

Subject: Meeting Minutes

June 8, 1978

THOSE PRESENT:

R. L. AHLNESS	223-6SE
R. J. DAVIS	220-12E
D. A. FISCHER	224-4SW
C. W. HANSON	223-6SE
L. C. KROGH	223-6SE
J. D. LAZERTE	236-1
J. E. LONG	220-2E
L. J. MAGILL	223-6SE
W. H. PEARLSON	223-6SE
J. A. PENDERGRASS	220-2E
R. A. PROKOP	236-3B
T. J. SCHEUERMAN	220-12E
F. A. UBEL	220-2E

The above persons met on May 22, 1978 to review recent information on fluorochemicals in blood and to determine if fluorochemicals in blood represent a substantial risk under the Toxic Substances Control Act.

J. E. Long reviewed incomplete results from 90 day animal studies on rats and monkeys using FC-95, FM-3422 and FC-143. The purpose of this work is to obtain data in order to design a two year toxicology and carcinogenicity study. Final data on the 90 day rat study is due in about two months. Final data from the monkey study will be available in three to four months.

The toxicity of FC-95, FM-3422 and FC-143 in rats and monkeys was reviewed. The order of toxicity in rats appears to be:

FC-95 > FM-3422 > FC-143

Studies on monkeys using FC-95, FM-3422 and FC-143 are largely incomplete. The order of toxicity appears to be:

FC-95 > FC-143 > FM-3422

One monkey fed FC-95 at the 1.5 mg/kg level has died. Also, one monkey fed FM-3422 at the 30 mg/kg level has died.

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R. J. DAVIS

Exhibit
1177State of Minnesota v. 3M Co.,
Court File No. 27-CV-10-28862

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A question of the role of potassium ion in FC-95 again arose. It is possible that potassium ion is contributing to FC-95 toxicity. An exaggerated acute toxicity study on the ammonium or sodium salt of $C_8F_{17}SO_3H$ is needed and should be carried out as quickly as possible.

R. A. Prokop reviewed the levels of fluorochemicals found in serum and liver of the animals fed FC-143 and FM-3422 during the 90 day animal studies. Male rats fed FC-143 in doses from 10 to 1000 ppm had $C_7F_{15}CO_2^-$ levels of from 21 to 49 ppm in their serum and 8 to 22 ppm in their livers. Female rats fed the same dosage had approximately 100 times less FC-143 in their blood and liver. In contrast, male and female rats fed FM-3422 at levels from 100 to 1000 ppm had less than 0.3 ppm in their serum and less than 3 ppm in their livers. However, the total fluoride content of serum and liver was high (up to 2200 ppm) and $C_8F_{17}SO_3^-$ was identified in the serum of one rat which was fed FM-3422.

F. A. Ubel discussed the organic fluorine levels in blood of Chemolite workers who are exposed to fluorochemicals. Recent samplings indicate that the organic fluorine levels are about the same as those previously found except for one employee. This person's level has increased from 40.5 to 71 ppm. Plans call for transferring this person to a position which does not involve fluorochemical exposure. If this employee consents, his blood and urine will be sampled weekly to determine how rapidly the organic fluorine level is decreasing.

New personnel will be involved in the packaging of FC-143 at Chemolite. The level of FC-143 in their blood will be monitored to determine if methods designed to reduce employee exposure to FC-143 are effective. This will have high analytical priority.

X-rays have been taken of Chemolite employees who have high levels of organically bound fluorine in their blood. Results show no indication of fluorosis.

Blood samples from Decatur employees exposed to fluorochemicals will be taken in June. Levels of organic fluorine and FC-95 in serum will be measured.

Epidemiologists from the School of Public Health at the University of Minnesota have been engaged to determine the feasibility of an epidemiology study on Chemolite workers who work with chemicals. The study will cover persons working at Chemolite from 1948 to present and will attempt to find if it is possible to determine whether there are any negative health effects which result from exposure to fluorochemicals. The feasibility study will begin May 25, 1978 and require approximately two months for completion.

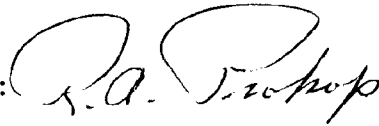
R. H. Ahlness reviewed the steps which are being taken to reduce Chemolite employee exposure to FC-143. Plate and frame (open) filtration has been changed to closed system filtration using a Bird-Young filter. Oven drying has been replaced by ribbon blender drying and packaging is now done directly from a pulverizer attached to the ribbon blender. Industrial Hygiene measurements of FC-143 levels in the packaging area show levels of 2.12 mg/m^3 compared to the 9.28 mg/m^3 value found before these changes were made. Further improvements should be possible. In addition, employees packaging FC-143 must now wear air fed hoods.

Changes in drying, grinding and packaging procedures, in order to reduce employee exposure to FC-95, FC-98, and FC-128, are also being made.

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After discussion, it was decided that 3M employees should be given information on fluorochemicals in blood sometime this summer. L. C. Krogh and C. W. Hanson will prepare a schedule for informing employees. C. W. Hanson will decide on the mechanism of presenting information to Chemolite employees.

Submitted by:



R. A. Prokop

RAP:df

920-12E
R. J. Davis