



United States  
**CONSUMER PRODUCT SAFETY COMMISSION**  
 Washington, D.C. 20207

CPSA 6 (b)(1) Cleared  
 8/10/98  
 No Mfrs/PrvtLbrs of  
 Products Identified  
 Excepted *[Signature]*  
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 Comments Processed

**MEMORANDUM**

**DATE:** August 10, 1998

**TO:** Michael Babich/EHHS

**Through:** Sadye E. Dunn, Secretary

**FROM:** Martha Kosh  
 Records and Reference Assistant

**SUBJECT:** Flame Retardant Chemicals That May Be Suitable for  
 Use in Upholstered Furniture, FR Vol. 63, No. 71,  
 pp. 18183, April 14, 1998

ATTACHED ARE ADDITIONAL COMMENTS ON THE CF98-1

<u>COMMENT</u>	<u>DATE</u>	<u>SIGNED BY</u>	<u>AFFILIATION</u>
CF98-1-13	6/25/98	Joyce B. Jones President	American Society of Interior Designers 608 Massachusetts Ave., NE Washington, DC 20002
CF98-1-14	7/15/98	Lois Scheel	1248 Cheney Creek Rd. Grants Pass, OR 97527
CF98-1-15	7/15/98	Carl D'Ruiz Exe Director	Ciba Specialty Chemicals Corporation 4090 Premier Drive P.O. Box 2444 High Point, NC 27261
CF98-1-16	7/21/98	B. Kerstetter President	Everfast, Inc. Walnut Road Business Park 203 Gale Lane Kennett Square, PA 19348
CF98-1-17	7/30/98	Richard Taffet E. Jaffee Attys for the Coalition of Converters of Decorative Fabrics	Golenbock, Eiseman, Assor & Bell 437 Madison Ave. New York, NY 10022

Flame Retardant Chemicals That May Be Suitable for Use in Upholstered Furniture, FR Vol. 63, No. 71, pp. 18183, April 14, 1998

CF98-1-18	7/30/98	Richard Taffet E. Jaffee Attys for the Decorative Fabrics Assoc.	Goenbock, Eisen, Assor & Bell 437 Madison Ave. New York, NY 10022
CF98-1-19	8/03/98	R. Driscoll Technical Services Mgr.	BIFMA International 2680 Horizon Dr., SE Suite A-1 Grand Rapids, MI 49546
CF98-1-20	8/03/98	M. McNamara Atty	Upholstered Furniture Action Council 5810 Jane Way Alexandria, VA 22310
CF98-1-21	8/03/98	Tommy Horton Exe. Secretary	National Cotton Batting Institute P.O. Box 12887 Memphis, TN 38182
CF98-1-22	8/03/98	Patty Adair Asst. Director Textile Products and Standards	American Textile Manufacturers Institute 1130 Connecticut Ave, NW Suite 1200 Washington, DC 20036

# ASID

book  
7/13/98  
DJ

June 25, 1998

## OFFICERS

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Chairwoman Ann Brown  
Consumer Product Safety Commission  
Washington DC 20207

Dear Chairwoman Brown:

It has recently come to my attention that the Consumer Product Safety Commission is considering a staff proposal that if adopted, would require flame retardant chemicals to be applied to all upholstery fabrics used on residential furniture sold in the United States. The American Society of Interior Designers recognizes the tragic consequences of young children playing with small open flames such as lighters and matches, or the careless use of tobacco products by adults—the major causes of upholstered furniture fires—and supports appropriate government efforts (such as public service campaigns), to reduce these fires.

ASID is opposed to government mandates requiring the application of flame retardant chemicals to fabrics used on residential upholstered furniture for the following reasons:

- Potential health risk to humans from long-term exposure to flame retardant chemicals on end-use products.
- Added cost to consumers and negative economic impact added cost will have on multiple industries including upholstery fabric and furniture manufacturers, wholesalers, retailers and small businesses including interior design firms.
- Consumer rejection of treated products due to increased stiffness and lower aesthetic appeal of treated products. Obviously, if consumers do not like the products, they will not purchase them, thus adding to the negative economic impact of the regulation.
- Voluntary standards for flame resistant upholstered furniture already exists through the Upholstered Furniture Action Council (UFAC). Perhaps the government should assist UFAC with a public service campaign to educate consumers about the benefits of purchasing UFAC products.

Other issues which should be addressed include:

- What to do with existing (non-treated) products?
- What impact will increased application of flame retardant chemicals have on the environment?

- What is the potential for increased fires due to consumers covering unattractive and uncomfortable flame retardant treated furniture with more comfortable, appealing and potentially *more* flammable textiles found in the home?

Clearly this is a complicated issue which at minimum, requires further review. Please take the issues I have raised into consideration, and I request that they be entered into the public record/public comment.

In closing, I would add that proper education of young children about the dangers of “playing with matches” and increased awareness about the benefits of smoke detection devices are the most appropriate ways to cut down on upholstered furniture fires—not requiring toxic chemicals to be applied at great risk to the public health and creating economic problems for small business entrepreneurs like myself.

Thank you for your attention to this matter. Please direct any correspondence regarding this issue to Chris Ingram, Director of Government & Public Affairs, ASID.

Sincerely,

  
Joyce Burke Jones, FASID  
President

cc: Chris Ingram

**ASID**

**July 15, 1998**



RECEIVED BY THE SECRETARY  
JUL 15 1998

6:30 PM 27 P 3-16

ATTENTION: Sadye E. Dunn, Secretary

I know that I am too late for your public hearing on May 5-7, 1998, but I would like to send you the following information as I believe it is extremely important. I understand that a proposal by the U.S. Government could lead to increased use of fire retardants, including antimony, on upholstered furniture fabrics, including crib mattresses.

**CRIB DEATH:** In an article for the *AP Science Writer*, 6/96, Paul Recer writes that infant deaths have plummeted 30 percent in two years because more infants are sleeping flat on their backs now than face down. Why is this so? Before World War II mothers were told that babies slept better face down, and no infant deaths caused by this sleeping position were recorded. It was thought then that babies were safer sleeping on their stomachs than on their backs because if they vomited in their sleep, the mucous would not roll back in their throat and drown them. If babies didn't die sleeping on their stomachs then, why would they do so now? Doesn't this strike you as being a little strange?

Bop Woffinden, writing for *The Guardian* (liberal), London, April 1, 1995: "PVC mattress coverings were introduced in 1948-49, and fire retardants were first put into them in 1951. From 1953 onward, the deaths appeared to rise steadily until they significantly increased in the mid-1980s. Under government pressure to enhance fire safety, all companies had put increased amounts of fire retardants into furnishing materials, crib mattresses included.

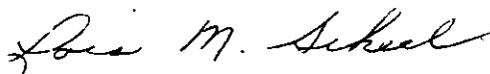
"SIDS, also known as crib death, has not always been an inherent danger of parental life. It was first described as a medical phenomenon by Dr. A.M. Barrett in 1953. He estimated that unexplained infant deaths then were three to four times what they had been a few years earlier and that the additional numbers occurred mainly in sleep. Queries were naturally raised about the historical perspective—perhaps crib death had never previously been noticed, monitored, or recorded—but by the end of the 1960s, the consensus of scientific and medical opinion was that there had been no complete casualty rate before the second world war.

"From 1986-88, approximately 1,500 babies died annually in England and Wales, all in the same mysterious way. They showed no symptoms of illness; they just suddenly capitulated. There were crib deaths in the U.S., Australia, and New Zealand and throughout Western Europe. There appeared to be none in parts of Africa and in China, India, nor were there any in Japan where infants slept on cotton futons impregnated with boric acid, a safe fire retardant. Yet Japanese infants in America suffered crib death at the same rate as the rest of the population. However, when Japan imported Western-style mattresses that had become popular, crib death began to appear for the first time.

"English scientist Barry Richardson had spent most of his life studying the deterioration of materials and the associated health risks. More than 200 mattresses that babies had died on were obtained from coroners. All were found to be contaminated with the fungus *Scopulariopsis brevicaulis*, particularly in the areas exposed to the warmth and perspiration of the baby. The search for arsenic in the presence of much phosphorus and antimony continued. And then it all clicked. This fungus was working on phosphorus and antimony compounds. The tests were repeated, looking for phosphine and stibine (the gaseous form of antimony). They were found right away. Arsenic, phosphorus, and antimony are adjacent Group Five elements in the periodic table and react similarly. Their gaseous forms are exceedingly dangerous, and infants are especially sensitive to them. Once in the bloodstream, the elements cause cardiac inhibition. The heart beats slower and slower until it stops, altogether."

Richardson's scientific findings created a shock wave and some are disputing them. What has never been publicized is that after Richardson completed his research in 1991 and published his report "Cot Death: Must Babies Still Die?", manufacturers already had been alerted to the risks and changed the composition of the fire-retardant materials, leaving out antimony. So, could this be the reason fewer babies are dying instead of the change from sleeping on their stomachs to their backs?

*Source: World Press Review, Medicine—A Controversial Theory on Crib Death by Bob Woffinden, "The Guardian" (liberal), London, April 1, 1995.*



Lois M. Scheel  
1248 Cheney Creek Rd.  
Grants Pass, OR 97527

TM FYI  
AB



Ciba

July 15, 1998

Ms. Mary Sheila Gall  
Vice Chairperson  
U.S. Consumer Product Safety Commission  
Washington, DC 20207

Z 026 307 560

Certified Mail/Return Receipt

**Subject: Follow-up to May 5-6 Public Hearing on Flame Retardant Chemicals**

Dear Vice Chairperson Gall:

The purpose of this correspondence is to respond to the two inquiries you raised during my testimony regarding Pyrovatex® at the May 6, 1998 CPSC public hearing on flame retardants. In short, these questions pertained to: Ciba's experience in selling flame retardant chemicals to Scandinavian countries, and the availability of data related to the long-term durability of our product in furniture upholstery or apparel in the United Kingdom.

I have reviewed your request for further information with our group company in the United Kingdom and have the following to report:

1. Regarding Scandinavian countries, attached (attachment 1) is a copy of a brochure from one of our largest flame retardant customers in Europe – Dale of Norway. Dale of Norway produces work wear fabrics for North Sea oil rigs and other industries. The information contained in their brochure addresses the safety, performance, and durability of work wear treated with our products. Tests conducted by Dale of Norway on Norwegian military equipment shows that apparel treated with Pyrovatex® can be stored for long periods of time (4 to 10 years) without undergoing hydrolysis or negatively affecting the garments anti-flame characteristics.
2. With regard to the long-term durability of fabrics treated with our flame retardants in the U.K., our group company in England reports that in the years since legislation was introduced in the U.K. for upholstery furniture (i.e., 1988), there have been no incidents or reports of fabric failure when treated with Pyrovatex®. Similarly, there have also been no reports of adverse health effects arising from the use of our products in consumer settings.

Moreover, tests carried out in our U.K. labs on fabrics known to be 2-3 years old indicate that the fabrics passed a match test after being washed. Further, attached (attachment 2) is a report that our U.K. lab did for a customer in 1990

Mary Sheila Gall  
Page 2 of 2

on a range of fabrics which had been processed over a year earlier. Phosphorus analysis of these fabrics indicated a level of 1.4 to 1.5% P, a level recommended to ensure that if the fabric were not washed for several years, it would still meet the FR criteria. For the same customer, we then carried out 5 dry cleans and conducted a match test (after soiling). As seen in the attached report, even at low levels of phosphorus, the fabric still passed.

We hope that this information is useful and are available to meet with you and your colleagues should you require further information. Please feel free to contact me at (336) 801-2493 if you have any further questions.

Sincerely,



Carl David D'Ruiz, MPH  
Executive Director, Product Stewardship and Regulatory Affairs

Attachments

Cc: D. Parkes  
K. Rowe

*Handwritten signature*

FABRICS TESTED

Nomex<sup>®</sup> IIIA by DuPont. An award product popular world wide among industrial workers and firefighters alike, Nomex<sup>®</sup> IIIA consists of 93% Nomex<sup>®</sup>, 5% Kevlar and 2% P140. Nomex<sup>®</sup>, a synthetic FR fibre (aromatic-imide) is combined with Kevlar for strength and P140 for anti-static qualities.

Indura<sup>®</sup> by Westex Inc. Widely used in North America and recently introduced in Europe, Indura<sup>®</sup> is a trademark for a product that consists of 100% cotton treated with Proban<sup>®</sup> CC chemicals. According to the manufacturer, the Indura<sup>®</sup> "which renders the fabric flame resistant for the useful wearing life of the garment".

Dale Antiflame by Dale AS. A market leader in Europe with growing international popularity, Dale Antiflame is a trade name for 100% cotton fabrics made flame resistant in Dale's unique Antiflame process. In this process, Pyrovatex<sup>®</sup> chemicals from Ciba become chemical residents of the fibre. When laundered according to instructions, Dale Antiflame retains its fire resistance indefinitely.

Product	Fibre Content	Weight g/m <sup>2</sup>	Weight oz/yd <sup>2</sup>
Dale Antiflame 1023	100% FR Cotton	250	7.5
Nomex <sup>®</sup> IIIA	93% Nomex <sup>®</sup> / 5% Kevlar / 2% P140	210	6
Dale Antiflame 1033	100% FR Cotton	350	10
Indura <sup>®</sup>	100% FR Cotton	340	9

WHY TEST IN THESE WEIGHTS?

We have chosen to test Dale Antiflame fabric in our standard 10 ounce weight and in a 7.5 ounce weight against a 9 ounce Indura<sup>®</sup> and 6 ounce Nomex<sup>®</sup>. It might have made more sense, you may think, to have tested all the fabrics at the same weight. However, in order to indicate the actual level of protection offered to users, we think it appropriate to test widely used weights. More to the point, we tested the competitive products in a "heavy" popular weight.

THE TESTS

FR fabrics can be, and have been, subjected to a bewildering variety of safety and comfort tests. The tests to which we have put Dale Antiflame and the other FR fabrics have international acceptance and provide the most accurate picture possible of how the fabrics will perform under real-life conditions. No criterion other than real-life performance determined our selection of tests.

Nomex<sup>®</sup> is a registered trademark of DuPont. Indura<sup>®</sup> is a registered trademark of Westex Inc. Proban<sup>®</sup> is a registered trademark of Albright & Wilson Ltd. Pyrovatex<sup>®</sup> is a trademark of Ciba Geigy Corporation.  
\*Westex Technical Brief 3/75.



# SUPERIOR COMFORT

The North Carolina State University Center for Research on Textile Protection and Comfort (T-PACC) is the source of all test data related to comfort. The full test report is available from Dale. Dale is solely responsible for the descriptions of testing procedures and interpretation of test data provided by NSCU, and for all conclusions and inferences made concerning the relationship between laboratory tests and real-life garment comfort that appear in this brochure.

## COMFORTABLE COTTON

Compared to safety and value, comfort may not seem an important consideration in the manufacture of an FR fabric. At Dale, however, we recognize that many workers spend most of their waking hours in work garments. Their comfort is important to us. Most of our FR fabrics, consequently, are 100% cotton. In cold weather cotton is warmer and in hot weather cooler than most synthetic fabrics. Unlike many synthetic fabrics, moreover, cotton breathes. It allows humidity to escape and keeps you dry. Humans have been wearing cotton for thousands of years, and cotton remains the most widely used fibre in existence.

Dale AS isn't the only maker of cotton FR fabrics, yet its cotton FR fabrics stand out. Flame resistant finishes often turn cotton stiff and "boardy". The Dale Antiflame process, by contrast, leaves cotton soft and breathable. Dale Antiflame cotton resists fire but remains in all other respects cotton.

## FABRIC THICKNESS

As a cotton fabric, Dale Antiflame is often heavier than its synthetic rivals. Fabric thickness, however, is a more important determinant of comfort than fabric weight is. Even when Dale Antiflame is heavier than synthetic FR fabrics, it is often thinner.

Dale Antiflame 1023 is an ounce and a half heavier than Nomex® IIIA yet 0.8 mm thinner; Dale Antiflame 1033 is 0.7 mm thinner than Indura® even at the same weight (refer to Figure 8).

## FREE FORMALDEHYDE

In chemically treated fabrics, a high content of free formaldehyde may cause health problems. Specifically, a high content of free formaldehyde may cause skin irritations, especially for persons with skin allergies. Formaldehyde is also on the list of known carcinogens.

Method: Japan Law 112.

Content of free formaldehyde in fabrics is measured in PPM.

### Results:

Product	Formaldehyde Content (PPM)
Dale Antiflame 1033	27.5
Indura®	365.0

Conclusion: Dale Antiflame products have very low content of free formaldehyde.



Figure 8- Comparative Thickness

Product	Fabric Weight	Thickness (mm)
Dale Antiflame 1023	7.61 oz.	0.53
Nomex® IIIA	6.00 oz.	0.61
Dale Antiflame 1033	10.25 oz.	0.74
Indura®	9.09 oz.	0.83

Technology: K11-13 / March 1974

# DALE ANTIFLAME SAFETY RECORD

## THREE DECADES OF SUCCESS

**Conclusion:** Dale Antiflame 1033 has significantly better antistatic properties than do Nomex® IIIA and Delta A. It will lose a charge of 5 kV almost a hundred times as fast.  
**Institute:** BTIG.  
**Reference:** 2/5968/2  
**Jan. 29, 1995.**

### DURABLE SAFETY PERFORMANCE

Testing unused FR fabrics provides only a partial view of their safety performance. Such testing says nothing about how flame resistant a fabric remains after repeated washings and wearings. As studies conducted in co-operation with some of our largest end-users show, a Dale Antiflame garment worn by offshore workers normally receives 100-150 washings during its life span. We arranged for Dale Antiflame fabrics laundered 200 times to be subjected to a Vertical Flame Test.

**Purpose:** To confirm that laundered Dale Antiflame fabrics remain flame resistant.

**Method:** British standard BS 6249 Part 1; 1982 Vertical Flame Test.

**Results:** Refer to Figure 6.

**Conclusions:** Clearly, a Dale Antiflame garment, when properly cared for, easily affords workers as much protection on its last day of use as on its first.

**Institute:** SCOT Innovation & Development Inc.

**Reference:** 2/2933/3 Dec. 3, 1993

### DALE ANTIFLAME IN USE

At Norway's HMS Senter (Health, Environment and Safety Centre), they subject their Dale Antiflame garments to even more washings. A training facility for offshore workers attended by more than 3,500 people annually, the HMS Senter makes heavy demands on Dale Antiflame fabrics. Coveralls are frequently soiled and require more than 250 washings during their life span. The HMS Senter's tests and inspections of garments washed 250 - 300 times again reveal that Dale antiflame retains its resistance to fire and heat.

### SENEGARD MANNEQUIN TEST OF USED GARMENTS

**Purpose:** Repeated laundering may actually improve Dale Antiflame's heat resistance. In a series of flash fire tests conducted by the British Textile Technology Group, scientists discovered that used Dale Antiflame garments had better thermal protec-

Figure 6: Vertical Flame Test

Vertical Flame Test	200 Washings	250 Washings	300 Washings
Duration of Flaming (sec.)	0	0	0
Duration of Afterglow (sec.)	0	0	0
Flaming Debris	No	No	No
Extent of Melting (mm)	0	0	0
Mean Damaged Length (mm)	60	57	57

Washed and tested according to BS 6249



# TECHNICAL REPORT

Attachment 2:

Customer

Date 13.90  
Reference TCF 90/61  
SJM JD/JB

For the attention of Mr. G. Clarke

## EXAMINATION OF PYROVATEX CP NEW TREATED FABRICS MARCH - DECEMBER 1989

### INTRODUCTION

Twenty-one Pyrovatex CP New Treated fabric samples were submitted for our examination. The samples were representative of production from March to December 1989 and consisted of eight 280 cottons, five 230 Unions and eight 260 cottons (full details are given on Table 1).

### WORK CARRIED OUT

The samples were tested as follows:-

As received	:	% Phosphorous BS 5852 'match test' after leaching
After commercial dry cleaning (five times)	:	% Phosphorous BS 5852 'match test'
After soiling	:	BS 5852 'match test' on: a) leached fabric b) dry cleaned fabric

### TEST PROCEDURES

#### PHOSPHOROUS CONTENT

Determined by wet chemical gravimetric analysis.

#### BS 5852 SOURCE 1 (MATCH TEST)

#### Pre-treatment (not carried out on dry cleaned samples)

Water soaking in accordance with BS 5651, clauses 4.2 - 4.5, (ried and then conditioned in accordance with BS 5852 : Part 1, clause 1.1.

contd...

Every effort has been made to ensure that this publication presents a true and fair description of our products based on our current knowledge and testing facilities but nothing contained herein shall be implied as a condition or warranty of performance or fitness of any product for any particular purpose and we cannot accept liability for any loss or damage resulting from any statement error or omission.

All our products are sold subject to our conditions of sale, details of which are available

Partnership  
for  
success



FLAMMABILITY TESTING

MATCH EQUIVALENT IGNITION SOURCE

Test Method: BS 5852 : Part 1 : 1979  
Ignition Source: Butane flame ignition source 1  
Filling: Non-fire retardant polyurethane foam of density 20 - 22 kg per cubic metre as specified in "The Furniture and Furnishings (Fire) (Safety) Regulations 1988, Schedule 5"

DRY SOIL TEST

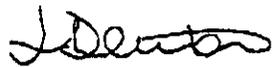
A fabric sample (sufficient to test) and 10g of 3M dry soil were vigorously agitated together for one minute. Excess soil was then removed by gently vacuuming.

DRY CLEANING

Samples were dry-cleaned five times in perchloroethylene with detergent and emulsifier using the method suitable for normal articles (including upholstery) according to BS 4691 : Part 1 : 1980. This was carried out on our behalf at the Fabric Care Research Association Limited, Harrogate.

RESULTS

The results are given in Table 2 and are shown graphically in Tables 3, 4, 5 and 6.



S.J. Morris/J. Denton

cc Mr. C.W. Fearn

Table 1

	<u>Date</u>	<u>Print</u>	<u>Run</u>
<u>280 Cotton</u>			
1	21.12.89	Staffordshire Flowers	174 % 5826 P8222
2	12.6.89	Chinolsene Scallop Stripe	55 % 2280 P1875
3	13.10.89		121 % 4664 P5768
4	27.11.89	The Garden House	153 % 6195 P8208
5	3.4.89	Simin	23 % 7789 P4538
6	5.9.89	Linden	96 % 3166 P7610
7	7.8.89	The Orangery	82 % 80246 P6839
8	16.5.89	Mandarin Tree	46 % 1150 P4924
<u>230 Union</u>			
9	23.10.89		127 % 4329 P5810
10			53 % 1591 P4333
11	21.12.89	Sari	174 % 6628 P8032
12	4.9.89	Weaver's Fancy	95 % 90339 P8194
13	23.11.89		151 % 6856 P8385
<u>260 Cotton</u>			
14	7.7.89		72 % 8231 P521
15	9.12.89	Knole House	169 % 5356 P6212
16	4.8.89		80 % 2371 P7387
17	24.11.89	Country House	152 % 6632 P5332
18	29.3.89	Bangalore	20 % 653 P7120
19	6.6.89	Tropical Paisley	51 % 1483 P6673
20	5.9.89	Springtime	96 % 4146 P6317
21	3.10.89		112 % 6872 P7018

Table 2

Sample	<u>As Received</u>		<u>After 5 Dry Cleans</u>		<u>After Soiling</u>	
	% P	Match test (On leached fabric)	% P	Match test	Match test (leached fabric)	Match test (Dry cleaned fabric)
280 Cotton						
1	1.65	PASS	1.65	PASS	PASS	PASS
2	1.40	PASS	1.55	PASS	(7,9)	PASS
3	1.25	PASS	1.25	(12,12)	(15,10)	(10,10)
4	1.70	PASS	1.70	PASS	PASS	PASS
5	2.00	PASS	1.95	PASS	PASS	PASS
6	1.80	PASS	1.75	PASS	PASS	(6,6)
7	1.50	PASS	1.50	PASS	PASS	PASS
8	1.45	PASS	1.45	PASS	PASS	PASS
230 Union						
9	1.15	PASS	1.25	PASS	PASS	PASS
10	1.30	PASS	1.20	PASS	PASS	(12,14)
11	0.95	PASS	0.95	(10,17)	(15,5)	(18,19)
12	1.30	PASS	1.30	PASS	PASS	PASS
13	1.30	PASS	1.25	PASS	PASS	(12,11)
260 Cotton						
14	1.50	PASS	1.40	PASS	PASS	PASS
15	1.65	PASS	1.60	PASS	PASS	PASS
16	1.40	PASS	1.40	PASS	PASS	PASS
17	1.75	PASS	1.85	PASS	PASS	PASS
18	1.60	PASS	1.40	PASS	PASS	PASS
19	1.50	PASS	1.45	PASS	PASS	PASS
20	1.40	PASS	1.50	PASS	PASS	PASS
21	1.00	PASS	1.10	PASS	(6,8)	(12,14)

( ) figures given in the brackets are the time of after-flame in seconds observed. (An after-flame of up to 120 seconds is allowed).

Where a 'pass' result is recorded no after-flame was observed.

686 UK  
8/31/98  
MB

EVEREAST, INC.  
Walnut Road Business Park  
203 Gale Lane  
Lebanon, Spang, PA 19349  
610-444-9700  
610-444-1221 (FAX)

July 21, 1998

Office of the Secretary,  
Sadye E. Dunn  
Consumer Product Safety Commission  
4330 E. West Highway, Room 502  
Bethesda, MD 20814

RE: Comments on Toxicity of Flame Retardant Chemical Treatments  
for Upholstery Fabrics  
Consumer Product Safety Commission

Dear Ms. Dunn:

Everfast, Inc. respectfully submits these comments on issues relating to the toxicity of flame retardant chemicals, specifically those raised at the Consumer Product Safety Commission toxicity hearings on May 5-6, 1998.

Everfast, Inc. is the owner, operator and franchisor of 110 fabric and home furnishings stores throughout the United States. We have been in business since 1948 and conduct operations in 33 states under the trade name "Calico Corners". We employ approximately 1500 persons nationwide. Please note that our primary line of business is the sale of decorative fabrics by the yard to retail customers. This activity represents approximately 65% of our total revenues. Calico Corners is one of the largest customers of the major American weaving mills and print converters that manufacture decorative fabrics. Within the past five years we have sold fabrics for home furnishings to over two million consumers.

We have read and reviewed substantial materials regarding the possibility of the regulation of upholstered furniture for flammability. In particular, we have studied the briefing memorandum prepared by Dale R. Ray, Project Manager, dated October 1997.

**IN OUR OPINION, ADOPTION OF SUCH REGULATIONS WOULD HAVE  
DISASTROUS CONSEQUENCES FOR OUR STORES, EMPLOYEES AND CUSTOMERS.**

At the outset let us emphasize that we fully support the objectives of the Consumer Product Safety Commission with respect to the health and safety concerns. Further, we would support any regulations which are reasonable and appropriate.

The important reasons for our concern include the following:

1. We believe that a regulation requiring the application of flame retardant fabric treatment would be quite expensive. In our opinion, the economic impact of such costs would substantially reduce the demand for decorative fabrics. The projected loss of business could lead to store closings and loss of jobs.
2. We are familiar with the physical consequences of flame retardant treatments on fabrics. To our customers, a purchase decision is significantly affected by the feel or "hand" of the goods. It is our experience that the application of a flame retardant treatment results in a firm, stiff hand. Such an outcome would be offensive to our customers and would severely limit the range of fabrics available for upholstered furniture.

Flame retardant treatments are not invisible, as are stain repellent treatments. In addition, they are difficult to impossible to apply to fabrics with a pile, such as velvets, without deleterious effects to the appearance of the fabric.

3. A regulation requiring application of a flame retardant fabric treatment would be difficult to administer and would force complex "lose-lose" business judgments. *Most decorative fabrics are woven or printed to be multi-purpose.* At the time of production there is no way of knowing whether the specific fabric will be used for furniture, window treatments, tableskirts, bedspreads, pillows, etc. Accordingly, fabric producers would be forced to choose to either:
  - a. Treat all fabrics at the time of production as if the end use were furniture (resulting in very substantial waste for fabrics that do not go to furniture);

OR

  - b. Custom treat small yardages after the fabric has been selected to cover furniture. This would be very expensive (it could increase costs by as much as 50%!) and time-consuming (it would add 2-3 weeks to an already critical time factor).

Flame Retardant Chemical Treatments  
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Furthermore, there is one particular portion of the October 1997 report to which we take strong exception. We quote the paragraph from page 65:

“While the data gathered thus far demonstrate that a small open flame standard could have significant net benefits, some concerns remain about the use of FR fabric treatments. Some chemicals used in such treatments are known to be chronically toxic, although the staff knows of no evidence of likely consumer exposure.” [underlining added]

Since it is unlikely that you are familiar with the operations of retail fabric stores, please allow us to explain how there would, in fact, be high likelihood of consumer exposure to fire retardant fabric treatments.

In the course of our operations, each bolt of fabric is handled by an average of no less than five employees before it reaches the store. Included in this handling is what we call the “rewind and measure” function, where the fabric is wrapped around a cardboard tube by a rewinding machine operating at a high speed. The probability of a flame retardant treatment disbursing and being exposed to an employee at this time is extremely high. Once the bolt of fabric is received in our stores the “rewind and inspect” process is repeated as many as ten times for a single bolt. This is the process by which our retail customers physically examine the fabric for pattern size, defects, color variation, etc. Bolts of fabric usually run 50-60 yards in length, thus one bolt may be handled many times for multiple sales. In addition, the fabrics are constantly touched, displayed, sent home “on approval”, and draped over furniture to help customers visualize the finished product. There is no question that our employees and our retail customers would be frequently exposed to whatever flame retardant fabric treatment is used.

These comments are submitted in anticipation that the CPSC did not know that decorative fabrics sold at retail are handled so extensively before being applied to furniture. In addition to Calico Corners, there are approximately 2,000-4,000 retail fabric stores across the country also selling fabrics for home furnishings to consumers and home sewers.

It is our understanding that California has successfully made progress on this public safety risk through methods that would have substantially less negative impact than the proposed

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regulations. We sincerely request that your proposed rule-making be reconsidered in light of these probable adverse effects on the retail fabric industry and the millions of consumers who reupholster furniture and redecorate their homes each year.

Very truly yours,

A handwritten signature in cursive script that reads "Bert G. Kerstetter".

Bert G. Kerstetter  
President

Before the  
CONSUMER PRODUCT SAFETY COMMISSION  
Washington, D.C.

-----x  
In the matter of: :  
: 63 FR 13017  
Proposed Upholstered Furniture : March 17, 1998  
Flammability Regulations : and  
: 63 FR 18183  
: April 14, 1998  
: :  
-----x

**POST HEARING COMMENTS OF THE COALITION OF CONVERTERS  
OF DECORATIVE FABRICS**

The Coalition of Converters of Decorative Fabrics ("CCDF") submits these comments in response to the request of the Consumer Product Safety Commission ("CPSC"), published on March 17, 1998, for written comments relating to the toxicity, exposure bioavailability, and environmental effects of flame retardant chemicals that will result if the CPSC's proposed flammability regulations for upholstered furniture are implemented. These comments are also in response to the issues raised at the Commission's May 5-6, 1998 hearing on Toxicity of Flame Retardant Chemicals that may be used on Upholstery Fabrics.

CCDF takes this opportunity to provide comments to the CPSC concerning what are likely to be the specific impacts of the proposed regulations on the segment of the fabric industry represented by CCDF, a segment which may not have been considered

by the CPSC staff in its deliberations to date. As discussed below, CCDF's membership will be adversely and disproportionately impacted if the proposed regulations are adopted.

#### **BACKGROUND**

CCDF is comprised of the leading home furnishing and decorative fabric converters in the United States. As converters, CCDF's members create or acquire proprietary rights in original designs, which they then cause to be printed, woven or otherwise fabricated by third parties onto a multitude of fabric types. The finished fabrics are then sold by the converters worldwide for a variety of end uses. CCDF's membership accounts for approximately \$1 billion to \$1.5 billion in sales annually, representing by volume of business the vast majority of the home furnishing converting industry in the United States.

Printing and other production processes are performed for CCDF member companies by entities located in the United States, as well as in numerous other countries including in Asia, Europe and Central and South America. The selection of where such efforts will be undertaken are based on considerations of cost and aesthetics. These vendors, except in the rarest of cases, are not equipped to chemically treat fabrics for fire backcoating purposes.

CCDF members distribute their products through a variety of channels, typically from their own distribution and warehousing facilities located in the United States. CCDF members' customers include jobbers, contractors, wholesalers, furniture manufacturers and retailers located throughout the world. In making sales, CCDF members maintain showrooms and display facilities, exhibit at domestic and international trade fairs and have salesmen visit customers in all countries where they may be located. In all cases it is always important to allow customers to inspect the fabrics offered for sale both visually and texturally.

CCDF members each develop and commercialize hundreds of new product offerings each year. It is very common that the same products are used for a myriad of end uses, including upholstered furniture, bedding, wall coverings, and other home furnishing applications.

#### **DISCUSSION**

CCDF member companies are not engaged directly in the manufacture or chemical treatment of fabrics used for upholstered furniture or otherwise. Accordingly, these comments do not seek to address specific toxicity and environmental issues from a technical perspective, but instead are intended to identify the risks and implications that may arise if treatment of upholstered

furniture fabrics with flame retardant chemicals became mandatory. As discussed below, these potential risks and implications would cause CCDF's members serious disadvantages.

**A. Risks From Exposure To Chemically Treated Fabrics**

The application of flame retardant chemicals to the fabrics sold by CCDF members could pose serious health risks because individuals throughout the distribution chain would have continuous exposure to the treated fabrics. Such exposure would occur long before any fabric is placed on a piece of furniture and would involve employees of CCDF companies; buyers for CCDF members' customers; and personnel at the printing, weaving and other fabricating operations used by CCDF members.

As an initial matter, CCDF members' employees will be exposed to flame retardant chemicals on a regular basis. Warehouse and showroom personnel routinely handle fabrics for distribution and display purposes many times each day. Likewise, salespeople, including at trade fairs and when visiting customers, would be continuously displaying fabric swatches which would have to be treated so customers could accurately assess the feel of the fabric that would be purchased. Thus, exposure to the chemicals used for treating the fabric would occur through direct contact and, because of the "breathable" nature of fabric, through the air.

Moreover, many of CCDF's members have what are known as "cut order operations" which involve the sale of smaller volumes of fabric that are literally cut from the larger rolls. The people involved in cut order operations repeatedly handle the cut fabric many times each day. To the extent the backcoating process would otherwise contain the chemicals used to treat the fabric (which is unlikely), cutting the treated fabric would break any "seal" that may exist, and the warehouse and sales personnel handling the cut fabric would be continuously exposed directly to the treated portion of the material.

Similarly, customers of CCDF members will face exposure to fire retardant chemicals. Their personnel, too, continuously handle and physically examine fabric samples for look, texture, durability, dimension, and related aesthetic and functional considerations, and it would be important that samples of the actual fabrics they purchase are presented for inspection. Otherwise, an inaccurate impression would be created concerning important attributes of the product.

Individuals involved in the printing, weaving or other fabrication of goods by third parties may also be exposed to the chemicals that would be used for fire prevention purposes, depending when during the production cycle such chemicals are applied. For example, a common technique for applying a decorative design onto either greige goods or a woven fabric is

through a heat transfer process. If the greige good or woven product is backcoated with fire retardant chemicals prior to the heat transfer, the personnel performing that latter step would be exposed to the chemical treatment and any toxicological effects that might occur as the result of the interaction of the chemicals with the heating process. If the chemical backcoating was applied after, for example, the heat transfer step, then it would be impossible to predict the impact on the finished fabric's physical and aesthetic characteristics.

In these circumstances, we believe it is clear that if upholstered furniture fabrics are required to be treated with flame retardant chemicals substantial exposure to such chemicals would likely exist in ways that have not been fully recognized or even considered by the CPSC staff to date. The full potential of the toxicological hazards that could result from the use of such chemicals, therefore, remains unknown and to move forward with any rulemaking proceeding in the absence of such knowledge would not be responsible or appropriate.

**B. Requiring The Application Of Potentially Toxic Chemicals To Fabrics Would Create Significant Economic Burdens On CCDF Members**

In addition to potential health risks, requiring upholstered furniture fabrics to be treated with potentially

toxic chemicals would sharply increase CCDF members' costs of operations.

Presently, few CCDF members sell fabrics treated with flame retardant chemicals. Even as concerns fabrics sold to the United Kingdom, barrier cloths are used generally to meet mandated fire resistant standards. If the proposed flammability regulations are implemented, therefore, CCDF member companies would have to assume the additional cost of retaining third party finishers to treat fabrics. Such additional costs, however, could be prohibitive. Indeed, since today few companies exist that do or could provide the treatment services that CCDF's members would need, once a mandated CPSC regulation is adopted and demand for service increases, thereby overtaxing what limited capacity exists, costs are likely to escalate even higher. Costs would also likely increase because third parties would have to bear the costs of greater exposure at their operations to the chemicals that would be used and the need to dispose of effluents and other residuals of the chemicals consistent with applicable environmental regulations.

Similarly, CCDF members would have to rely on outside sources if they are required to comply with any proposed testing obligations as respects the use or safety of any fire retardant chemicals. CCDF members do not have internal capabilities to perform these tasks either, and even assuming external resources

are available, using them would impose yet another direct cost of operation.

Further, because the risks of exposure to flame retardant chemicals, as discussed above, would be widespread among CCDF personnel, it is likely that steps would have to be taken to ensure compliance with OSHA and other workplace or environmental regulations.

Moreover, requiring the use of flame retardant chemicals on fabrics to be used for upholstered furniture applications would force CCDF members to implement and maintain multiple inventories. Although the same fabric is frequently used for a variety of applications -- e.g., upholstered furniture and draperies -- because of the nature of many fabrics sold by CCDF members, a treated fabric will not perform when used for certain applications. For example, in many cases a drape simply won't drape if treated fabric is used. Therefore, to assure compliance with the proposed upholstered furniture regulations while simultaneously continuing to offer for sale fabrics for multiple applications, CCDF members would be compelled to maintain separate inventories of treated and untreated fabrics, and of differently treated fabrics depending upon their specific fiber mix and intended use. This would result in redundant warehouse and product costs, complications in the purchasing process for all customers, and delays in delivery time of the

finished product to the ultimate consumer. It would also involve what could be significant costs to reprogram software that presently allows CCDF members to maintain and track their inventories.

Increased costs would also likely result from quality control testing that would be necessary if upholstered furniture fabrics required chemical treatment. Such testing would have to be performed to determine whether fabrics would meet consumer expectations for wearability, colorfastness and durability. Different fire retardant chemicals are likely to interact differently with different fiber mixes and such characteristics are likely to be impacted differently. Because CCDF members do not have the internal capabilities to make such determinations, they again would have to rely on third party resources to do so, if in fact such determination could be made at all.

CCDF members' ability efficiently and cost effectively to utilize production resources outside the United States also would be negatively impacted if chemical treatment of fabrics is required. Products printed, woven or otherwise produced through specialized processes unique to a foreign country might not be able to maintain their structural or textural integrity if they are subsequently treated with fire retardant chemicals. Those fabrics would simply no longer be available for sale in this country.

Conversely, exports by CCDF member companies could be significantly curtailed. Certain markets, the EU for example, do not permit chemically treated fabrics to be sold. Moreover, the use of chemically treated samples might be limited at trade fairs (the most significant international fair is held in Germany which, we understand, declined to follow the United Kingdom's lead because of uncertainties attendant to using fire resistant chemicals), and entering particular countries with treated samples for sales calls might be circumscribed.

In sum, just as a full understanding of the potential health risks resulting from the use of fire retardant chemicals has not yet been achieved, the full extent of the costs that would be created as the result of using such chemicals, particularly as respects CCDF's members, has not been fully considered.

#### **CONCLUSION**

The CCDF supports the objective of reducing the risks of small flame ignitions of upholstered furniture. CCDF respectfully submits, however, that mandated flame retardant chemical treatment of all fabrics used for that purpose will not achieve this objective without subjecting a significant segment of the U.S. textile industry and the public at large to unreasonable health and environmental risks; jeopardizing the economic survival of converters of decorative fabrics; and

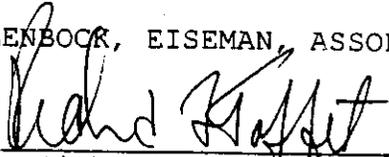
increasing product costs while decreasing product choice and availability to consumers.

CCDF appreciates this opportunity to provide its comments to the CPSC on the proposed flammability regulations and is available to respond to any questions the Commissioners may have concerning the impact of these regulations on CCDF's members.

Dated: July 30, 1998

Respectfully submitted,

GOLENBOCK, EISEMAN, ASSOR & BELL

By: 

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Before the  
CONSUMER PRODUCT SAFETY COMMISSION  
Washington, D.C.

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**POST HEARING COMMENTS OF THE DECORATIVE FABRICS ASSOCIATION**

The Decorative Fabrics Association ("DFA") submits these comments in response to the request of the Consumer Product Safety Commission ("CPSC"), published on March 17, 1998, for written comments relating to the toxicity, exposure bioavailability, and environmental effects of flame retardant chemicals that will result if the CPSC's proposed flammability regulations for upholstered furniture are implemented. These comments are also in response to the issues raised at the Commission's May 5-6, 1998 hearing on Toxicity of Flame Retardant Chemicals that may be used on Upholstery Fabrics.

DFA offers these comments to assist the CPSC in evaluating the specific impact of the proposed regulations on the segment of the fabric industry comprised of DFA's membership. This segment may not have been directly considered by the CPSC staff in its deliberations to date, and as discussed below, the

proposed regulations will have a dramatically negative and disproportionate impact on it.

#### **BACKGROUND**

The DFA is comprised of fifty five member companies which are actively engaged in the business of distributing nationally, as wholesalers, highly-styled domestic and imported decorative fabrics. In 1997, DFA's membership reported annual aggregate sales of approximately \$1 billion. DFA member firms, however, are relatively small: 50% have annual sales of under \$5 million; 22% have annual sales from \$5 - 10 million; and approximately 26% have annual sales in excess of \$10 million. All DFA members are family or otherwise privately owned.

A substantial percentage of the fabrics sold by DFA member companies consist of natural fibers such as silk, which is a protein, or linen, rayon and cotton, which are cellulosic. Consumers overwhelmingly prefer these fabrics for use in home furnishings, while chemically-backed manmade fibers would be undesirable for DFA members' customers.

The products sold by DFA member companies contain wide variations of fiber mixes in a multitude of combinations. New variations are offered each season for use with many types of home furnishing applications, including without limitation

upholstered furniture, bedding, window treatments and wall coverings.

Sources from which DFA members purchase the fabrics they sell are located throughout the world, primarily from the United States and Europe. Indeed, certain fabrics which comprise an important percentage of DFA members' product mix are only, or primarily, available from sources outside the United States which are not, and would not be, subject to the type of flammability regulations now being considered. DFA member companies do not engage in manufacturing or maintain fabric treatment and testing operations. Any treatments or testing would have to be performed by third parties.

DFA members distribute products primarily through interior designers from showrooms and interior design studios located throughout the United States. Accordingly, distribution is made primarily through "cut order" operations where smaller volumes are sold to fill specific customer orders.

At any particular time DFA member companies may be distributing hundreds, if not thousands and tens of thousands, of different product offerings. DFA members market these fabrics in large measure by the use of sample books which are made available, for example, to retail consumers through interior designers. These sample books contain swatches of the full line of fabrics being offered for sale by a particular company, and

are important to allow prospective customers to view the fabrics' color and design, as well as to feel its weight and texture.

Swatch materials included in sample books also permit consumers to choose fabrics on a coordinated basis. The same fabrics are used for upholstered furniture applications, as well as for complementary applications such as draperies, bedspreads and/or wall coverings. This approach provides consumers with maximum flexibility and choice.

#### **DISCUSSION**

DFA member companies are not involved directly in the manufacture or chemical treatment of upholstered furniture. Accordingly, its personnel do not have the expertise to address toxicity and environmental issues from a strict technical standpoint. Rather, these comments address the risks and implications of applying flame retardant chemicals to fabric used in the manufacture of upholstered furniture from an industry perspective. In this connection, and as discussed below, the proposed flammability regulations will have a serious adverse impact on the industry segment represented by the DFA.

##### **A. Risks From Exposure To Chemically Treated Fabrics**

The application of flame retardant chemicals to the fabrics sold by DFA members would expose individuals throughout

the distribution chain to the potential health risks that might arise from the use of such chemicals. Such individuals would include employees of DFA members, the interior designers, other customers of DFA members, as well as ultimate consumers.

First, DFA members' employees will face substantial exposure to flame retardant chemicals. Warehouse employees, showroom personnel and road salespeople regularly handle the back and front of such goods for distribution and display purposes many times each day. This would include in connection with loading and shipping orders and presenting samples to prospective customers. Fabric, by its nature is breathable, and any chemicals used to treat the products sold by DFA members would invariably be transmitted to DFA's personnel daily by direct contact and through the air in the workplace. In addition, cut order operations of the type operated by DFA's members involve the repeated handling and cutting of fabric during the course of any particular day. Personnel involved in such operations would have constant contact with the treated fabric, and by cutting the treated fabric they would be risking exposure directly to the chemicals themselves. Simply, cutting a piece of treated fabric would break any "seal" that may otherwise be created by a backcoating process, and in addition to handling the exterior of the backcoating such personnel would come into contact with the materials placed directly on the back of the fabric.

Customers and their personnel, including interior designers, also would face repeated exposure to the chemicals that may be used for fire resistant backcoating. These individuals would be continuously handling and physically examining treated fabrics and sample books for look, texture, durability, dimension, and related aesthetic and functional considerations. They, too, would be exposed to any chemicals used to fire treat the fabrics.

Likewise, ultimate consumers of the fabrics sold by DFA members would face such exposure. They too extensively handle the fabrics being sold as they make choices about the finished products they are purchasing. They also sit, recline, sleep on and otherwise come into contact with the fabric once it is included in a piece of furniture. Moreover, as fabric is used and cleaned over time, wear and tear will erode backcoating and increase the potential contact for consumers with the fire treatment chemicals both through touch and through the air.

Thus, long before a fabric will appear on a chair or sofa, everyone in the distribution chain, including the ultimate consumer, will face significant exposure to its chemical treatment. The potential hazardous toxicological effects of such exposure, at least at this juncture, do not appear to have been fully considered and clearly are not fully known. To move

forward with any rulemaking proceeding in these circumstances, we submit, would be unreasonable and irresponsible.

**B. Requiring The Application Of Potentially Toxic Chemicals To Fabrics Would Create Significant Economic Burdens On DFA Members**

In addition to creating potential health hazards, requiring fabrics sold in the United States to be treated with potentially toxic chemicals would increase costs to DFA members dramatically, if not insurmountably, and substantially limit the product choices of consumers. Among the added and never before existent costs would be those related to having fabrics treated and tested by third parties for the purpose of complying with regulatory requirements; maintaining duplicate inventories and sample programs; and facing a tremendous reduction of product sources for which no substitutes would exist. Consumer choice would be undermined because, even when backcoated, the natural fiber fabrics that comprise the predominant sales of DFA members will not pass the standard proposed by the CPSC staff.

Today, few if any DFA members distribute any fabrics treated with flame retardant chemicals. This is true even as respects goods which are sold to the United Kingdom, where there are fire resistant standards in place. There, a barrier cloth alternative is permitted for natural fiber fabrics such as are sold by DFA members. If the proposed flammability regulations

are implemented in the United States, small businesses such as those which largely comprise DFA, simply will find it very difficult to bear the cost of such treatment.

The costs of having fabrics treated are likely to be substantial and even higher than current levels. Presently, relatively few firms render the treatment services that would be required by DFA's members. Those that do impose minimum charges or require minimum quantities which, in both cases, exceed the typical order of a DFA member. Accordingly, even now, at existing cost levels, the additional costs would have to be calculated as far more than a per yardage charge. Once demand increases as the result of a mandated CPSC regulation, what limited capacity does exist likely will be seriously strained and inevitably the price for such services will rise even further. Costs for treatment would also likely rise because the treating firms would have to compensate for higher costs resulting from increased exposure of its workers to the chemicals and the need to dispose of effluents occurring from increased use of the chemicals.

Thus, not only would DFA members face the additional costs of chemical treatment, but such services would be available only at inflated levels. As a result, it would likely become even more cost prohibitive to sell many fabrics which are now purchased from sources throughout the world to meet consumers'

tastes and demands, assuming of course fabrics could be treated successfully at all to meet the CPSC proposed standard.

Existing resources also would likely be insufficient to allow DFA members to comply with any proposed testing requirements, or to assure that the fire retardant chemicals being used performed as expected with each fabric's varying fiber contents. Again, DFA members are not equipped to undertake such efforts in-house, and it is questionable whether available external resources would be adequate, or even competent, to do so on their behalf -- whatever the cost.

Because of the nature of their operations, DFA members also would likely be required to adopt procedures for compliance with OSHA or other environmental and workplace regulations. The risks of exposure to flame retardant chemicals, as discussed above, would be widespread among many of DFA members' personnel and steps would have to be taken to ensure that treated fabrics did not create impermissible working conditions.

Furthermore, the use of flame retardant chemicals on fabrics to be used for upholstered furniture applications would require DFA members to implement and maintain multiple inventories and sample programs. Even though the same fabric is often used for multiple applications -- e.g., upholstered furniture and draperies -- because of the nature of many fabrics sold by DFA members, a treated fabric will not perform when used

for certain applications. For example, fabric used for a drape simply won't drape if treated with flame retardant chemicals. Thus, to attempt compliance with the proposed upholstered furniture regulations, DFA members would be forced to maintain separate inventories of treated and untreated fabrics, or of the same fabrics treated in different ways. This would create redundant warehouse and product costs, complicate the purchasing process for all customers, and delay the time when consumers would be able to obtain their product selections.

Duplicative sample books and marketing materials, too, would have to be created for both treated and non-treated fabrics. One of the most important purchasing characteristics for a fabric consumer is texture and feel. There can be no doubt, however, that chemical treatment will affect the texture and feel of many, if not most, of the fabrics sold by DFA members, and it would be a marketing disaster if a consumer was surprised when her brand new furniture arrived with an unexpectedly stiff, uncomfortable feel after she had selected an untreated fabric with a different feel from a sample book. The cost of creating, updating and maintaining sample books already represents a tremendous cost to DFA members. If two or more sets of books were made necessary -- the additional ones so that consumers could be made aware of the less attractive feel of the treated fabric -- costs would become prohibitive.

Increased costs would also likely result from another area of testing that would become necessary if chemical treatment is required. Such testing would be necessary to determine whether fabrics would meet consumer expectations for wearability, colorfastness and durability. Different fire retardant chemicals are likely to interact differently with different fiber mixes and such characteristics are likely to be impacted differently. DFA members do not have the internal capabilities to make such determinations, and again they would have to rely upon third party resources, assuming they even exist or can be developed.

DFA members' ability efficiently and cost effectively to import and offer for sale fabrics from sources outside the United States also would be seriously impeded if chemical treatment is required. Certain fabrics will simply no longer be available in this country because they cannot be treated with flame retardant chemicals and still maintain their basic characteristics and integrity. Further, of those fabrics that can be treated, such treatment will add another costly and time consuming step to the importation and delivery process as fabrics coming into the United States will have to be diverted to third parties for treatment before they are made available to DFA's prospective customers. Even then, however, since the fire resistant backcoating would take place after the finishing of the fabric, it cannot be predicted how the backcoating step would

affect the physical characteristics and aesthetics of each specific fabric. This, too, would deprive consumers of the degree of product choice that would otherwise exist.

Likewise, exports by DFA member companies will be constrained. Certain markets, the EU for example, do not permit chemically treated chemicals to be sold. We understand that Germany expressly declined to follow the lead of the United Kingdom because of the uncertain consequences of using fire retardant chemicals, and that even now the United Kingdom is struggling to address such consequences as they emerge. Thus, DFA members either would be required to maintain yet another separate inventory of non-treated fabric for export, or curtail substantially their export sales of fabric for upholstered furniture.

The foregoing costs do not even address the decrease in product quality and integrity that would likely occur after chemically treated goods are sold, irrespective of whatever testing is performed. Such fabrics are likely to exhibit, either initially or latently, depending upon the chemical and the fabric, numerous negative characteristics including color bleeding, dimensional changes, reduction in strength and durability, and textural irregularities. As a result, the expected life span of upholstered furniture would decrease, and consumers would have to bear the costs of replacing such goods sooner than otherwise would be necessary. Moreover, as respects those fabrics that would simply not be treatable at all,

consumers would have to bear the cost of having less choice and reduced product diversity.

In sum, the required use of potentially toxic chemicals would have a disproportionately adverse impact on DFA members, their customers and ultimate consumers of their products.

#### **CONCLUSION**

The DFA supports all reasonable efforts to minimize the risks posed to consumers by small flame ignitions of upholstered furniture. DFA respectfully submits, however, that mandated flame retardant chemical treatment of all fabrics used for that purpose will not achieve this objective without exposing American workers and consumers to significant potential health and environmental risks; threatening the economic viability of wholesale sellers of decorative fabrics; and increasing product cost while decreasing product choice, diversity and availability to consumers.

DFA appreciates this opportunity to provide its comments to the CPSC on the proposed flammability regulations and is available to respond to any questions the Commissioners may

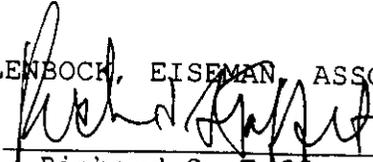
have concerning the impact of these regulations specifically on  
DFA's members.

Dated: July 30, 1998

Respectfully submitted,

GOLENBOCK, EISEMAN, ASSOR & BELL

By:



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Attorneys for the Decorative  
Fabrics Association



"The Industry Voice for Workplace Environment"

6/6/98  
OK  
6/16/98

August 3, 1998

Mr. Dale Ray  
US Consumer Product Safety Commission  
4330 East West Highway, Room 5-15  
Washington, DC 20814

Dear Mr. Ray,

This letter is the response by the Office Furniture Industry in general to the questions asked by the CPSC Commissioner's Ann Brown, Thomas Moore and Ron Medford of Mr. Bryan Lundgren of Haworth, Inc. at the CPSC Public hearing on fire retardant chemicals held May 5-6, 1998. Mr. Lundgren was representing BIFMA International at that public hearing.

Questions of Ann Brown to Bryan Lundgren:

1. Does your company make any products to comply with the CA TB-133, and if yes, are there any FR Chemical treatments used to comply with this standard. If no, how is conformance achieved?

Answer: Many BIFMA International members make seating products which comply with CA TB-133. The most prevalent method of producing a seating product that will meet this test is to use a "barrier" or "inter liner" material, specifically designed for the purpose of meeting the requirements of this test.

The "barrier" or "inter liner" material is used between the upholstery fabric and the cushion material. The "barrier" or "inter liner" material keeps the cushion from becoming ignited during the test. Usually in a CA TB-133 test, the ignition of the upholstery fabric is not sufficient to fail the test, as long as the cushion material does not become ignited.

It is possible to pass CA TB-133 with a selectively matched combination of FR fabric and FR treated foam. Finding the correct combination that will pass the TB-133 test is a matter of expensive experimentation.

2. Some FR treatments may cause odors or emissions. What particular FR treatments result in emissions or odors? You weren't saying there were emissions? You have no specific examples.

Answer: Our member companies purchase fabric from the suppliers as "Fire Retarded." The fabric suppliers have the fabrics treated by fabric treating suppliers. Our member companies do not specify the type of chemicals used, only that the fabric be supplied as Fire Retardant treated. In most cases the Material Safety Data Sheets are all that is supplied with the treated fabric.

Page 2.

Questions of Ann Brown to Bryan Lundgren (continued)

3. You have testified that your company will use FR treatments at the request of the customer. What FR treatments are used in these cases, and are they applied by your company or another company?

**Answer:** As stated in answer 2, our members do not apply fabric treatment. Treated fabric is supplied by the fabric vendor, or applied by a fabric treating company.

4. What steps do you take to protect workers from FR chemicals when the customer supplies FR treated fabric?

**Answer:** The Material Safety Data Sheets, which accompany the treated fabric are reviewed and the appropriate action taken.

Questions of Thomas Moore to Bryan Lundgren:

1. The statement of your company seems to imply that EPA's Technology and Verification program would have problems with FR treated materials but the EPA representatives here today did not seem to have any particular problems along those lines - they look at each chemical individually and make some decisions in cooperation with us. Do you have any comments on that?

**Answer:** Our industry is working with Dr. Les Sparks of the EPA and Dr. David Ensor of Research Triangle Institute to develop a testing protocol for measuring emissions from office furniture. The overall purpose of this work is focused on Indoor Air Quality. Our members have been testing furniture for several years and have data that shows office furniture to be a low emitter of chemicals. Because of our exemplary record of fire safety, there has never been any testing done on furniture supplied with fire retardant treatments.

FR treated materials are not common to our members products.

The project with EPA in the Electronic Technology Verification program has never had nor has any plans for assessing chemical emissions from furniture as a result of the addition of Fire Retardant Chemicals. Eventually, emissions testing of fire retarded materials could be carried out, but at this point, there is no data. It is the general feeling that fire retardant chemicals added to seating fabric would be release as a product of occupant use and movements with time. There is nothing in the present furniture testing protocol which can replicate this condition of use and protracted time emissions characteristic.

It is unfortunate that different groups within EPA do not communicate the progress of industry initiatives to each other.

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Questions of Ron Medford to Bryan Lundgren:

1. The EPA Program that I'm familiar with has to do with indoor air quality and gases emitted from products in homes and commercial buildings. Is that correct. Do you know about the volatility or emissions of FR Chemicals used in this application?

Repeating previous answer

Answer: (Repeated from above) Our industry is working with Dr. Les Sparks of the EPA and Dr. David Enser of Research Triangle Institute to develop a testing protocol for measuring emissions from office furniture. The overall purpose of this work is focused on Indoor Air Quality. Our members have been testing furniture for several years and have data that shows office furniture to be a low emitter of chemicals. Because of our exemplary record of fire safety, there has never been any testing done on furniture supplied with fire retardant treatments.

FR treated materials are not common to our members products.

The project with EPA in the Electronic Technology Verification program has never had nor has any plans for assessing chemical emissions from furniture as a result of the addition of Fire Retardant Chemicals. Eventually, emissions testing of fire retarded materials could be carried out, but at this point, there is no data. It is the general feeling that fire retardant chemicals added to seating fabric would be release as a product of occupant use and movements. There is nothing in the present furniture testing protocol which can replicate this condition.

2. You mentioned whether some fabrics could be recycled for use in automobiles. Can you explain that? I just wondered if you knew? Do you have any knowledge if manufacturers can use any FR chemicals on fabrics.

Answer: There is no universal recycling method within our industry. To the best of our knowledge, the automotive industry does not use fire retardant chemicals in its production automobiles.

Questions of Michael Babich to Bryan Lundgren:

1. You mentioned concern about respirable dust as the product ages and the transfer of chemicals to clothing. Do you have any information on the production of dust of FR treated materials or not?

Answer: Workers in our members factories probably would not have the same degree of long term exposure to the fabrics with fire retardant chemicals as would the occupant of a chair produced with a FR fabric. The majority of the complaints come from dissatisfied customers.

2. You were concerned with worker health. What kind of concerns or occupational hazards such as exposure to dust and skin irritation are present now in the work place in absence of Fire Retardant treatments?

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Answer: The areas for processing and upholstering fabric in our members production facilities are usually clean and free of dust. For the most part, respirators and/or ventilation equipment are not used by the fabric cutters and sewers in an office furniture factory.

Sincerely,



Richard P. Driscoll  
Technical Services Manager