LOG OF TELEPHONE CALL
DIRECTORATE FOR ENGINEERING SCIENCES

QS

X 2/21/95

SUBJECT: Fabric Flammability

DATE OF CALL: January 25, 1995

LOG ENTRY SOURCE: Linda Fansler, ESME

COMMISSION REPRESENTATIVE: Linda Fansler, ESME

NON-COMMISSION REPRESENTATIVE: Dr. John Michener
Senior Scientist
Milliken Research Corp.
Spartanburg, SC
803-574-9804

SUMMARY OF CONVERSATION:

Dr. Michener was contacted to discuss some fabric flammability issues posed since the Commission briefing on Children's Sleepwear. Dr. Michener has considerable experience in the area of fabric flammability. The questions asked and his responses follow.

1. Would any cotton/polyester blend fabrics including those not currently commercially available, pass the Children's Sleepwear Standards? For example would a theoretical 1% cotton, 99% polyester blend fabric pass?

Dr. Michener stated that it would depend on how the blend was achieved. If every yarn contained 1% cotton, he did not know what would happen. If however, there were 1 cotton yarn and 99 polyester yarns, he could visualize that fabric passing.

Dr. Michener further stated that once exposed to a flame, polyester wants to melt and pull away from the flame. When cotton is present, it holds the polyester in place with continued exposure to the flame. In commercially available cotton/polyester blends there is enough cotton present to keep the polyester involved in the fire. Dr. Michener stated that "we know that 35% cotton is too much".

Dr. Michener stated that there are reasons for combinations of fibers and percentages of yarns found in commercially available blends; fabric manufacturers are trying to achieve specific goals (i.e. softness, comfort etc.). He stated that consumers would not notice the presence of less than 10% cotton in a cotton/polyester blend.

2. Would a heavier weight, tightly woven untreated cotton fabric pass the Children's Sleepwear Standards? This fabric may not necessarily appropriate for use in children's sleepwear or other wearing apparel.

Dr. Michener stated that no cotton fabrics acceptable for use as apparel will ignite in 3 seconds. (Note: The Children's Sleepwear Standards have a 3 second ignition exposure.) He stated however, that a very heavy weight cotton fabric such as a canvas may not ignite in 3 seconds and would therefore pass. If this fabric did ignite, it would not burn very rapidly but would burn the entire length.

3. The Canadian regulations require a flame spread greater than 7 seconds for their exempted tightfitting sleepwear garments. In the United States the proposed exempted garments would have to meet the requirements of Part 1610 Standard for the Flammability of Clothing Textiles, which requires a flame spread greater than 3.5 to 4 seconds. Does the additional 3 seconds in the Canadian regulations add additional safety?

Dr. Michener stated that "in his opinion the additional 3 seconds won't make that much difference".

Dr. Michener stated that he appreciates the struggle the Commissioners must be going through in deciding this issue. He is willing to meet with the Commissioners to further discuss these and any other issues the Commissioners may have.

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