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AR 226 – 1390

FROM:

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Polymer Products Dept.
Teflon® Division
Washington Works

863-2387 PAC Date: 9/16

TO: John Doughty

Here is revised draft
Thanks for your
comments

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E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
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PARKERSBURG, W. VA. 26101

POLYMER PRODUCTS DEPARTMENT

CC: C. G. McGlone-Tokyo
S. Hayashi-Tokyo
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September 15, 1981

MR. S. TAKADA
MITSUI FLUOROCHEMICALS CO. LTD.
MIHO 3600
SHIMIZU
SHIZUOKA PREFECTURE
JAPAN

PROPOSED EMPLOYEE BLOOD SAMPLING PROGRAM

We would like to obtain blood samples from a representative group of employees at Shimizu Works to determine if there is a significant difference between C-8 APFC dispersing agent values at Shimizu and Washington Works. About twelve samples should be enough. They should include several people who work around the TEFLON® fine powder dryers because we believe that they are a major source of exposure. Your plant has batch dryers whereas Dordrecht and Washington Works have continuous dryers. We will analyze the samples at Du Pont's Experimental Station and return the results to you so that they can be given to the employees as confidential medical information.

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BACKGROUND

We have used C-8 at Washington Works for more than 25 years and in earlier years it was handled less carefully than in recent years. Limited data indicates that C-8 is persistent in the human body and we have established a program to monitor selected employees regularly. We have established engineering controls to reduce potential exposure to C-8 and required the use of protective equipment for some jobs.

Significant additional control effort began in 1979 after 3M Company(our supplier of C-8 APFC dispersing agent) advised us of accumulation of organic fluorine in the blood of some of their workers. In March, 1981, 3M Company advised us that tests indicated that oral doses of C-8 caused birth defects in rats. As a result, we transferred all females of child bearing potential from jobs with significant potential for C-8 exposure and increased our efforts to prevent exposure.

Du Pont's Haskell Laboratory is making tests to determine if exposure by inhalation of C-8 causes birth defects and also is making tests with oral doses similar to the 3M tests. We expect results of these tests in about a month. 3M Company is repeating their original study and we expect to receive some information in October, 1981.

Samples of blood taken at Washington Works showed that polymerization operators had an average of about 5 ppm organic fluorine and the maximum value was about 29 ppm. Monomer operators and professionals generally had much lower values. We sampled some employees in the TEFLON® Division at Dordrecht Works in May, 1981, and we found that the C-8 content of their blood samples was very similar to results at Washington Works. There appears to be no background level of naturally occurring C-8 in blood samples. A thorough study of the employees health records showed no conclusive evidence of effects resulting from exposure to C-8.

We have asked Haskell Laboratory to establish an acceptable level for C-8 in workers blood that will be the basis for managing our blood monitoring programs.

We will be glad to answer any questions and provide more information that you may need.

Paul Thistleton
Senior Engineer
Technical Department

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Mark type only employee number not name attached

PERSONAL & CONFIDENTIAL

C-8 BLOOD SAMPLING RESULTS

Births and Pregnancies

Employee Number	Current PPM C-8 in Blood (April 1981)	Status
	0.45	Normal child - born June 1980. Transferred out of Fluorocarbons 4/79.
	0.28	Normal child - born April 1981.
	0.078	Normal child - born April 1981. Umbilical cord blood 0.055 ppm.
	1.5	~~Five months pregnant~~. On pregnancy leave
	0.013	~~Five months pregnant~~. Normal child - born August 1981
	2.5*	Child - 2 plus years. Unconfirmed eye and tear duct defect.
	0.048	Child - 4 months. One nostril and eye defect. Babies blood 0.012PPM
	2.007	Normal child - born July 1981

*Current blood level - in fluorocarbons area only one month before pregnancy.

RDL:ldr

REDACTED