

AR 226 - 1460



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE 19898

PLASTIC PRODUCTS AND RESINS DEPARTMENT

CC: J. R. MUNDA
B. C. MC KUSICK - CR&D
B. W. KARRH - ER
P. M. NORLING - ADMIN.
S. N. BOYD - CD&P
A. A. WRIGHT

PERSONAL & CONFIDENTIAL

July 25, 1979

RECEIVED
JUL 26 1979
PRICE W. KARRH, M.D.

TO: R. L. RICHARDS

FROM: J. W. RAINES *JWR*

ORGANIC FLUOROCOMPOUNDS IN BLOOD

Published Article

Organic Fluorocompounds in Human Plasma: Prevalence and Characterization, by W. S. Guy, D. R. Traves, and W. S. Brey, Jr., was published by the American Chemical Society in 1976. They reported organic fluorine in blood plasma obtained from blood banks in 5 U.S. cities, determined by subtracting inorganic fluorine from total fluorine.

3M Company

May 30, 1978, informed Du Pont of elevated organic fluorine (1-71 ppm) in blood of employees exposed to long chain perfluoro surfactants such as the ammonium salt of perfluoro-octanoic acid (FC-143) which they supply to Du Pont. Control group was less than 1 ppm.

July 20, 1979, advised Du Pont:

- No adverse health effects.
- Decay rate after removal from exposure relatively slow (71 ppm - 47 ppm in one year).
- Fluorine in urine also decayed slowly (484 micrograms per 24 hours to 220 micrograms per 24 hours in 10 months).
- FC-143 not adsorbed through skin of rabbits.
- University of Minnesota professor is doing an epidemiology study on 4,000 - 5,000 employees who worked at 3M's oldest and biggest fluorochemical plant.

EID107198

THERE'S A WORLD OF THINGS WE ARE DOING SOMETHING ABOUT

000162

RL001779

- Eight Chinese peasants had significantly lower (0.004 - 0.017 ppm) blood levels than general U.S. population (0.002 - 0.13 ppm).

CD&P

Analyzed blood of 55 employees at Chambers Works. Average .15 ppm, range 0 - .37 ppm. Discontinued blood sampling. Exposure is not to same family of chemicals as that at Washington Works (WW) and 3M.

PP&R

- Analyzed blood of 8 employees potentially exposed to C-8 (FC-143) at WW.

2 Laboratorians	.4 - .5 ppm
2 FEP Polymerization Operators	2.2 - 3.5 ppm
4 TFE Dispersion Polymerization Operators	9.5 - 21.1 ppm

- No adverse health effects attributable to C-8.
- Decided not to report to EPA under 8(e) of TOSCA because fluorine in blood per se was disclosed in 1976 article and because no adverse health effect is known, therefore, no substantial risk.

Program

- Obtain raw medical data from WW employees and study by Corporate Medical to confirm that liver function and other medical analyses are normal.
- Identify personnel in all jobs with potential exposure to C-8 for the past 10 years at WW.
- Analyze blood samples (Jackson Lab will do) of selected additional employees at WW to:
 - Check all employees currently exposed to C-8.
 - Verify that fluorine levels in blood are due to C-8 exposure rather than other fluoro-compounds.
 - Define the decay rate (confirm that found by 3M).

EID107199

000163

RL001780

- (Cont'd)
 - Communicate results of latest tests to WW employees before additional blood samples are taken.
- Defer blood sampling at Dordrecht until additional results are in from WW.
- Textile Fibers will decide by August 3 about sampling blood of employees at Spruance where they produce fibers from poly TFE dispersion containing .3% C-8.

JWR:ldb

EID107200

000164

RL001781