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JAN 16 1980

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RECEIVED DEC 13 1979

Your ref.	Our ref	Tel ext	Date
	JS/SEW/DSO-16	3162	6 December 1979

Dear Dr Robbins

PVC DUST

In 1974 when vinyl chloride monomer (VCM) was found to give rise to angiosarcoma of the liver (ASL) in humans exposed to high concentrations of the gas over long periods, various international meetings were organised to review occupational health matters in the manufacture and use of this chemical. The principal use of VCM is of course in the manufacture of polyvinyl chloride (PVC) which is normally made as a finely divided, particulate material and which is normally considered to be "physiologically inactive" with an ACGIH hygiene standard of 10 mg/m^3, the standard for the generic classification of "nuisance particulates." At these meetings and seminars, consideration was given to PVC particulate matter but no specific risk to health was identified.

Despite this finding, Imperial Chemical Industries Ltd (ICI), a large manufacturer of VCM and PVC inter alia in the UK, decided to investigate this area further by doing in vitro and in vivo work in its Central Toxicology Laboratory (CTL) and by doing full chest X-ray examinations of PVC dust exposed employees. To do the latter, ICI went to an independent body, the National Coal Boards' Radiographic Unit (NCB) which is skilled in investigating dust induced respiratory conditions. In 1975/6, the NCB examined about 450 employees and reported no unusual findings or undue level of respiratory ailments.

Over the years 1975-8 however, some papers appeared in the scientific literature suggesting that there were problems caused by PVC dust exposure. Vague and ill-defined abnormalities were reported in chest X-rays of PVC dust exposed men and in some cases, allegations of pneumoconiosis were made. At the same time, the in vitro and in vivo animal work gave a similarly confused picture. At ICI's CTL, the in vitro work demonstrated varying levels of cytotoxicity associated with the presence of certain types of surfactant but no notable effects were observed in animals. This lack of effect was also found in the three species animal work done under the aegis of NIOSH (Dr Trent Lewis). ICI tried to have the NCB work on our employees published but the lack of a suitable control group resulted in our abandonment of this idea.

Late in 1978, ICI approached the Institute of Occupational Medicine (IOM), an independent research organisation associated with the University f Edinburgh and asked them to carry out a health and hygiene survey in ICI's oldest established PVC factory at Hillhouse in Lancashire which has b en in operation for nearly 40 years. Such a survey was done in early 1979 and on 19 November, we received the IOM's report TM/79/2 dated October 1979, a copy of which is enclosed for your attention. As you will note, the IOM have observed some radiographic abnormalities and changes in ventilatory capacity of the lungs associated with PVC dust exposure. These changes are slight and there is no evidence of substantial risk to health. In our view, the IOM have made a well-disciplined study in this field and provided evidence of changes in lung function associated with PVC dust exposure. However, we remain sceptical of their X-ray findings which of course must be further discussed and evaluated by the scientific community.

We are making the IOM report available to you as new information discovered in the course of what is clearly a continuing research programme. We are awaiting protocols from the IOM to decide how best to proceed in the next phase of this interesting study.

The IOM presented the results of these present researches on 18 September to our Hillhouse Factory employees. The IOM report has been made available to the UK government and to the relevant labour unions via the Trades Union Congress medical advisor. We have also given the information to our colleagues in the European PVC industry on 21 November and the USA to the CMA and SPI on 28 November. The report will shortly be sent also to the PVC Association in Japan. The IOM have filed the report in their Institute Library from which it may be freely obtained. The IOM are preparing a paper for publication and we hope it will be accepted by a reputable scientific journal in 1980. The r port is also available in summary and complete form to employees in ICI's PVC factories.

Especially in view of the three species animal research studies financed by NIOSH and directed by Dr Trent Lewis, we feel sure you will be interested to receive the enclosed report of some complementary research work which you may wish to transmit to and discuss with other relevant US Government agencies. Naturally, we would be glad to have your comments and observations on this work. If you would find it helpful to have face to face discussions, my colleagues and I would be very pleased to meet with you at any mutually convenient time and place. Should you or any of your specialists in this area be visiting the UK in the near future, we would be delighted to visit the IOM with you so that you can speak directly with the leaders of this research project.

Yours sincerely

J Stafford
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EC- 2274