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AIRBORNE C-8 CONCENTRATION AND ORGANIC FLUORINE
IN BLOOD SAMPLES

The attached table was prepared to answer a question by I. A. Lundgaard which was relayed by Lance Percival 4/3/81. He asked if there was a correlation between airborne C-8 and organic fluorine in blood. There is not a direct correlation as with some materials where an exposure one day may appear directly or as a metabolite in the urine the next day. C-8 accumulates in the blood and is not readily eliminated from the body. Therefore, organic fluorine in blood samples is usually the result of exposure over an extended period less elimination which may vary between individuals depending on differences in body chemistry.

The data for monomer operators illustrates the persistence of C-8. Seven long-service monomer operators who may have been exposed to airborne C-8 had an average organic fluorine level of 0.35 ppm in their blood which is the same as the background level for organic fluorine given in the answer to question 17 ("... organic fluoride blood levels ranged up to 0.4 ppm."). We do not know if this was naturally occurring organic fluorine or C-8. Three monomer operators who had about 2 years monomer service preceded by 15 years fine powder service had an average organic fluorine level of 5.9 ppm in their blood. This must be a carryover from exposure in their fine powder assignments. The level is similar to current fine powder operators who had organic fluorine in their blood samples ranging from 0.2 to 21.7 ppm.

Attachment

PT/nsw

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TEFLON® DIVISIONS

AIRBORNE C-8 CONCENTRATION AND ORGANIC FLUORINE IN BLOOD SAMPLES

<u>ORGANIC FLUORINE IN BLOOD SAMPLES</u> (2)					
<u>AREA</u>	<u>AREA SAMPLES (1) AVERAGE C-8 mpb</u>	<u>NUMBER SAMPLED</u>	<u>AVERAGE YEARS IN TEFLON® (5)</u>	<u>RANGE ppm</u>	<u>AVERAGE ppm</u>
MONOMER	0.4	(7 (3)	24	0.1 - 0.5	0.35
		(3 (4)	17	5.3 - 6.7	5.9
FINE POWDER					
Polymerization	0.7	18	10	0.2 - 21.7	7.0
Finishing	1.4	14	7	0.5 - 5.0	2.4
FEP					
Polymerization	0.7	13	21	0.9 - 5.0	2.8

(1) Taken between October, 1979 and March, 1980.

(2) Taken in August, 1979.

(3) Long service monomer operators.

(4) Short service monomer operators (1 - 2 years); previously worked 15 - 16 years in fine powder area.

(5) Note - these are total years in Teflon®. Many people had several assignments with different C-8 exposure potential.

PT
4/7/81

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