopic microtone. These tissues were also

tested for the presence of nucleic acid, mucopoly saccharides, adenosine triphosphatase, 5-nucleotidase, thyamine pyrophosphatase, nonspecific esterase, glucose-6-phosphatase, and acid and alkaline phosphatase. No details about the methods of analysis for these enzymes were given.

(9) REPORTED RESULTS: The authors reported the following results for the three tissues examined:

Liver: When tests for the presence of nucleic acid, mucopoly saccharides, and intracellular enzymes were completed, the authors failed to detect any difference in the distribution and in the degree of staining when either test group was compared with the results obtained in control animals. In the group dosed for 16 days, only the activity of acid phosphatase rose. The authors also noted a "strong hydrolase" reaction in the lysosomes located along the internal sections of the bile ducts.

Kidneys: For the 16-day group, it was reported that "the reaction to acid phosphatase was characterized by a significant rise in activity in the main tubules, and in the medullary nephrons." They also observed a "marked" activity of thyamine pyrophosphatase in all the functioning urinary tubules.

Pancreas: In the pancreas, they reported that glycogen granules were located irregularly in the extra secretory

cells of the vesica for the 16-day group as compared with controls. No other changes were noted.

In their conclusions, the authors correlated the increased acid phosphatase activity of the liver and kidney as indicative of cellular metabolic disorders, which precede the development of morphological changes. They concluded that after 16 days of Foschlor administration, damage occurred to the system producing glandular cells in the examined organs.

(10) DISCUSSION: There are several problems with this study that limit its usefulness. These are primarily related to incomplete reporting of the methods and results. However, the rise in acid phosphatase noted in liver and kidney is useful in assessing the effects of trichlorfon.

(11) TECHNICAL REVIEW TIME: 4.5 hours