



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM **SEP 29 1982**

TO: John Lee, PM #31
 DB/Registration Division (TS-767)

THRU: Robert B. Jaeger, Section Head *Dir WAPB 9/27/82*
 Review Section #1
 Toxicology Branch/HED (TS-769)

SUBJECT: Dow Corning 5700 Antimicrobial Agent
 EPA Reg. No. 34292-1
 Leaching study on 100% cotton
 CASWELL No. 892-B

Recommendations and Conclusions:

1. Toxicology Branch concludes that the data presented from the refined testing methods indicates that DC 5700 does not leach from 100% cotton at pH 4.0 under extreme conditons.

2. Toxicology Branch has no objection to the application of DC 5700 as previously requested on 100% cotton or cotton containing articles with the exception of articles to be worn internally (FDA jurisdiction).

Review Study:

Durability of Dow Corning 5700 Antimicrobial Agent on Textiles. Dated July 26, 1982. Submitted Aug. 12, 1982 for review.

Test Material:

100% cotton treated with DC 5700 as a 0.74% solution of hot (65° C) tap water.

Procedure:

After a 15 second exposure the cotton samples 6"x6" (3.2-3.4 g) were rinsed in tap water and dried at 135° C for 1/2 hr. in a hot air oven.

One gram samples were placed in 60 ml of synthetic sweat at pH 4 and shaken at 40-50 oscillations/min. for 24 hr. at 37° C.

A sweat sample of a control and from the treated cotton was then passed through a 1 micron membrane filter, and analyzed for quaternary ammonium. The remaining filtrate from the 1 micron filtering was further filtered with a 0.1 micron membrane, that final filtrate was also analyzed for quaternary ammonium.

Electron micrographs were made of the micron filter membranes to determine non filtered material.

Results:

<u>Sample Description</u>	<u>pH of Extract</u>	<u>Filter</u>	<u>Amount of Active Ingredient Found in the Extract</u>
Control	4	1.0u	N.D. <50 ppb
Control	4	1.0 + 0.1u	N.D. <50 ppb
Treated	4	1.0u	660 ppb
Treated	4	1.0 + 0.1u	Tr

N.D. = Not Detected

Tr = Trace Amount at 50 ppb or Less

Electron Micrographs:

1. For control sweat: no differences are noted at 0.1 and 1 micron filtrations.

2. For treated sweat: small fibrils of presumably cotton are seen with globular adherences after 0.1 micron filtration.

Conclusion:

After filtering at 0.1 micron, in all cases no more than 50 ppb of quaternary compound was found.

However, before the 0.1 micron filtration but after the 1.0 microns filtration 660 ppb of compound were found, indicating that treated fibrils are captured on the 0.1 micron filter prior to analysis. Only trace amounts found after analyses.

Core:

Minimum Data

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9/27/82
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69/29/82

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