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OCT 12 '77	
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Imperial
Chemical
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72101 Paraquat
x Diquat
(cover)

Date

6 October 1977

Dear Hans

Thank you for your three letters all dated 27 September.

First of all for the information that FDA have concluded that PP796 is not subject to the Federal Food, Drug and Cosmetic Act. CTL believe they can answer the query which may possibly be raised about the ingestion of paraquat/emetic combination at a level just below the emetic dose (last paragraph of FDA letter).

Secondly for providing the date (15 August, 1978) Chevron have scheduled to respond to EPA concerning the PQ 2 year rat study, and a copy of the validation form. No doubt we will have ample opportunity to tick-tack in providing all the necessary information.

I will arrange for a letter to be sent to IBT, copied to you, authorising Chevron to look at the raw data of the rat two-year study on diquat. No doubt you will let us know in due course what you learn, assuming you can gain access to the laboratory.

Thank you also for your third letter with the attached copy of the Federal Register statement on valeric acid and listings of registrations of paraquat. I have forwarded a copy of the French paper "Sexuality in Pesticides" to our CTL colleagues for their edification and enlightenment. At the same time I am sending you copies of some papers on paraquat and diquat (residues and persistence in soil) presented at the 17th Swedish Weed Conference, 1976, for your information and records.

I will reply more fully to the question about the reaction of aluminium and paraquat at the end of the week after I have consulted with Dr Farrington who is away at present.

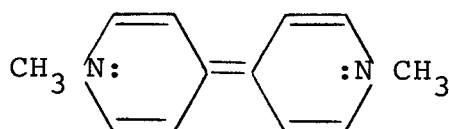
Continued ...

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mk.*



6 October 1977

However I would be surprised if the gas produced is not hydrogen. Certainly it would not be oxygen because the reaction of oxygen with paraquat radical is very fast indeed. My understanding of the chemistry (by now somewhat dim from misuse!) is that aluminium will impart some of its electrons to PQ giving paraquat radical and forming Al^{3+} . Aluminium chloride produced would hydrolyse in the water forming aluminium hydroxide (sludge) and generating hydrogen ions - hence the fall in pH. One might then expect further reaction on the aluminium by the hydrogen ions giving hydrogen gas. It is quite likely that the conditions of the experiment described would result in further reduction of PQ radical to the dihydrobipyridyl



hence the loss of paraquat cation recorded.

I will let you know if John Farrington agrees with this or has any other alternative suggestions.

Yours sincerely

Alan

A Calderbank

Encl.