# MEETING LOG
# UPHOLSTERED FURNITURE



**Meeting Between:** CPSC staff and representatives of the Fire Retardant Chemicals Association (FRCA)

**Date of Meeting:** March 23-24, 1998

**Site of Meeting:** Swissotel Atlanta, Atlanta, GA

**Meeting Topic:** FRCA Conference on Fire Safety and Technology

**Log Entry By:** Dale Ray, Project Mgr., Upholstered Furniture

**Participants:** FRCA: Russell Kidder, Executive VP, and about 100 representatives of various FRCA member firms

Other: Representatives of NASFM, NIST, NCC, other industry groups (FR chemical users)

CPSC: Dale Ray, EC

**Summary:**

FRCA's Spring 1998 program, "Fire Safety and Technology: Turmoil, Progress, Opportunities 1973-1998-2000+," marking FRCA's 25th anniversary, featured FRCA market committee reports (one of which deals with upholstered furniture) and a number of technical presentations on issues related to the progress of fire retardant (FR) chemicals and fire safety. Several of the presenters offered their positions on CPSC's upholstered furniture activities. A copy of the program is attached.

Richard Rose, Great Lakes Chemical Corp., Chairman of the upholstered furniture committee, reported the committee's progress in developing information for CPSC on FR chemical uses and toxicity/exposure/bioavailability. CPSC staff requested this information at the December 3, 1997 meeting with FRCA. This committee is preparing, for selected widely used FR compound groups, toxicity "profiles" and an applications "grid" describing uses, incorporation methods and potential exposure scenarios. Mr. Rose also reiterated the committee's desire to run tests using CPSC's test method and apparatus (note: an agreement to allow outside parties to use CPSC's equipment for such tests is in preparation). Mr. Rose also described the October 1997 CPSC staff briefing package, and outlined the committee's evolving position of seeking to promote a filling materials requirement (that would likely result in the use of FR foams) without substantially delaying CPSC's standards development. The committee also held a separate, closed meeting (not attended by CPSC) to discuss its position on filling materials.

A series of technical presentations followed the committee reports. Mr. Joseph Green, an industry consultant, described early uses of FR chemicals in the 1960's and 1970's, including polybrominated biphenyls--characterized as an excellent FR but also a reproductive toxicant that became involved in a feedstock incident referred to in the media as "the poisoning of Michigan." He also discussed TRIS (TBPP), an effective textile FR that was identified by CPSC as a potential human carcinogen and withdrawn from the market. Mr. Green also discussed the growth in FR use worldwide during the 1980's, especially decabromodiphenyloxide (DBDPO) in circuit boards and other electronic applications. He stated that pentabromodiphenyloxide was gradually replacing chlorophosphates in polyurethane foams, owing to the lower propensity of PBDPO to scorch in flammability testing.

Mr. Russell Kidder, Executive Vice President of FRCA, discussed the organization's 25 years of cooperation with CPSC in the fire safety area. He pledged the association's continued support for the agency's activities to reduce upholstered furniture, bedding and other fire losses, and stated FRCA's intention to testify at the upcoming CPSC public hearing and to provide information on FR chemicals to CPSC by April 21, 1998.

Dr. Richard Gann, NIST, described the results of a 1980's NBS/FRCA research project on the combustion toxicity of FR vs. non-FR products (note: CPSC staff considered this report in the toxicity review contained in the October 1997 briefing package). This study found that, relative to non-FR materials, FR materials had comparable smoke toxicity, reduced ignition and burning rates, less heat and smoke, and allowed greater escape time for building occupants. The study concluded that FR products presented no greater combustion toxicity hazard than non-FR products.

Dr. Marcia Hardy, Albemarle Corp., discussed the benefits of halogenated FR use in products, including plastics and various textiles. These brominated and chlorinated FR's are the primary candidates for use in upholstery fabrics to meet a small open flame ignition standard for furniture. She also discussed the potential adverse impact on fire safety of "ecolabels" and "green" voluntary standards, especially in Europe, that could reduce the use of FR's in products such as television cabinets and components of other heat-producing items.

Mr. Ron Dombrowski, Albright & Wilson Americas, described improvements that have been achieved in FR efficiency (e.g., burn rates in MVSS 302 tests of automotive upholstery and other interior materials) while reducing the weight of FR's in fabric backcoatings, and without increasing total costs per square yard, by using more liquid FR's; these are higher in cost but also higher yield per square yard of treated material. In some fabrics, the weight of the FR backcoating may comprise up to 70% of the total finished fabric weight. These liquid FR's are suitable for use in some, but not all, fabrics, depending on

weave, weight and fiber content: for example, solid FR's are more suitable than liquids for open weave fabrics; liquid and solid FR's may both be suitable for most synthetics. Mr. Dombrowski noted that there may be no appropriate FR backcoating for certain lightweight cotton prints.

Dr. Phillip Wakelyn, National Cotton Council, discussed the use of FR treatments for cotton fabrics, noting differences between non-durable treatments (e.g., boric acid) and durable treatments (e.g., tetrakis, Pyrovatex). He noted that Pyrovatex, which is typically used in mid- to heavy-weight fabrics, could be used in backcoatings, although it is not currently. He also discussed the relation between cigarette and open flame ignition propensity, and indicated that some open flame FR treatments could worsen smolder resistance; he noted that NCC was developing some additional information on this subject.

Dr. Gordon Damant, Inter City Testing, discussed CPSC's standards development activities, and expressed his view that action to address furniture flammability hazards was warranted and should be expedited. He stated that combustion toxicity was a relatively minor concern, and that most FR treatments would pose no chemical hazards to consumers if used in furniture (California furniture contains FR foam to comply with TB-117, the regulation affecting all furniture sold in that state). He discussed the potential need to address the flammability of interior filling materials (the CPSC staff draft standard would not require the use of FR fillings); he also discussed effects on flammability of wetting, soiling and cleaning upholstery fabrics, and stressed the need for redundant safety measures to ensure adequate fire performance over the products' useful life.

Dr. Phil Stricklen, Amoco Fabrics & Fibers Co., described various uses of polypropylene in upholstery and other fabrics. He noted that FR polypropylene is widely used in automotive seating, floor coverings and other interior panels. Polypropylene fabrics can be made with inherently FR fibers, and can also be FR backcoated. In the company's flammability tests of draperies, using the NFPA 701 test method, FR polypropylene fabrics passed both with and without FR (acrylic) backcoating; however, in the company's upholstered furniture testing, using the BS 5852 test method, FR polypropylene with FR (latex) backcoating passed while FR polypropylene without the backcoating did not. Dr. Stricklen recommended the use of latex backcoatings generally for polypropylene upholstered furniture fabrics.

Attachment (conference program)

FINAL PROGRAM

**FIRE SAFETY AND TECHNOLOGY * TURMOIL–PROGRESS–OPPORTUNITIES * 1973–1998–2000+**

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The Fire Retardant Chemicals Association

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March 22–25, 1998

SWISSÔTEL ATLANTA
ATLANTA, GEORGIA

# FIRE SAFETY AND TECHNOLOGY * TURMOIL-

## MONDAY MORNING
MARCH 23, 1998

7:30 A.M.–10:30 A.M.

*WELCOMING REMARKS:*

FRCA PRESIDENT
Joseph M. Lesniewski

*FIRE TECHNOLOGY—REGULATIONS—FRCA—1973–1998–2000+*

MODERATOR—J. Tramontana
*Velsicol*

**FRCA MARKET COMMITTEES—STATUS, PROGRESS, & FUTURE ACTIVITIES**
M. Keogh
*Union Carbide*
J. Bryner
*Solutia*
R. Rose
*Great Lakes Chemical*

**FIRE TECHNOLOGY—PROGRESS AND OPPORTUNITIES**
J. Green
*Consultant*

**FIRE SAFETY REGULATIONS AND STANDARDS 1973–1998**
L. O. Raether
*Consultant*

**THE EVOLUTION OF THE FIRE RETARDANT CHEMICALS ASSOCIATION 1973–1998–2000+**
R. C. Kidder
*Fire Retardant Chemicals Association*

## MONDAY, MARCH 23, 1998
12:00 NOON LUNCHEON SPEAKER

## MONDAY AFTERNOON
MARCH 23, 1998

1:30 P.M.–5:00 P.M.

*TEST METHOD DEVELOPMENTS AFFECTING FIRE SAFETY—1973–1998–2000+*

MODERATOR—C. Yacomeni
*Great Lakes Chemical*

**UNDERWRITERS LABORATORIES, ACTIVITIES AND STANDARDS AFFECTING FIRE SAFETY OF ELECTRONICS AND HOME APPLIANCES**
G. Fechtmann
*Underwriters Laboratories*

**FACTORY MUTUAL, ACTIVITIES AFFECTING FIRE SAFETY 1973–1998–2000+**
A. Tewarson
*Factory Mutual*

**NIST/NBS FIRE RESEARCH AND FRCA: 25 YEARS OF PROGRESS**
R. Gann
*Building & Fire Research Laboratory, National Institute of Standards and Technology*

**ECOLABELS AND THEIR EFFECT ON FIRE SAFETY**
M. Hardy
*BFRIP, Albemarle*

**BUILDING CODES AND STANDARDS AND THEIR EFFECT ON FIRE SAFETY**
R. Strength
*Product Safety Management*

# -PROGRESS–OPPORTUNITIES * 1973–1998–2000+

## TUESDAY MORNING
MARCH 24, 1998

7:30 A.M.–11:45 A.M.

*FIRE SAFETY TECHNOLOGIES IN THE TEXTILE INDUSTRIES*

MODERATOR—K. Shen
*US Borax*

**TEXTILE COATINGS, THINKING OUTSIDE THE BOX**
R. Dombrowski
*Albright & Wilson Americas*

**OVERVIEW OF COTTON AND FLAMMABILITY**
P. J. Wakelyn
*National Cotton Council*
W. Rearick, J. Turner
*Cotton Incorporated*

**FIRE SAFETY REQUIREMENTS AND ACTIVITIES OF UPHOLSTERED FURNITURE**
G. Damant
*Inter-City Testing and Consulting*

**FLAME RETARDING POLYPROPYLENE FOR TEXTILE APPLICATIONS**
P. M. Stricklen
*Amoco Fabrics and Fibers Company*

## WEDNESDAY MORNING
MARCH 25, 1998

8:00 A.M.–11:00 A.M.

*NEW DEVELOPMENTS FOR CONSIDERATION IN FIRE RETARDING PLASTICS*

MODERATOR—E. Papazoglou
*FMC*

**CHLORINATED POLYETHYLENE FOR IR-ABS**
S. Niss, M. Berard
*DuPont Dow Elastomers*

**THE USE OF BORATES AS FIRE RETARDANT SYNERGISTS IN TALC-FILLED POLYPROPYLENE**
D. Schubert
*US Borax*

**FIRE RETARDANT ACTIVITY: QUANTITATIVE COMPARISON OF ADDITIVES**
M. Hirschler
*GBH International*

**ENGINEERING FLAME RETARDANT PLASTICS: OPTIONS AND ISSUES**
K. Sienkowski
*M. A. Hanna Engineered Materials*