U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207

1640
DEP
E212

October 3, 1998

Mr. Robert M. Sulkin
McNaul, Ebelk, Nawrot, Helgren & Vance
600 University Street, Suite 2700
Seattle, WA 98101-3143

Re: FOIA Request S807008: Detergents in Sleepwear Tests

Dear Mr. Sulkin:

Thank you for your Freedom of Information Act (FOIA) request seeking information from the Commission. The records from the Commission files responsive to your request have been processed and copies are enclosed. The enclosed records include file information generated by the Commission itself or its contractors for regulatory or enforcement purposes. The Commission has established management systems under which supervisors are responsible for reviewing the work of their employees or contractors. The file information materials are final and have been prepared and accepted by the Commission's staff under such review systems. The Commission believes that it has taken reasonable steps to assure the accuracy of the information.

Processing this request, performing the file searches and preparing the information, cost the Commission $80.00. In this instance, we have decided to waive all of the charges. Thank you for your interest in consumer product safety.

Sincerely,

Todd A. Stevenson
Deputy Secretary and
Freedom of Information Officer
Office of the Secretary

Enclosures

Office of the Secretary, Freedom of Information Division, 4340 East West Highway, Room 502, Bethesda, MD 20814-4408
Telephone (301) 504-0785, X1239, Facsimile (301) 504-0127, E-Mail www.tstevenson@cpsc.gov

160 E45

9/30/98 3-05-98

MFR/PRVLBR NOTIFIED
No Comments made
Comments attached
Excisions/Revisions
Firm has not requested further notice

LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Flammability Tests of Pyrovatex-treated Flame Resistant Fabrics

DATE OF MEETING: January 21, 1998

DATE OF LOG ENTRY: February 11, 1998

SOURCE OF LOG ENTRY: Margaret L. Neily, ESME

LOCATION: CPSC, Room 410 A, East West Towers, Bethesda, MD

CPSC ATTENDEES: Margaret Neily, ESME, and others. See attached list of CPSC attendees.

NON-CPSC ATTENDEES: See attached list of attendees.

SUMMARY OF MEETING: In preparation for updating the laundering/detergent requirements for several Flammable Fabrics Act standards, the CPSC staff tested flame resistant children's sleepwear fabrics after launderings with AATCC 124 (with phosphate and non-phosphate built standard detergents) as well as common household powder and liquid non-phosphate detergents. Fabrics treated with Pyrovatex CP new (Pyrovatex) showed poor flame resistance after laundering with powder non-phosphate detergents.

Ciba Specialty Chemicals representatives reported on their follow-up work to further evaluate the impact of laundering on fabrics treated with Pyrovatex. This study focused on knitwear, although primary uses of Pyrovatex are in workwear and home furnishings. Douglas Parks outlined a number of factors that affect the durability of this flame retardant including product quality, application level, processing steps, other finishing components, fabric weight, fiber content, print coverage, fabric style, fabric/garment care. Chlorine bleach, acid sour rinse, storage at high temperature and humidity can degrade the treatment. Fabric softeners, soap-based detergents, and flammable finishes/prints can render the treatment ineffective.

In order to determine the affect of product care on sleepwear fabrics, Ciba conducted a number of flammability tests. Interlock and 1x1 rib knits and heavier cotton terries were included. Test conditions included unwashed and after 50 launderings with non-phosphate detergents: AATCC 1993, a powder detergent for baby products, a powder concentrate and a liquid concentrate with bleach. The phosphorous levels remained durable to the washing process; however, increases in calcium and magnesium were detected. The interlock knits performed unsatisfactorily with the powder concentrate; rib knits also showed increased char lengths over 3 inches. Cotton terries

maintained very short char lengths under all of these wash conditions. Further tests with the terry fabrics, however, confirmed the adverse affects of laundering with products containing chlorine bleach and of fabric softener added to the rinse cycle.

Ciba Specialty Chemicals has no control over the application process used to apply Pyrovatex (they only sell the chemical) or other care factors that adversely impact the flame resistance of garments in use. With the lighter weight fabrics typically used for sleepwear, there is little room for error. Because of this, the company decided it is prudent to stop marketing Pyrovatex to the sleepwear industry (with one exception, a terry fabric over which they have acceptable control). Ciba plans to publish the results of this study.

ATTENDANCE

Ciba Specialty Chemicals
Tests of Pyrovatex-treated FR Fabrics
under the Children's Sleepwear Flammability Standard

January 21, 1998

NAME	COMPANY	PHONE NUMBER
Margaret Neily	CPSC/Engineering	(301) 504-0550, x2354
Marilyn Borsari	CPSC/ Compliance	301 504-0400 X1370
Linda Lawler	CPSC/ Laboratory Sciences	301-413-0453
DALE RAY	CPSC	301.504.0962
Chuck Smith	CPSC-Economic Analysis	301-504-0962
DONC PARKES	CIBA SPECIALTY	334-801-2484
CARL D'RUIZ	CIBA SPECIALTY CHEMICALS	336-80-2493
Phil Wakelyn	NCC	202 745 7805
BILL REARICK	COTTON INCORPORATED	919-510-6234
Joe Ziolkowski	AFMA	336-884-5000
Tess Butson	AFMA	202 466-7362
WARREN Porter	LSC/LS/CPSC	301-413-0040
Bruce Navarro	Navarro Leg. & Reg. Affairs	(202) 955-6006
Sharon White	ESMF / CPSC	(301) 504-0468 ext. 1286
DAVID SCHMELTZER	Squire, Sanders & Dempsey	202 626.6235
Christine Cames	PSL	703-524-7654
Pat Farrall	CPSC/ Compliance	301-504-0400 X1369
Patty Pollitzer	CPSC OGC	301-504-0980 x1318

1/12/98

Ciba Specialty Chemicals (Hong Kong) Limited
Hong Kong

Ciba

Fax

To		Company	
Fax No	Tel. No.	Location	Country
From		Location	File reference
Fax No.	Tel. No.	Date	No. of pages

Re: Flame Retardant Finish - PYROVATEX CP new

Dear (customer name),

It is our policy to respect the guidelines of the responsible care philosophy with respect to our product offerings. Concerning our products PYROVATEX CP new and special for durable flame retardancy on cotton, we have developed solid technical and care labelling documentation necessary for selling treated fabrics into the textile value chain. We are concerned, however, that in the segment of children's sleepwear, where the complexity of controlling the care of fabrics is so high, we cannot ensure that the consumer will wash the article according to our recommendations. This leads to a potential risk out beyond our control, which cannot be accepted.

This is not a question of the product quality of PYROVATEX, which we produce at a high quality level, but moreover a question of fabric type, recipe and process parameters used.

Our responsible care philosophy requires therefore that PYROVATEX CP new and special treated fabrics are NOT to be marketed into the segment of children's sleepwear.

We thank you for your understanding in this matter which targets our mutual care for the safety of the consumer.

B.rgds.

61-69 Yau Ma Hom Road, Kwai Chung, N.T.,
Hong Kong
G. P. O. Box 285, Hong Kong

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RAHMEY INTERNATIONAL, INC.
112 WEST 34th STREET
NEW YORK, NY 10120
(212) 268-0168
FAX (212) 268-9602

COEIMA
ME TIME.
RY LAND"

FACSIMILE-TRANSMISSION

DATE: Jan 12. 1997

TO: Ms. M. Neily

FROM: Jack Rahmey

FAX#: 301-504-0121

RE: Pyrovatex

OF PAGES 2 (INCLUDING COVER PAGE)

MESSAGE:

I hope you are not upset about our conversation.

I am enclosing the CIBA info.

Regds
Jack Rahmey

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LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Flammability Tests of Flame Resistant Fabrics

DATE OF MEETING: October 9, 1997

DATE OF LOG ENTRY: October 27, 1997

SOURCE OF LOG ENTRY: Margaret L. Neily, ESME

LOCATION: CPSC, Room 410 B/C, East West Towers, Bethesda, MD

CPSC ATTENDEES: Margaret Neily, ESME, and others. See attached list of CPSC attendees.

NON-CPSC ATTENDEES: See attached list of attendees.

SUMMARY OF MEETING: This meeting was CLOSED TO THE PUBLIC.

Ciba Specialty Chemical representatives discussed the following information considered confidential:

1. customers of their flame retardant chemical, Pyrovatex,

2. the nature and application of their product, routes of chemical purchase, shipment and application overseas, followed by importation of treated goods into the United States for use in or already in the form of children's sleepwear, and

3. preliminary, unconfirmed results of their testing of treated fabrics with various detergents and their ramifications.

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ATTENDANCE

Ciba Specialty Chemicals
Tests of FR Fabrics to the Children's Sleepwear Flammability Standard
October 9, 1997

NAME	COMPANY	PHONE NUMBER
Margaret Neily	CPSC/Engineering	(301) 504-0550, x2354
Linda Fansler	CPSC / Laboratory Sciences	301 413 0153
Shing-Bong Chen	"	301 413 0038
Terry Karels	CPSC - Economist	301-504-0962
Andy Stadnik	CPSC - ES	301-504-0504
Pat Farrall	CPSC - Compliance	301-504-0400 x1369
Ron Monticone	CPSC - Epi	301-504-0470 x1293
Eric R. Finkelman	Ciba Specialty Chemicals	910-801-2300
Kenneth Rowe	Ciba Specialty Chemicals	910-801-2049
DOUG PARKES	CIBA SPECIALTY CHEM.	910-801-2484
Andy Wisemer	CPSC / Lab. Sciences	301-413-0150
CARL D'RUIZ	CIBA SPECIALTY CHEM	910-801.2493
Steve Lemberg	CPSC/General Counsel	301-504-0980

9/25/97

October 9

Margaret Neily, Engineering Sciences, Andy Ulsamer, Laboratory Sciences, Pat Fairall, Compliance, and other CPSC staff, meeting with representatives of Ciba Specialty Chemicals to discuss their flammability tests of flame resistant fabrics; 1:30 p.m., East West Towers, Room 410 B/C. The meeting was requested by Carl D'Ruiz of Ciba. For additional information contact Margaret Neily, (301) 504-0550. (S) CLOSED TO THE PUBLIC

Rocky

Author: Margaret L. Neily at CPSC-HQ1
Date: 9/29/97 11:07 AM
Priority: Normal
TO: Alan C. Shakin
CC: Margaret L. Neily, Nicholas V. Marchica at CPSC-HQ2, Andrew G. Stadnik at CPSC-HQ2
Patricia A. Fairall at CPSC-HQ2
Subject: Request for closed mtg. approval & Public Calendar notice

TO: Alan Shakin, OGC

FROM: Margaret Neily, Engineering Sciences

This is to request a waiver for a closed meeting with Ciba Specialty Chemicals in order to discuss several issues regarded as confidential business information:

1. customers of their flame retardant chemical, Pyrovatex,

2. the routes of chemical purchase, shipment and application overseas, followed by importation of treated goods into the United States for use in or already in the form of children's sleepwear, and

3. preliminary, unconfirmed results of their testing of treated fabrics with various detergents and their ramifications.

Approve ✓ Disapprove_____

ALAN SHAKIN

9/29/97

CC: Margaret

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Ciba Specialty Chemicals Corporation
North America

Consumer Care

Ciba

July 18, 1997

Ms. Patricia Fairall
Division of Regulatory Management
Office of Compliance
Consumer Product Safety Commision
4330 East West highway
Washington, DC 20207

Via Federal Express

Dear Ms. Fairall:

The purpose of this letter is to reply to your request for information regarding the effects of different laundry detergents on the flammability of children's sleepware treated with Pyrovatex® flame retardant treatment. Below please find our responses to the questions raised in your letter.

1. Do you have any information concerning the effect of any detergent on the ability of fabrics treated with Pyrovatex® to comply with the requirements of the children's sleepware standards (16 CFR Parts 1615 and 1616)? If so, please provide copies of all reports of testing in accordance with the children's sleepware standards.

Our promotional literature for Pyrovatex® (see attachment for item 3, below) indicates that the flame retardant properties of fabrics treated are durable provided that;

- the cellulose fabric has uniform absorbency;
- the product concentration and applications procedures are strictly in accordance with our recommendations; and
- the fabric is not washed in either chlorine containing bleach or with soap-based material.

We are unaware of any other effects other than those associated with soap-based detergents. We are currently in the process of conducting a search of our records in Europe to evaluate this question more thoroughly.

2. Do you have any information to explain why any detergent may adversely affect the ability of fabrics treated with Pyrovatex® to comply with the requirements of the children's sleepware standards. If so, please provide copies of all that information, including copies of all reports of testing in accordance with the children's sleepware standards.

We currently do not have any such information available in the United States. We are in the process of conducting a literature search at the European headquarters of our parent company in Basel and our affiliate, Pfersee Chemie in Germany.

3. Please provide copies of all information which you furnish to purchasers of Pyrovatex® concerning the effect of detergents on the flammability of fabrics treated with Pyrovatex®.

4090 Premier Drive
P.O. Box 2444
High Point, NC 27261-2444

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A copy of the following bulletins are attached:

- "Pyrovatex® CP New - Durability of the flame retardance and care of the goods;"
- "Pyrovatex® CP New - Handbook for technicians;"
- "Pyrovatex® - Fire protection for textiles;" and
- "Safe & Natural - Cotton Pyrovatex® for home textiles.

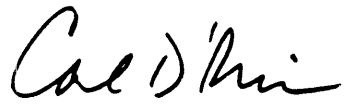
4. Please provide the names and addresses of all purchasers of Pyrovatex® in the United States that manufacture children's sleepware or fabrics intended for use in children's sleepware.

We are currently unaware of any companies which purchase our product for the manufacture of children's sleepware in the United States. We are aware, however, that the following companies have imported fabrics treated with Pyrovatex® into the United States:

- Nordstom of Seattle, WA;
- My Boy Sam of New York; and
- Franco Manufacturing of Metuchen, NJ.

As part of our effort to assist the CPSC in its investigation of this issue Ciba will further research this matter with our colleagues at Pfersee Germany and other business segment associates in the United States. We would very much like to present our findings to the CPSC and request that a formal meeting be arranged to discuss these issues at your earliest convenience. Please contact the undersigned at (910) 801-2493 if you have any further questions.

Sincerely,



Carl D'Ruiz
Director, Regulatory Affairs and Product Stewardship

attachements

cc: M. White
D. Parkes
E. Finkelman
K. Rowe

COTTON ®Pyrovatex

neets international FR standards for urnishing fabrics:

he flame retardancy of COTTON-PYROVATEX can e varied to meet the requirements of different tandards.

xperience shows that COTTON-PYROVATEX neets most FR standards in Europe, America and he A/P Region.

NATURAL FIBRE WITH INHERENT SAFETY

PFERSEE ciba

PYROVATEX is a registered trademark of Ciba-Geigy Limited
TEFLON is DuPont's registered trademark for textile finish

The company behind

COTTON ®Pyrovatex

- Ciba is a world-wide international company whose interests cover pharmaceuticals, agrochemicals and a wide range of industrial chemicals. The manufacturing and research headquarters for textile chemicals is in Langweid, Southern Germany:

  Pfersee Chemie GmbH
  Rehlinger Str. 1
  D-86462 Langweid a. Lech
  Marketing Center Home Textiles/Technical Textiles
  Telephone: + 49 8230 41 380
  Fax: + 49 8230 41 103
- Ciba and PFERSEE work in partnership with customers, manufacturers and specifiers to ensure the finished fabric meets the appropriate FR standard - whether local or international
- For further information please contact your local Ciba office:

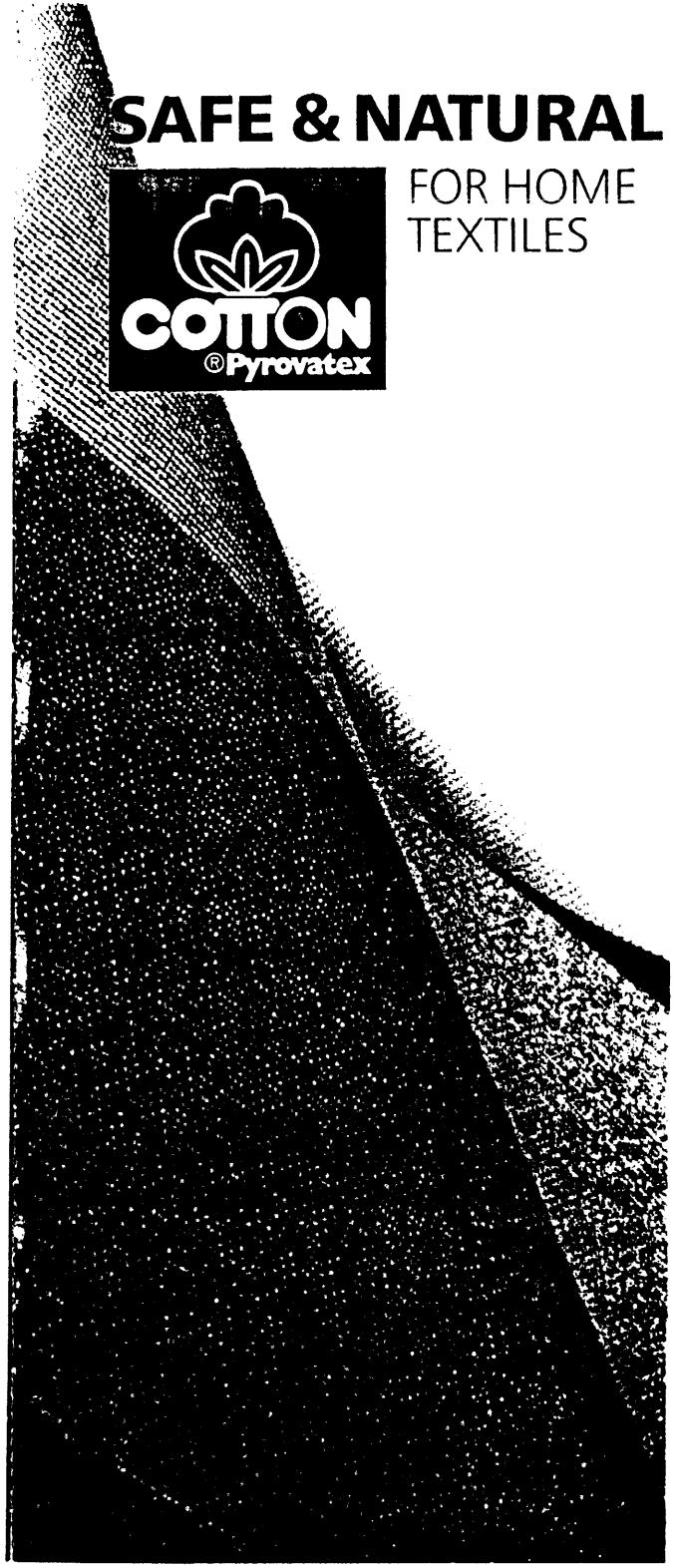
This information was supplied by

Address of the company and contact person to be indicated

SAFE & NATURAL

COTTON ®Pyrovatex

FOR HOME TEXTILES



COTTON ®Pyrovatex

eans SAFETY

over 30 years COTTON-PYROVATEX has been rketed for use on furnishings in both the domestic d contract markets to give a safe durable flame-ardant finish on curtains, counterpanes, barrier rics and upholstery.

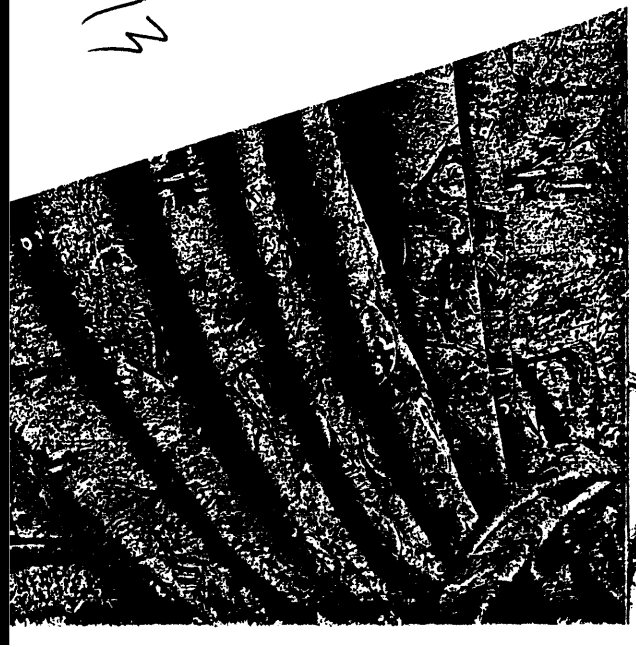
the event of a fire, COTTON-PYROVATEX does not ite but forms a protective carbon shield. It does not m molten droplets which can cause secondary fires.

tton – known to man since Egyptian times, combi-g with today's technology to form a safe durable me-retardant fabric – COTTON-PYROVATEX.

DURABLE

rrectly applied, PYROVATEX finished fabrics will thstand repeated washing up to the boil as well as cleaning.

viding after-care instructions are followed the me-retardant effects are durable for the lifetime of fabric



COTTON ®Pyrovatex

is ECOLOGICALLY APPROVED

PYROVATEX is an organo-phosphorus compound which bonds chemically with cotton to form a safe durable flame-retardant finish.

PYROVATEX has undergone extensive toxicological testing both by the headquarters PFERSEE in Germany and independent test houses. These include skin irritation tests on finished fabric and in all cases it has been shown to be safe to the skin.

Detailed studies have also been carried out to analyse the composition of burning gases, and these have shown to be the same as from pure cotton but in lower quantities.

COTTON-PYROVATEX meets the ÖKOTEX Standard 100.

COTTON ®Pyrovatex

is COMFORTABLE

Cotton is an ideal furnishing fabric because of its drape, fabrics treated with PYROVATEX retain their natural aesthetic handle.

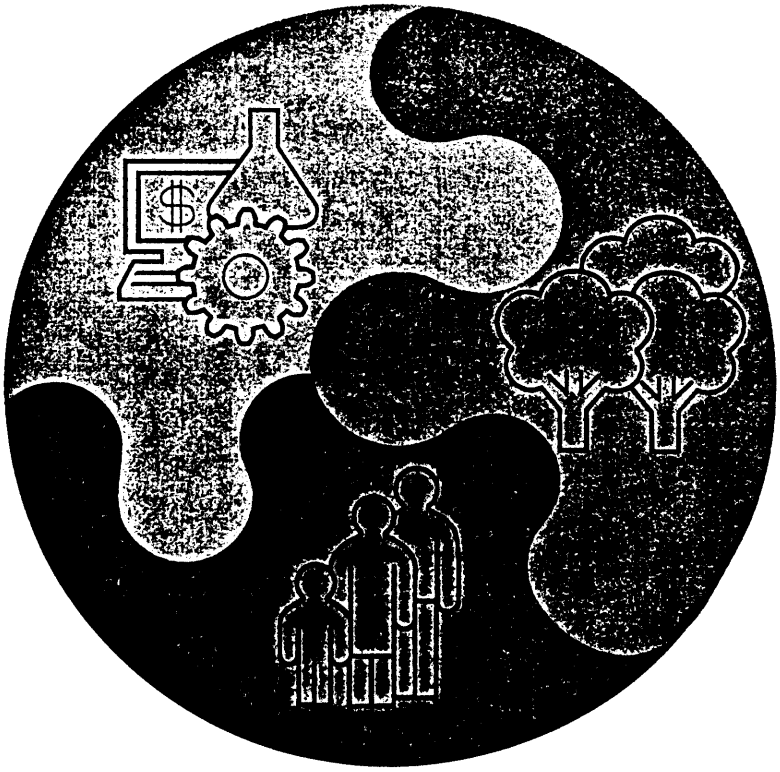
COTTON-PYROVATEX absorbs humidity and does not show any static charge.

Combined with the stain-repellent finish ®TEFLON, COTTON-PYROVATEX is protected against water, oil and dry soiling.

COTTON ®Pyrovatex

Pyrovatex®

Fire protection for textiles



ciba

A Commitment to
ECONOMIC • ENVIRONMENTAL • SOCIAL
RESPONSIBILITY

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ciba

Ciba is an international company with its world headquarters in Basle, Switzerland. It was known until 1992 as Ciba-Geigy, having been formed by the merger of these two companies in 1970. The company's origins go back 200 years when a Basle merchant, J. R. Geigy, included amongst his goods dyes, medicines and tanning agents. Since then, Ciba has expanded into other fields, and today is perhaps best known for its agrochemical and pharmaceutical interests.

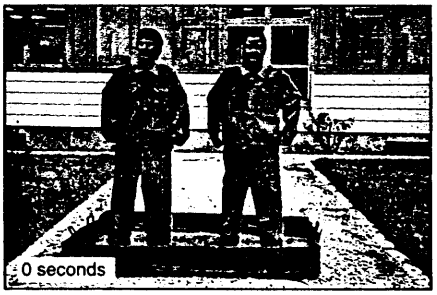
The Textile Products and Chemicals Divisions of the company is involved in the dyeing and finishing of virtually any substance that can be colored — natural and synthetic fibers, leather and paper. The worldwide headquarters for Textile Chemicals is located in Langweid, Germany. Their products cover the range of softeners, silicone elastomers, water repellents, resins, fluorochemicals, fluorescent whiteners and flame retardant chemicals.

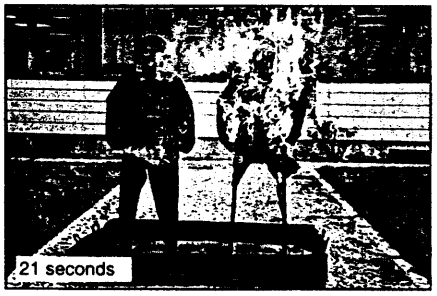
Durable flame retardant cotton with Pyrovatex® CP

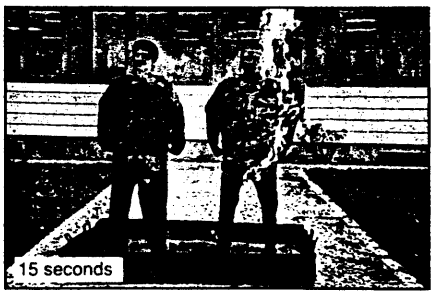
Safe in Production • Safe in Application • Safe in End-Use

Cotton was one of the first fibers used in textiles and now, over 5,000 years later, it remains a leading fiber throughout the world. It is extensively used in both furnishings and apparel and its properties are well documented.

Cotton burns easily and fire disasters remain a constant threat to everybody whether in the home or public buildings. The natural aesthetics of cotton make it an ideal fabric for furnishings such as upholstery, curtains and bedding. Correctly treated with PYROVATEX, cotton becomes a durable flame retardant fabric which will withstand repeated laundering and dry cleaning. Little wonder that, since this was introduced over 20 years ago, many millions of meters of cotton have been processed to ensure added safety not only in the home, but in hospitals, hotels and theatres. It is also applied to workwear for the North Sea Oil Rig workers and is used in America on children's sleepwear. In both cases, not only is durability to washing essential but, as the fabric is worn next to the skin, the product must undergo extensive toxicological testing. The results of these tests show no evidence of skin irritation or sensitization.







The workwear fabric on the left of the sequence has been treated with PYROVATEX CP. The untreated fabric is on the right.

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History

PYROVATEX is a phosphorous-based flame retardant product which was originally used on textiles in hospitals where, following a series of fires in the early 70s, it became mandatory to use curtains, cubicle curtains, counter panes and barrier fabrics which were flame retardant. The flame retardant properties of the fabric have to be maintained even after the fabric has been laundered as many as 200 times. Correctly applied, and laundered on a regular basis, the flame retardant properties of PYROVATEX treated fabrics are maintained.

In the late 1980s fire officers became increasingly alarmed by the number of deaths in the home caused by carelessly dropped cigarettes or matches on to furniture upholstery. The foam used in upholstery was dubbed "killer foam" by the media as the fumes given off during burning were the main cause of death. Today not only are safer foams used, but the upholstery fabrics also have to be flame retardant.

Most printers and finishers have the basic equipment to apply PYROVATEX and, while modifications in many instances are necessary, the product has a proven track record. As a major dyestuff and chemical manufacturer, Ciba has always worked closely with their customers. "Partnership, commitment and quality" are words not used lightly. It is our policy to carry out regular audits with our customers to ensure that correct procedures are followed.

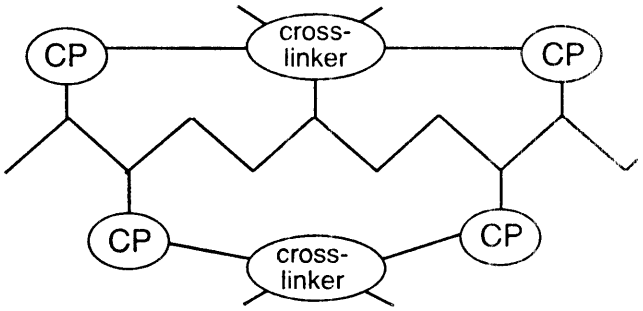
Application

PYROVATEX is applied to the fabric as a chemical addition, that is to say it is not a back-coating system. It is carefully introduced into the cotton fibers and chemically bonds on to the cotton cellulose molecules effectively becoming part of the fiber. In all applications, whether on furnishings, protective workwear, children's sleepwear or military apparel, it is the objective of Ciba to protect the consumer with a product which is safe in the complete chain from production to end-use.

Mode of Action

PYROVATEX is normally added as a final application. But how does it work? When heated, the cellulose starts to decompose at approximately 300°C with the evolution of inflammable gases which ignite at 350°C. Flame retardant finishes act as Lewis Acids and dehydrate cellulose, reducing it to a stable carbon char. This occurs at 250°C; as this is well below the ignition temperature, the fabric does not burn. In effect the flammable portion of the cellulose has been removed before ignition temperature is achieved.

A stable carbon char shield results which often helps to protect materials behind the flame retardant cellulose cover.



Cellulose fiber with bound PYROVATEX® (CP) additionally fixed with a cross-linker

Pyrovatex®

Flame Retardancy in the '90s

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Ciba Vision 2000

Ciba foresees the long term success of its business being dependent upon an equal balance between ecology, economy and social responsibility. Within this vision, the company focuses on ecology as an integral element throughout the selection of raw materials in the Production, Research and Development and Marketing of all its products. As a standard procedure, all products must go through a specially developed approval test which includes ecological screening.

Ecologically Safe Production of Pyrovatex

PYROVATEX is produced in Langweid, Germany at Pfersee Chemie, a fully integrated Ciba group company. Pfersee is generally acknowledged as being one of the most modern and sophisticated chemical plants in Europe. It is approved by the German Federal Emission Control Act and the complete production site is responsible to the local authorities to ensure that all regulations and limits regarding environmental protection are fulfilled.

Ecologically Safe End-Use of PYROVATEX Treated Cotton

The active ingredient of PYROVATEX CP represents a well characterized substance which has been registered by Ciba Pfersee to the responsible European and non-European inventories of chemical substances for many years. The relevant toxicological and ecological properties for PYROVATEX CP have been comprehensively tested on a voluntary basis. The toxicological data shows that the product as such can be regarded as safe. The effects of fabric which have been finished with PYROVATEX have been analyzed through detailed skin irritation tests carried out on human beings. From the results of several hundred, independent tests, there have been no cases of primary skin irritation or skin sensitization registered.

FR Standards

While PYROVATEX CP finishes meet most international FR standards, we must emphasize that flammability performance is dependent on a number of parameters. These would include fabric weight and construction, chemical add-on and application. Therefore, the only way of ensuring that a given fabric will pass a given test is to carry out an individual trial on the fabric concerned, followed by testing, in accordance with the required test methods.

After-Care

As with most textiles, care should be taken with fabrics that have been finished with PYROVATEX. We recommend that PYROVATEX treated fabrics be washed frequently.
Under no circumstances should hypochlorite bleach be used to remove stains or excessive dirt. Acid rinses should also be avoided as these may reduce effectiveness. The use of a detergent as opposed to a pure soap powder is recommended. Correctly and carefully treated the flame retardant properties of PYROVATEX will last the life of the fabric.

ciba

Ciba Textile Products Division
P.O. Box 18300
Greensboro, NC 27419-8300
Phone: 1-800-334-9481

Pyrovatex®

Flame Retardancy in the '90s

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PYROVATEX is a registered trade mark of Ciba-Geigy Corp. The use of the name PYROVATEX in any literature appertaining to fabrics treated to meet an FR specification may only be used with the permission of Ciba-Geigy Corp.

Pyrovatex handbook

Durability of the flame retardance and care of the goods

CIBA–GEIGY

PFERSEE

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1. General

»PYROVATEX CP« was introduced during the 1960s as a product which, when applied in accordance with recommended procedure, would produce flame retardant effects on cellulose fabric. These effects withstand repeated laundering and dry cleaning treatments.

CIBA-GEIGY/Pfersee are committed to the continuous improvement of its products and services. »PYROVATEX CPnew« has been developed under this quality program and will replace the »PYROVATEX CP / CP conc.« brands. »PYROVATEX CP / CP conc. and CPnew« have the same active ingredients and produce the same effects.

The flame retardant effect is related to the amount of phosphorus on the fabric and the resistance to laundering and dry cleaning is dependent upon the phosphorus remaining fixed to the fabric after such treatment.

»PYROVATEX CPnew« is applied together with a cross-linking agent and orthophosphoric acid, and reacts directly or indirectly with the cellulose fiber. The fabric is subsequently neutralized and residue removed by washing to minimize the risk of hydrolysis of the finish during the life cycle of the fabric.

The product has been used successfully for many years, particularly in the workwear and drape segments, where the effects have shown resistance to repeated washing without loss of flame retardant properties.

In recent years, we have used the term 'permanent' in our promotion data to describe the chemical bond between »PYROVATEX CP new« and cellulose, and also the flame retardant properties of fabrics treated with the product, provided that:

- the cellulose fabric has a uniform absorbency
- the product concentration and application procedures are strictly in accordance with recommendation
- the finished fabric is not washed in either chlorine containing bleach or with soap-based material.

The use of the term 'permanent' has also proved a valuable promotion aid, particularly to customers at the end user interface, to differentiate an effect which can be shown to withstand more than 50 washes at the boil from other finishes which are referred to as

- 'durable but are removed after several launderings
- 'non-permanent' effects, which are removed after a single wash.

Recent legislation in the UK relating to the fire properties of upholsterd furniture has extended the market for flame retardant fabrics from industrial institutions, and public buildings, where the emphasis is on the resistance of the finish to repeated laundering with clear guidelines for washing procedures, into the home furnishing and furniture sector where the fabric may not be subjected to washing and where there are no guidelines in the legislation for fabric after care.

An EC (European Community) guideline for a new product liability statute has been in existence since 1985, and is currently being integrated into the legislation of the individual member states. Under the terms of the new W.German Product Liability Act all manufacturers contributing towards the creation of an end-product are jointly liable for damage suffered by a customer, and we believe similar legislative requirements may be introduced by other countries. In view of these develop-

ments CIBA-GEIGY defined a project for the Finishing Center in Augsburg to examine the influence which a change in use may have on the known properties of fabric treated with »PYROVATEX CPnew«.

2. The durability of »PYROVATEX CPnew« finishes

The findings of this study are given in the appendix and are summarized:

There is evidence that fabrics which have been treated with »PYROVATEX CPnew« and stored or used for prolonged periods without washing will hydrolyze and that the hydrolysate can be removed by washing.

This means that fabrics may continue to exhibit flame retardant properties in the unwashed state, but subsequent laundering could remove phosphorus from the fabric and reduce the flame retardant properties below the standards expected of the fabric.

There were indications from tests carried out on fabrics which have been finished and stored in EC-countries that hydrolysis can occur at the following rates, on fabric which has not been washed after finishing.

- **about 10% hydrolysis 2 years**
- **about 20% hydrolysis 5 years**
- **about 40% hydrolysis 8 years**

The hydrolysis of the finish on fabrics which were washed within 1 – 2 years appeared to be contained at 10%.

Therefore, we will withdraw the term 'permanent' from our literature, because the term 'permanent' does not reflect the precise behavior of the chemical bonding between »PYROVATEX CPnew« and cellulose fabrics.

There is a minimum level of fixed phosphorus necessary to meet the known international standards for drapes, workwear, bed linen and upholstery.

It is imperative to include a safety margin of at least 20% above the minimum requirement which must be calculated in any »PYROVATEX CPnew« formulation.

These findings require a change in the market approach.

Within the framework of the EC Guidelines for product liability statute a producer using »PYROVATEX CPnew« to achieve flame retardant effects on cellulosic fabrics must inform his customers in a suitable way (e. g. by labelling) about the behavior of the finish.

The user of »PYROVATEX CPnew« must not make claims relating to the properties of the product which differ from the information given in the appendix.

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3. Use of care symbols

Where the after care-instructions and / or labelling for the fabric after care use the International Symbols it is important that these symbols are qualified.

3.1 Qualification of the symbols

Symbol	Required phrase	Note
	• Do not use soap-based material • Do not acid rinse	Washing temperature adjustable up to 95 °C, depending on goods
		Avoid treatment with hypochlorite
		Dry cleaning feasible in chlorinated and fluorinated hydrocarbons with or without added water
	• Avoid ironing or pressing with open steam	Ironing temperature depends on goods
	• Avoid overdrying, dry low heat	Suitability for tumbler drying depends on goods
Shampoo	• Use 'dry' foam only	

3.2 Use of the symbols

End-use: drapes/curtains, loose and fitted covers

The standard which the fabric is claimed to meet is

- Do not use soap-based material
- Do not acid rinse

- Avoid ironing or pressing with open steam

- Avoid overdrying dry low heat

Annual washing necessary to avoid heavy soiling and to maintain the flame retardant properties.

End-use: work-clothing

The standard which the fabric is claimed to meet is

- Do not use soap-based material
- Do not acid rinse

- Avoid ironing or pressing with open steam

- Avoid overdrying dry low heat

Frequent washing necessary to avoid heavy soiling and to maintain the flame retardant properties.

End-use: fixed upholstery

The standard which the fabric is claimed to meet is

Annual cleaning/dry shampoo treatment necessary to avoid heavy soiling and to maintain the flame retardant properties.

These are only examples. The symbols have to be adapted in each single case.

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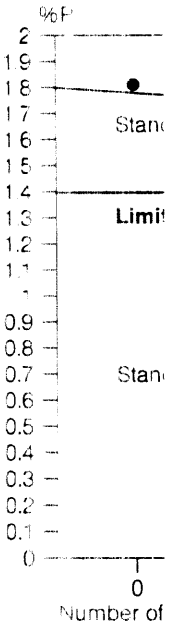

Fig. 1: Was

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4. Appendix

Fastness of »PYROVATEX CPnew« – applied on 100 % Cotton – under various conditions encountered in the environment and during use

4.1 Test carried out on recently finished fabrics

4.1.1 Fastness to washing

Figure 1 shows that washing reduces the phosphorus content very little, even when carried out at 95 °C.

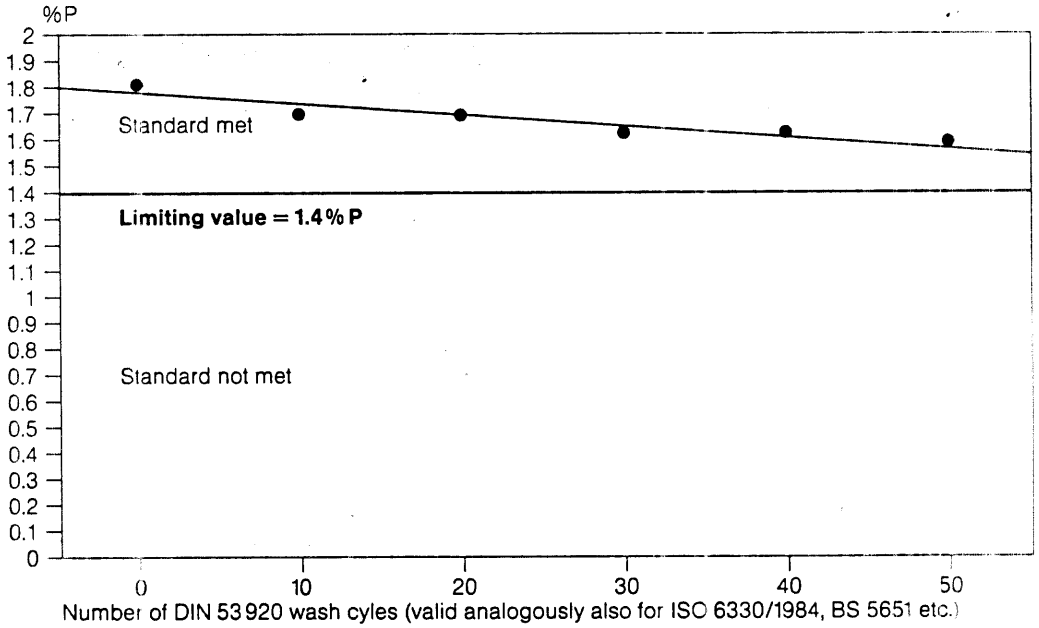

Fig. 1: Wash fastness of »PYROVATEX CPnew« applied on 100 % CO

»PYROVATEX CPnew« is very resistant to washing at all temperatures up to 95 °C.

4.1.2 Fastness to dry cleaning

Figure 2 shows that dry cleaning with a solvent including systems charged with detergent and water, does not affect the flame retardant properties of »PYROVATEX CPnew«, provided that the dry cleaning process is carried out correctly.

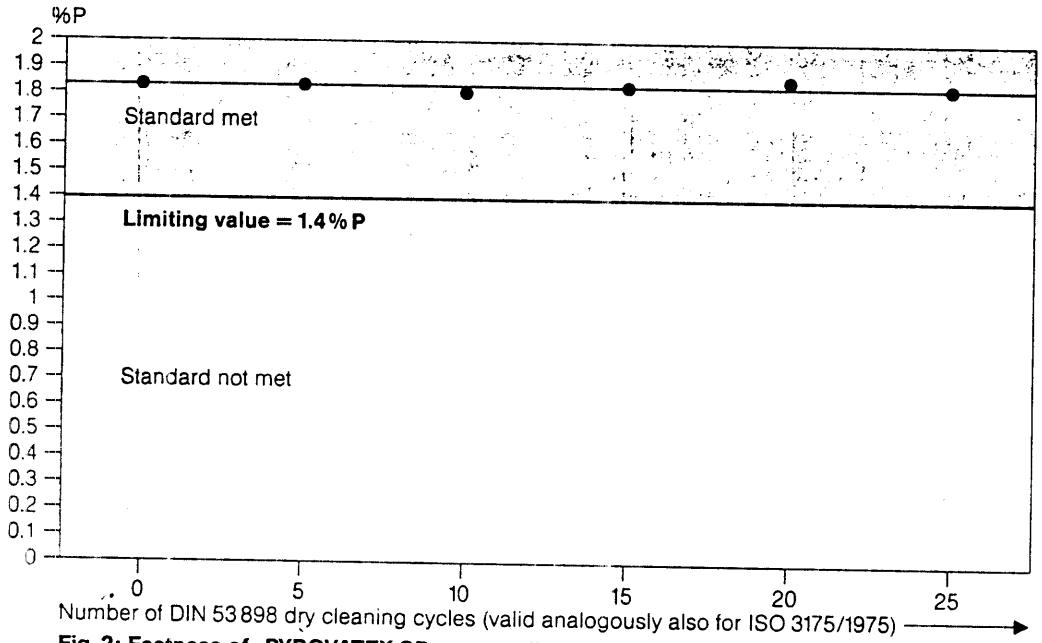

Fig. 2: Fastness of »PYROVATEX CPnew« applied on 100 % Cotton in dry cleaning

»PYROVATEX CPnew« is fast to dry cleaning.

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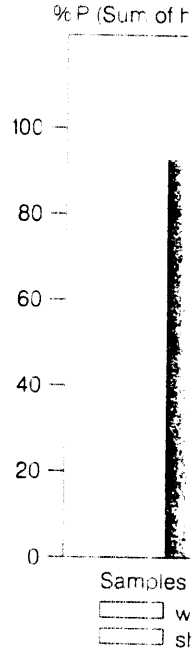

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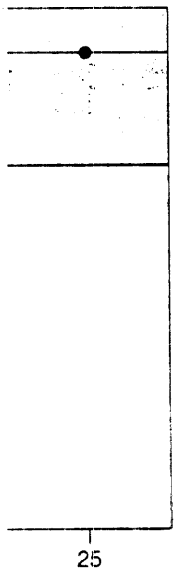

4.2 Examination of fabrics which have been stored after finishing

»PYROVATEX CPnew« can hydrolyze under acidic conditions, and for this reason, it is imperative that the final pH of fabrics after finishing should be slightly alkaline. An acidic pH must be avoided.

The amount of phosphorus remaining fixed to the fabric depends on the after care treatment of the fabric (washing – dry cleaning – shampooing).

Figure 3 illustrates the influence of the different treatments on the removal of the »PYROVATEX CPnew« hydrolysate from the fabric.

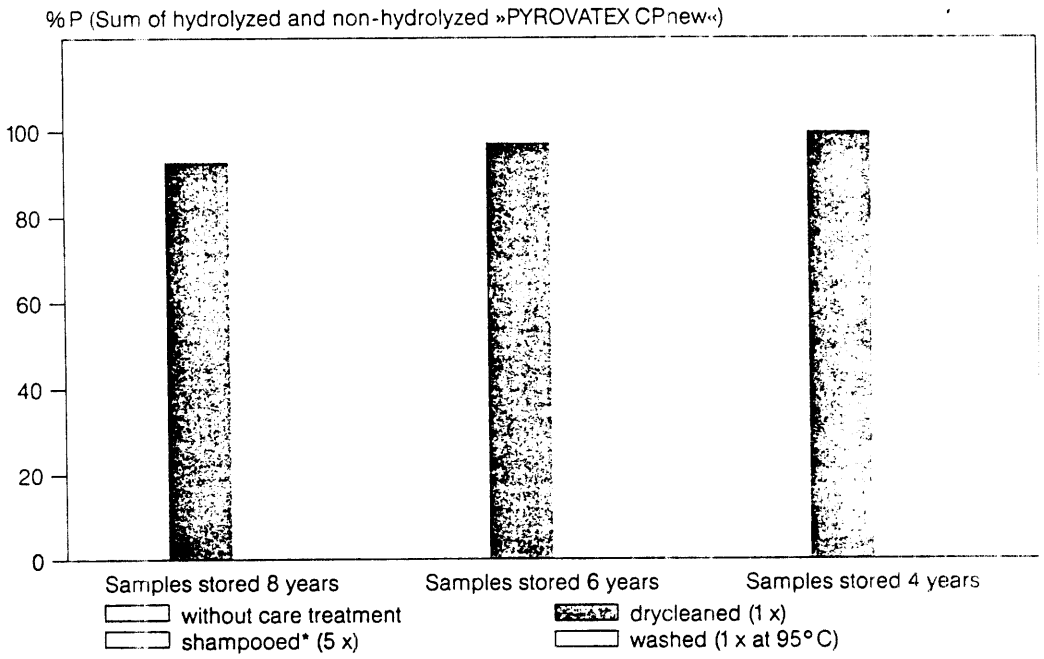

Fig. 3: Influence of care treatment on removal of hydrolyzed portion of »PYROVATEX CP«

Tests recently carried out indicate that the finish on fabrics treated in accordance with the above recommendation can hydrolyze unter certain conditions.

It can be seen that dry cleaning or shampoo* treatments remove only traces of the »PYROVATEX CPnew« hydrolysate and if fabrics are subjected to these methods of

*

No mandatory method has been found for testing shampooing. The results shown in figure 3 were obtained by the following method:

• dissolve 80 g/l light-duty washing powder in warm water • foam using a sponge • apply 'dry' foam to the goods (measured moisture uptake 70–100 %) • rub foam into goods by wiping 5 times each in 2 directions, the sponge picking up the soil • air-dry the goods

after care, it is immaterial whether the »PYROVATEX CPnew« is firmly bonded to the fibre or is present in the hydrolyzed state.

If the fabrics are washed and the hydrolysate removed, the flame retardant effect can be reduced below the standard of performance expected of the finish.

Figure 4 illustrates the extent of hydrolysis on numerous samples from bulk production which had been stored for several years in different European countries.

Afther 3 years storage 10 – 20% of the fixed amount of phosphorus (%P) has been hydrolytically degraded and can be measured by subsequent rinsing and/or washing.

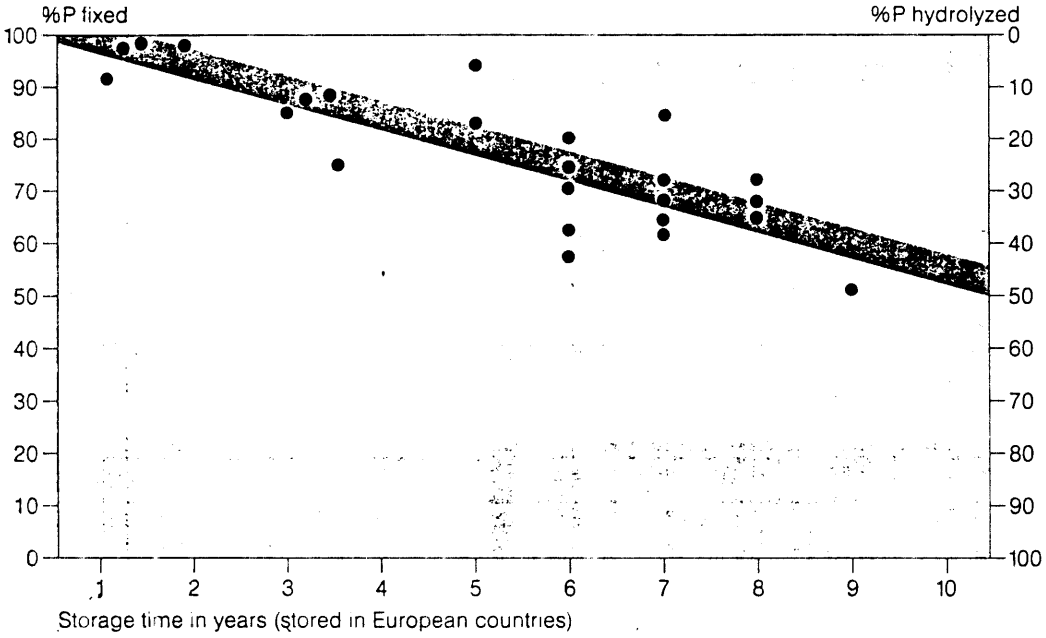

Fig. 4: Influence of storage time on hydrolysis of »PYROVATEX CP« applied on 100% Cotton

Fabrics/goods which have been stored for prolonged periods should be washed before use and examined to determine whether the amount of phosphorus on the fabric is sufficient to achieve the specific performance standards expected from the fabric.

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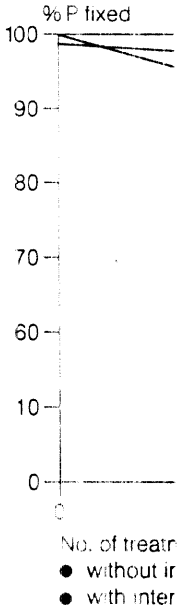

Fig. 5: Influ appl

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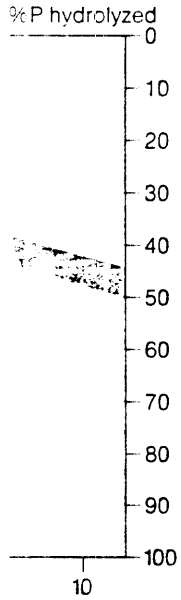

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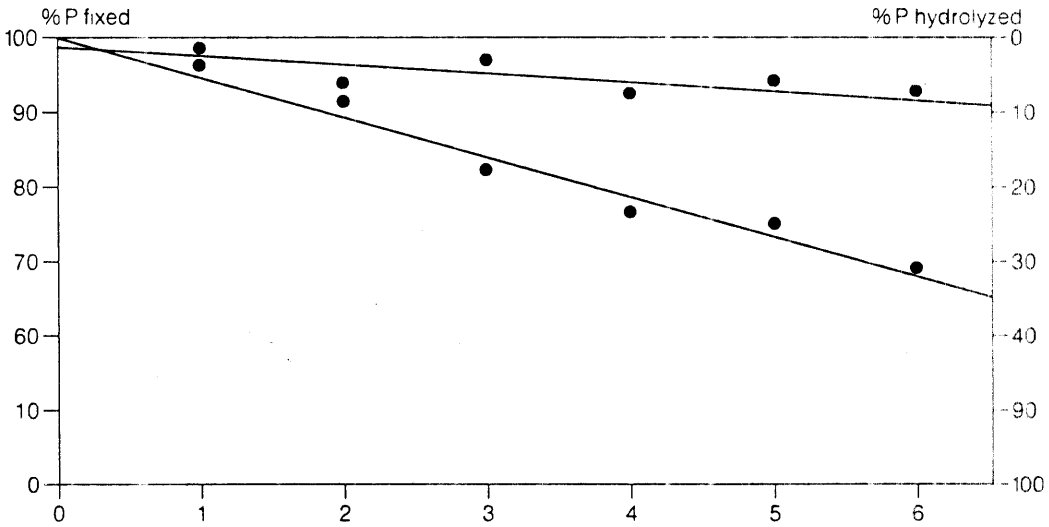
4.3 Laboratory tests to determine hydrolysis



No. of treatment steps according to AATCC Test Method 26-1983

- without intermediate wash
- with intermediate wash

Fig. 5: Influence of an intermediate wash on hydrolysis of »PYROVATEX CPnew« applied on 100% Cotton

4.3.1 Simulation of hydrolysis conditions by AATCC Test Method 26-1983.

This test was selected because it permits varied assessment of hydrolysis. It will be noted from figure 5 that, without intermediate washing, hydrolytic degradation takes place. But if the goods are washed between the treatment steps called for in the AATCC test, hydrolytic degradation is greatly reduced.

Hydrolysis can be interrupted by regular washing.

4.3.2 Influence of moisture content on hydrolysis

To determine the effect of moisture on hydrolysis, goods finished with »PYROVATEX CP new« are treated:

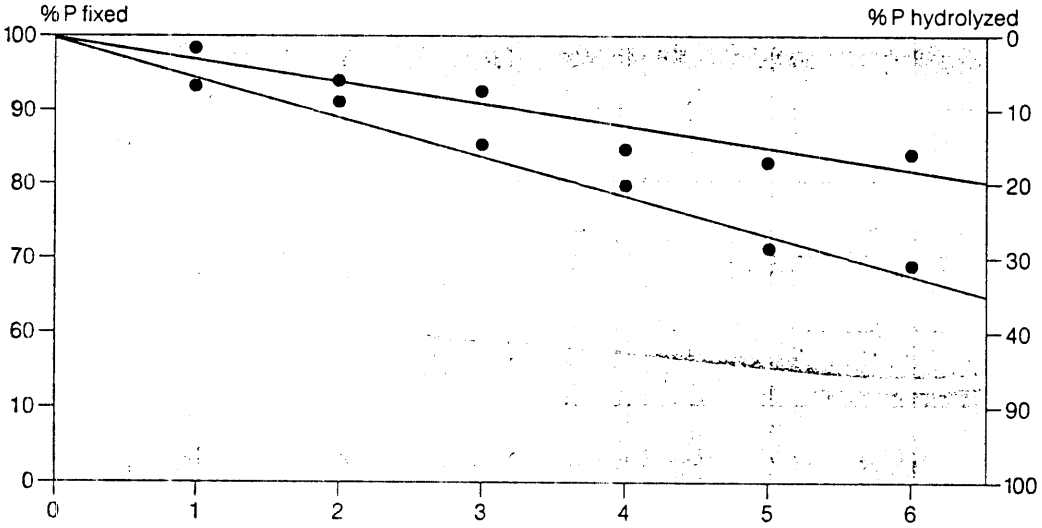
- as specified in AATCC Test Method 26-1983
- by a modified AATCC Test Method 26-1983 (without steam and hence moisture)

It can be seen from figure 6 that a high moisture content increases the rate of hydrolytic degradation.

To reduce hydrolysis, therefore, the goods should be packaged airtight and accompanied by a drying agent.

4.3.3 Influence of intense sunlight

The bond between »PYROVATEX CPnew« and cellulose was only marginally impaired after exposure to the Xenotest 1200 in excess of 100 hours, when the correct dyestuff selections were made.



No. of treatment steps according to AATCC Test Method 26-1983

- without moisture
- with moisture

Fig. 6: Influence of moisture on hydrolysis of »PYROVATEX CPnew« applied on 100% Cotton

Furthermore, steam irons and steam presses should not be used.

In a few cases some dyestuffs, however, may adversely influence the finish. Preliminary trials are advisable.

Hydrolytic degradation during storage is closely related to the moisture present.

Dry, low temperature storage is recommended.

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Pyrovatex CP new

Handbook for technicians

CIBA–GEIGY

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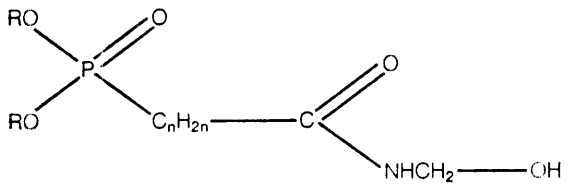
Uses

»PYROVATEX CPnew« is a flame-retardant finish for textiles of cellulose fibres and fabric blends with a synthetic component of up to 15% (low blends). The effects are resistant to washing at the boil and dry cleaning, provided the care instructions are observed (see booklet "PYROVATEX CPnew – Durability of the flame retardance and care of the goods".

Chemistry

»PYROVATEX CPnew«, is based on a dialkylphosphonocarboxylic acid amide with the general formula:



»PYROVATEX CPnew«, which is preferably used together with methylolamine precondensates, reacts with the hydroxyl groups of the cellulose. Any unfixed »PYROVATEX CPnew« or acid from the catalyst is removed by alkaline washing off – an integral step in the finishing process.

»PYROVATEX CPnew« is different from other flame-retardant finishing systems in which resistance to washing is mainly due to enlargement of the molecules of the finishing agent. Moreover, »PYROVATEX CPnew« also differs from flame-retardant finishing products for synthetic fibres in its chemistry and the way it bonds to the fibre

Mode of action

If flames or heat come into contact with the flame-retardant finished cellulose, a carbon scaffold is formed by dehydration of the cellulose, counteracting heat penetration and the spread of fire. In contrast to untreated cellulose, almost no flammable gases are formed by pyrolysis and this stops combustion

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Checklist for optimum application of »PYROVATEX CPnew«

Substrate

Weight per unit area: must not be less than 150 g/m².

Composition: cotton, viscose, linen.
Any synthetic component must not exceed 15% (intimate blend with cellulose) if the finished goods are required to pass a vertical test with edge flame application.
Higher synthetic fibre contents are feasible for goods required to pass horizontal and surface flame impingement tests.

Dyeing/printing: Preliminary trials should be carried out to ascertain whether the dyes used are suitable for a PYROVATEX finish (shade, fastness, effect of pigment in pigment dyeing and printing). Sulphur black dyeings must be thoroughly rinsed before the finish is applied. Tips are given in our booklet 'Fastness properties of dyeings finished with »PYROVATEX CPnew«'.

Absorbency: The goods must be suitably pretreated (desized, scoured) to ensure good absorbency. We advise against oxidative desizing (for example Na-persulfate) because the tenacity is thereby reduced.

pH: The goods must be free of alkali and other extraneous matter and have a pH of 5–7. The pH must on no account be alkaline.

Machinery required

Pad mangle/impregnation trough, permitting a long dip.

Stenter with overfeed and efficient ventilation, and which can be heated up to 130 °C (170 °C if used for curing).
Batching device at exit.

Curing oven

Open width washing machine (5 boxes or more), winch or jig

SANFOR *machine,* if necessary.

Process control

Recipe
The amount of »PYROVATEX CPnew« necessary depends on the standard specification to be met, the fibre, the weight per unit area and the structure of the goods, and must be determined by means of preliminary trials.

Ultratex and Turpex products are the softening agents recommended for use with »PYROVATEX CPnew«.

Lyofix CHN is the best cellulose crosslinking resin and should generally be used. For a softer handle and/or low-formaldehyde finishes, it can be replaced by Lyofix MLF new and/or partially by Knittex products, e.g. Knittex FRC.

For finishing cotton fabrics, phosphoric acid is the preferred catalyst for optimum results.

Liquor pick-up not less than 70%.

Drying
Tension, temperature, residual moisture, plastic film wrapping if curing is not to follow immediately, stenter ventilation, nonwoven filter if necessary.

Curing
Temperature, machine ventilation and nonwoven filter if necessary.

Washing off
neutralization time/temperature
alkali addition
adequate rinsing
pH of goods

Check

The finished goods must be tested for flame retardance in accordance with the relevant standards. The durability of the finish is then tested on fabric that has been washed as required to the standard appropriate to the end-use.

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Typical finishing process for »PYROVATEX CPnew«

Suggested recipes

	Standard recipes		Method that produces a softer handle and reduces odour
	A g/l	B g/l	g/l
»PYROVATEX CPnew«	225 - 400[3]	400[3]	225 - 400[3]
Lyofix CHN or MLF new	50 - 80	60	10 - 20
Knittex FRG conc.[1]			40 - 70
Knittex DU-GB[1]		100	
Ultratex FSA[2]	30 - 60		30 - 60
Avivan SO[2]		20 - 40	
Turpex ACN[2]	30 - 60		30 - 60
Tinovetin JU	1 - 2	1 - 2	1 - 2
phosphoric acid 80%	15 - 25	25	15 - 25

[1]) = Knittex FA conc. can also be used, if available
[2]) = can be used according to choice or in combination
[3]) = the amount can be increased if very high flame retardance is called for

Additions to the bath

- »PYROVATEX CPnew«
- Lyofix CHN/Knittex products are mixed with cold water
- Ultratex or Turpex products, diluted approx. 1:1 with water, are added then
- Tinovetin JU diluted in any proportion with water, is added
- The mixture is diluted with cold water to the required volume
- Phosphoric acid, diluted with water, is added last

Impregnation

The goods are impregnated on a pad mangle. Adequate liquor pick-up is essential (70 – 90%, depending on weight and structure of the goods) and can be achieved by a combination of absorbent fabric and long contact of the goods with the liquor (padding speed!).

Drying

- Dry on a stenter with maximum overfeed
- Drying temperature in the first zone 110 °C, in the other zones not more than 130 °C to minimize migration
- The goods should, if possible, be processed in a partial vacuum (air extraction), to avoid unpleasant odours in the work place
- If the goods are not cured immediately, they must be prevented from absorbing moisture from the air by being rolled up and wrapped in plastic film
  Non-cured »PYROVATEX CPnew« finishes are hygroscopic. If the residual moisture on the goods is too high, they may end up with a harsh handle as a result of migration

Curing

In a curing oven: 5 min at 150 °C
On a stenter: 60 – 30 s at 170 °C is enough. It is advisable to check the curing effect at regular intervals.

Note
Drying and curing should be carried out at maximum rate of air replacement. This largely prevents soiling of the machinery. It has also been found useful to fit polyester or fibreglass nonwoven cloths onto the air filter grids. Soiled cloths can, if necessary, be washed off, impregnated with 1% phosphoric acid, dried and used again.
If the goods are to be batched up after curing, it is advisable to cool them below 40 °C, for example by passing the fabric over cooling.

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Washing off

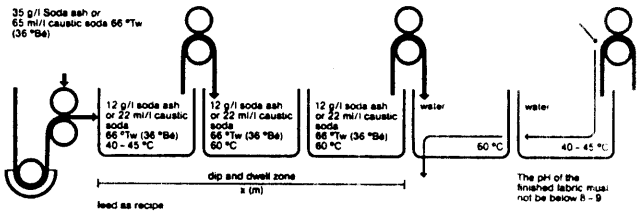
To remove all non-fixed »PYROVATEX CPnew« from the substrate and also the phosphoric acid used as a catalyst for crosslinking, the goods must at all costs be washed off after curing or finishing, preferably within 24 h.
Usually, they are washed off in an open width washing machine with not less than 5 boxes, or in a winch. Smaller lengths of material can be washed off in a jig.

Soda is added to the washing bath to neutralize the goods and to make the goods alkaline and therefore reduce hydrolysis of the finish during storage of the finished goods. With a continuous process using open width washing machines, soda must be added in proportion to the rate of fabric throughput. In order to achieve continuous neutralization, the goods must remain in the alkaline bath for at least 2 min. They must then be thoroughly rinsed with water (to avoid fish odour). After neutralizing and rinsing, they should be slightly alkaline (pH 8 - 9).

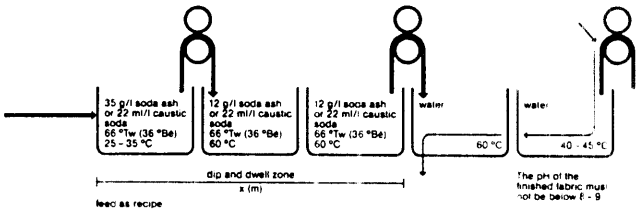
®Pyrovatex CPnew

Washing off on an open-width washing machine

Method 1
padding



Method 2



Washing off on the jig

enter	35 g/l soda ash *or* 65 ml/l caustic soda 66 °Tw (36 °Bé)
	Liquor ratio 5:1 4 ends at room temperature
change liquor	12 g/l soda ash *or* 22 ml/l caustic soda 66 °Tw (36 °Bé)
	4 ends at 60 - 80 °C
rinse	2 x 2 ends at 80 - 85 °C 2 ends at 40 - 45 °C 2 ends cold, with overflow

Washing off on the winch
20 - 40 g/l soda, 45 - 50 °C for 30 min
rinse, 45 - 50 °C
rinse, cold

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Drying

As in the previous stages of the finishing process, minimum tension is also required during drying, which is usually carried out on a stenter with optimum overfeed. Knitgoods can be provided with a top finish on the pad mangle, wet on wet, for example with Sapamine (e.g. KL), Avivan (e.g. SO) or Turpex (e.g. ACR) products.

SANFOR-Treatment

In order to reduce shrinkage and improve handle, the goods can be processed with a SANFOR-Treatment, preferably on a rubber blanket machine. They must contain 10–15% residual moisture when presented to the machine (heavy pressure on rubber blanket). Experience has shown that the SANFOR-Treatment has in general less effect on goods that have been finished with »PYROVATEX CP new« than on untreated fabrics.

Combined flame-retardant and water/oil-repellent finishes

Recipe

300 – 400 g/l »PYROVATEX CPnew«
50 – 80 g/l Lyofix CHN
20 g/l phosphoric acid 80%
40 g/l Oleophobol PF
40 g/l Oleophobol S

- Liquor pick-up: 75 – 100%
- The goods must not contain any products with wetting properties. They can, if necessary, be scoured before being treated, preferably in an acid bath.
- In spite of the poor absorbency of the goods arising from the water-repellent effects, wetting agents must not be used either in the finishing bath or during washing off.
- If high water repellency or protection against chemicals is required, a wet-on-wet aftertreatment (top finish) of the washed off goods is recommended:

  20 g/l Oleophobol PF
  20 g/l Oleophobol S

  and follow with drying and curing.

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»PYROVATEX CPnew« meets international standards

Many countries have their own standards institutions which lay down a standardized burning behaviour and specify it as a standard. »PYROVATEX CPnew« finishes meet the following standards:

Decorative fabrics and curtains

West Germany
DIN 4102 B1 low flammability
B2 normal flammability
For flammability performance, see Test Report PA III 1.21 of the Institute for Construction Technology, Berlin (West), of 5 July 1989
DIN 54336-80
DIN 66082 standard for curtains
classification V-b or V-c

Austria
Oe-Norm B 3800

Switzerland
SNV 198898

France
NF P 92-503 to 507

Italy
CSE RF 1/75
CSE RF 2/75

United Kingdom
BS 5867, type A, B or C
PSA/FR 7

USA
NFPA 701

Protective workwear

West Germany
DIN 66083, standard for classification
DIN 54336-80, standard for implementation

United Kingdom
BS 6249, part 1

Bedlinen

United Kingdom
Hospitals:
FR specification No. 10, ignition source 4 and 5
BS 5867, part 2, point 5.3, FTS 4 und 5

Upholstery fabrics

West Germany
DIN 54336-80

United Kingdom
BS 5852, parts 1 and 2
PSA/FR 3.4.5

Italy
CSE RF 4/83

USA
Aircraft trim: FAR 25.853
Car trim: MVSS 302

France
NF P 92-503 to 507
standard for M classification (M4-M5)

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Importance of a safety margin for the durability of the finish

Different standards call for different levels of flame retardance, i.e. different amounts of »PYROVATEX CPnew« are required to meet them. The flame retardant effect is essentially characterized by the phosphorus content (%P) of the finished fabric. In this booklet, therefore, %P will normally be specified.

Figures 1 and 2 below show that a different amount of fixed phosphorus is needed to meet different flame retardance standards.

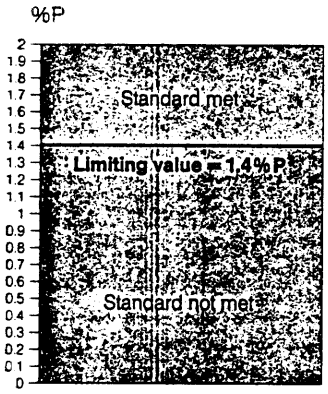

Fig. 1: Limiting value in vertical burning test (ISO 6941, BS 5438, DIN 54336, etc.)

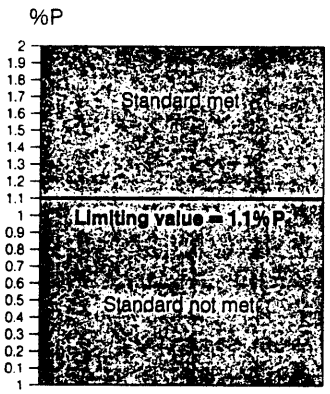

Fig. 2: Limiting value in match test (BS 5852)

The percentage phosphorus content of the goods at which the test is passed is called the limiting value. The two figures above give the limiting phosphorus content which must be exceeded for the specified items to pass a vertical burning test such as DIN 4102 (fig. 1) and the test specified in BS 5852 (fig. 2).

This limiting value is determined by applying increasing amounts of »PYROVATEX CPnew« to the goods and ascertaining the fixed amount of phosphorus present when the test is passed.

If the goods are tested after finishing, the standard is met if the fixed amount of phosphorus is slightly above the limiting value. However we recommend an amount at least 20%, and if technically feasible about 40% more than the limiting value. A safety margin of this order ensures that the »PYROVATEX CPnew« finish will still be effective after a prolonged period of use.

Specimen calculation of amount to apply with allowance for safety margin: The test is passed if the fabric contains 1.4% P. A 20% safety margin means an additional 0.26% phosphorus, a margin of 40% an additional 0.56% phosphorus. The total amount of phosphorus required on the textile would therefore be 1.68% and 1.96% respectively.

This has to be allowed for by an appropriate increase in the amount of »PYROVATEX CPnew« in the recipe.

The higher the amount of phosphorus above the limiting value needed to meet the standard specification, the more durable the flame retardance.

Further information on the durability of the finish and the necessary care of the treated goods is contained in the booklet 'PYROVATEX CPnew – Durability of the flame retardance and care of the goods'.

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Edition 1991

The information given in this pocket card is based on the present state of our knowledge. It shows without liability on our part the uses to which our products can be put.

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U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207

OFFICE OF COMPLIANCE

JUL 02 1997

Assistant Executive Director
Tel: 301-504-0621
Fax: 301-504-0008

Mr. Marshall White, Jr.
President
Consumer Care Chemicals
Ciba-Geigy Corporation
410 Swing Road, P.O. Box 18300
Greensboro, North Carolina 27409

Dear Mr. White:

The U.S. Consumer Product Safety Commission is the federal agency responsible for enforcing the flammability standards under the Flammable Fabrics Act. The staff of the Commission has been considering amendment of the children's sleepwear flammability standards to change the detergent specified by the laundering procedures in those standards. The detergent currently specified by the standards, AATCC Standard Detergent 124, is no longer being manufactured.

In the process of developing the information needed to support amendment of the standards, the Commission staff evaluated the effects of different detergents on the flammability of various items of children's sleepwear. The detergents evaluated included several which are currently marketed for household use. The sleepwear garments tested included some 100 percent cotton garments which reportedly had a Pyrovatex® flame retardant treatment.

Tests conducted by the Commission's laboratory of these garments demonstrated that when they are laundered using some, but not all, of the household detergents evaluated by the Commission, they will fail the flammability test in the sleepwear standards. The summary of results of these tests are enclosed.

Both of the children's sleepwear standards require that garments subject to those standards must be labeled with precautionary instructions to warn against the use of any agents or treatments which are known to cause deterioration of their flame resistance. See 16 C.F.R. 1615.5(a) and 1615.31(b)(1); 1616.6(a) and 1616.31(b)(1). A copy of the standards is enclosed.

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The manufacture for sale, sale, offering for sale in commerce, or importation of any product, fabric, or related material that does not comply with an applicable flammability standard is a prohibited act under section 3 of the Flammable Fabrics Act.

In order to assist us in our investigation of this problem we request your answers to the following questions:

1) Do you have any information concerning the affect of any detergent on the ability of fabrics treated with Pyrovatex® to comply with the requirements of the children's sleepwear standards (16 C.F.R. Parts 1615 and 1616)? If so, please provide copies of all of that information including copies of all reports of testing in accordance with the children's sleepwear standards.

2) Do you have any information to explain why any detergent may adversely affect the ability of fabrics treated with Pyrovatex® to comply with the requirements of the children's sleepwear standards? If so, please provide copies of all that information, including copies of all reports of testing in accordance with the children's sleepwear standards.

3) Please provide copies of all information which you furnish to purchasers of Pyrovatex® concerning the affect of detergents on the flammability of fabrics treated with Pyrovatex®.

4) Please provide the names and addresses of all purchasers of Pyrovatex® in the United States that manufacture children's sleepwear or fabrics intended for use in children's sleepwear.

If you believe that any information responsive to these questions is a trade secret or confidential business information and should not be disclosed to the public, please identify that information in your response. That information then becomes subject to the Commissions procedures for withholding confidential information from public disclosure. Those procedures are described in regulations codified at 16 C.F.R. Part 1015, Subpart B (copy enclosed). If such information is requested from the Commission under provisions of the Freedom of Information Act, your firm will be notified and given the opportunity to respond prior to the Commission's release of the information.

We request that you provide this information as quickly as possible. Please direct your written response to Patricia Fairall, Division of Regulatory Management, Office of Compliance.

If you have questions, you may contact Ms. Fairall at 301-504-0400 X1369.

We appreciate your cooperation.

Sincerely,

David Schmeltzer

Enclosures - Test Result Summary
FFA Regulations
Regulated Products Handbook
Freedom of Information Regulations

LANE
POWELL
SPEARS
LUBERSKY
LLP

Michael H. Runyan
(206) 223-7062

Law Offices

A Limited Liability Partnership Including Professional Corporations

1420 Fifth Ave.
Suite 4100
Seattle, WA
98101-2338

(206) 223-7000

Facsimile:
(206) 223-7107

August 13, 1997

VIA FACSIMILE AND PRIORITY MAIL

Patricia Fairall
Division of Regulatory Management
Office of Compliance
US Consumer Product Safety Commission
Washington, DC 20207

Re: David Schmeltzer Letter to John Whitacre, Nordstrom, Inc.

Dear Ms. Fairall:

This letter is in response to Mr. Schmeltzer's letter of July 2, 1997 to John Whitacre. The letter referenced test results of the effect of certain household detergents on flame retardant treatment in some children's sleepwear garments sold by Nordstrom.

Initially, we apologize for the delay in responding. As you might anticipate, vacations have delayed what would have been a timely response.

Nordstrom takes very seriously its obligation to sell only those garments which comply with applicable standards and which are safe for its customers. Unfortunately, the information which was supplied with Mr. Schmeltzer's letter makes it impossible for Nordstrom to understand the results of the tests conducted by the Commission.

The letter indicates that "some, but not all, of the household detergents evaluated by the Commission" caused the garments to "fail the flammability test in the sleepwear standards." Nordstrom requests that the Commission supply it with the names of the detergents which were tested and those which caused the garments to fail the standards and those which resulted in the garments passing the standards. This information is essential for Nordstrom to determine if it agrees with the Commission's conclusions. This information also will enable it to draft a hang tag with appropriate precautionary instructions should it determine that it agrees with the Commission's conclusions.

Anchorage, AK
Fairbanks, AK
Los Angeles, CA
Mount Vernon, WA
Olympia, WA
Portland, OR
San Francisco, CA
Seattle, WA

London, England

The Commission requests that Nordstrom review the rest of its product line for other children's sleepwear garments that used the same flame retardant treatment. Nordstrom has determined that virtually all of its children's sleepwear garments employ this same flame retardant treatment.

The Commission also requests that Nordstrom stop the production, importation, distribution and sale of the garment styles until the effects of laundering can be fully determined. As you know, these garments have been tested and found to meet all current applicable standards. However, Nordstrom has pulled all children's sleepwear treated with flame retardant from its stores to apply an appropriate precautionary hang tag. Nordstrom requests therefore that the Commission supply it with the names of the offending detergents immediately so that the process of labeling can be further revised if necessary. It plans to have hang tags manufactured to be supplied with those garments so that they are appropriately labeled.

Please direct all future communications regarding this subject to the undersigned

Very truly yours,

LANE POWELL SPEARS LUBERSKY LLP

Michael H. Runyan

MHR:csb
cc: John Whitacre
SEATTLE:245041 v01

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207

OFFICE OF COMPLIANCE

JUL 02 1997

Assistant Executive Director
Tel: 301-504-0621
Fax: 301-504-0008

Mr. John Whitaker
Nordstrom Inc.
1501 5th Avenue P.O. Box 870
Seattle, WA 98101

Dear Mr. Whitaker:

The purpose of this letter is to advise you that the staff of the Consumer Product Safety Commission has obtained information that certain household laundry detergents will cause deterioration of the flame retardant treatment in some children's sleepwear garments sold by your firm.

The staff of the U.S. Consumer Product Safety Commission has been considering amendment of the children's sleepwear flammability standards to change the detergent specified by the laundering procedures in those standards. The detergent currently specified by the standards, AATCC Standard Detergent 124, is no longer being manufactured.

In the process of developing the information needed to support amendment of the standards, the Commission staff evaluated the effects of different detergents on the flammability of various items of children's sleepwear. The detergents evaluated included several which are currently marketed for household use. The sleepwear garments tested included some sold by your firm which are made from 100 percent cotton fabric with a flame retardant treatment. These garments were obtained from Nordstrom stores at Montgomery Mall, Maryland, and Tysons Corner Center, Virginia. The garments were labeled:

G1029 (cupid print) or G4 (my little angel print)
100% COTTON -- FLAME RETARDANT
MACHINE WASH COLD -- TUMBLE DRY COOL -- RN 58665
KD 920740 (cupid print)
or KD 996675 (my little angel print)
MADE IN GREECE (size range)

Tests conducted by the Commission's laboratory of these garments demonstrated that when they are laundered using some, but not all, of the household detergents evaluated by the

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Commission, they will fail the flammability test in the sleepwear standards. The results of these tests are enclosed.

Both of the children's sleepwear standards require that garments subject to those standards must be labeled with precautionary instructions to warn against the use of any agents or treatments which are known to cause deterioration of their flame resistance. See 16 C.F.R. 1615.5(a) and 1615.31(b)(1); 1616.6(a) and 1616.31(b)(1). A copy of the standards is enclosed.

The manufacture for sale, sale, offering for sale in commerce, or importation of any product, fabric, or related material that does not comply with an applicable flammability standard is a prohibited act under section 3 of the Flammable Fabrics Act. Violations of the Flammable Fabrics Act may give rise to actions for administrative or judicial remedies described in Chapter 1 of the Regulated Products Handbook (copy enclosed).

The staff requests that you immediately stop the production, importation, distribution, and sale of these garment styles until the effects of laundering can be fully determined by Nordstrom, and the garments appropriately labeled. The staff requests that you carefully review the rest of your product line for other possible violative children's sleepwear garments. If you disagree with the staff's conclusion that the garments are in violation of the Commission's regulations, you may present your views to the staff. Chapter 2 of the Handbook describes the procedures for doing so.

We request that you respond to this office in writing within ten (10) days of your receipt of this letter outlining your proposed course of corrective action. Please direct your written response to Patricia Fairall, Division of Regulatory Management, Office of Compliance. If you have questions, you may contact Ms. Fairall at 301-504-0400 X1369.

We appreciate your cooperation.

Sincerely,

David Schmeltzer

cc: FOWR

Enclosures - Test Results
FFA Regulations
Regulated Products Handbook

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207

MAY 26 1998

Michael H. Runyan, Esq.
Lane, Powell, Spears & Lubersky
1420 Fifth Avenue, Suite 410D
Seattle, Washington 98101-2338

Re: FOIA Request 709106 on detergents in sleepwear tests

Dear Mr. Runyan:

This responds to your August 22, 1997 Freedom of Information Act (FOIA) request for Commission test results on the laundering of fabrics containing flame-resistant treatments. These results, which were previously made public with the names of the two detergent brands deleted, are now enclosed with the two names included.

Please note the following comments submitted by the manufacturers of the detergents:

Lever Brothers

"Lever Brothers took no part in the detergent testing and we in no way endorse the validity of the test design or the test results. Indeed, we noted certain irregularities in the testing protocol which may have affected the results."

Procter & Gamble

"1. Detergent disclosure adds nothing to the reality that the FR treatment on cotton is NOT effective even after washing with water. This FR finish is not a durable fabric finish.

2. The proposed disclosure would mislead the public into an erroneous belief that the named products have some adverse effect different from the effect of water alone, upon the finish. The chart also suggests that consumers have available detergents which have a lesser effect on FR cotton, such as AATCC 124, but these are not marketed. Even the garments washed in the current 1993 AATCC detergent will fail. There are no current phosphate detergents available for consumer use in the U.S., so the result of passing with the older AATCC 124 phosphate detergent does not indicate a result that consumers could obtain with retail-sale product available in the U.S.

3. In the opinion of our fabric-care experts, it is not likely that the FR-treated cotton children's sleepwear imported into the U.S. could pass after 50 washes with water or with current AATCC 1993 standard detergents. We note that the FFA does not allow sale of garments that fail FFA tests, even with a warning label. It would be misleading to claim that consumers could safely care for imported FR-treated cottons even with a label attached to the garments.

4. It is appropriate for the CPSC and Customs to block imports of any FR-treated cotton children's sleepwear because the FR treatment is not likely to withstand the 50-washing requirement.

5. Ultimately, the focus of this CPSC FFA import investigation is on the treatment as applied to the cottons. Pyrovatex-type finishes are not being applied to cotton for child sleepwear in the U.S. Imported cotton garments are not believed by our experts to be capable of sustaining their claimed FR properties after 50 washes with water or the AATCC 1993 standard detergent. We submitted that comparative testing data to the Commission in the early 1990s, based on tests run at a reputable outside test laboratory. But we withdrew our petition when the maker of Pyrovatex removed it from the U.S. market."

Sincerely,

Todd A. Stevenson
Deputy Secretary and
Freedom of Information Officer

Enclosures

Tide = Brand 1 Brand 1

ALL = Brand 2 Brand 2

Cheer = Brand 3 Brand 3

Surf = Brand 4 Brand 4

MFR/PRVLBR NOTIFIED 7/26/98

No Comments made

Comments attached

Excisions/Revisions

Firm has not requested further notice

2/11/97

SUMMARY
DETERGENT COMPARISON TESTS: NORDSTROM FR COTTON
CHILDREN'S SLEEPWEAR FLAMMABILITY STANDARD

ABRIC	AATCC TEST METHOD 124-1969 ("OLD MACHINES")														
	AVERAGE CHAR LENGTHS FOR EACH SET OF 5 TEST SPECIMENS (0.1 inch)														
	BEFORE WASH	AATCC 124		AATCC 1993		TIDE LIQUID		ALL LIQUID		CHEER POWDER		SURF POWDER		TIDE POWDER	
		AFTER 25 CYCLES	AFTER 50 CYCLES	AFTER 25 CYCLES	AFTER 50 CYCLES	AFTER 29 CYCLES	AFTER 50 CYCLES	AFTER 25 CYCLES	AFTER 50 CYCLES	AFTER 29 CYCLES	AFTER 50 CYCLES	AFTER 25 CYCLES	AFTER 50 CYCLES	AFTER 25 CYCLES	AFTER 50 CYCLES
loral rint nit .9 oz/yd²	3.2		1.0		8.7^{1}	2.3	2.3			8.9^{3}	9.8^{4}				
	1.8		1.7		9.0^{3}	2.6*	2.0			9.1^{1}	9.8^{3}				
	1.4		1.7		9.9^{4}		2.7				10.0^{6}				
	2.4		1.4		9.2^{3}		2.1				9.3^{1}				
upid rint nit .2 oz/yd²	1.7			4.8	8.1^{1}			4.7	2.6			4.4	7.2^{1}		10.0^{5}
	1.6			6.6^{1}	9.6^{4}			3.4	4.0			5.2	6.5^{1}		8.8^{3}
	1.8				10.0^{5}				1.9				6.2		8.2^{2}
	2.0				8.5^{1}				3.8				7.6^{1}		8.5^{2}

Superscript indicates the number of specimens with 10 inch char length.

* Average char length of 4 test specimens.

Test Criteria:
1. The average char length of 5 specimens cannot exceed 7.0 inches;
2. No individual specimen can burn its full length with a 10.0 inch char length.

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____CFR 1615, Sizes 0-6X ___X___CFR 1616 Sizes 7-14

Sample Identification: *"N Kids"* *Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck & short sleeves; White w/Pink & Red Cupid Print Pattern; Knit fabric; FR cotton*

Test Condition: After 50 launderings per AATCC Test Method 124-1969 with Tide powder detergent.

Test Results:

Weight: 8.4 oz/yd² Temp: 20 C 28 %Relative Humidity Load: 0.50 LB.

(1) FRONT

	SL	CL
1.	10.0"	10.0*
2.	10.0	10.0*
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	10.0*

10.0 average char length

(2) BACK

	SL	CL
1.	10.0"	10.0*
2.	10.0	4.8
3.	10.0	9.2
4.	10.0	10.0*
5.	10.0	10.0*

8.8 average char length

(1) & (2) Cut from Garment #1

(3) FRONT

	SL	CL
1.	10.0"	6.8"
2.	10.0	10.0*
3.	10.0	7.7
4.	10.0	6.3
5.	10.0	10.0*

8.2 average char length

(4) BACK

	SL	CL
1.	10.0	10.0*
2.	10.0	6.6
3.	10.0	7.7*
4.	10.0	10.0*
5.	10.0	8.4

8.5 average char length

(3) & (4) Cut from Garment #2

*Specimen burned entire length

Comments: All specimens cut from vertical direction of garments

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
___ CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: *"N Kids"* *Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck &short sleeves; White w/Pink & Red Cupid print pattern; Knit fabric; FR Cotton*

Test Condition: After 25 launderings per AATCC Test Method 124-1969 with Surf powder detergent

Test Results:

Weight: 8.2 oz/yd² Temp: 21 C 34 %Relative Humidity Load: 0.50 LB.

(1) FRONT

	SL	CL
1.	10.0"	3.4"
2.	10.0	4.3
3.	10.0	4.5
4.	10.0	6.9
5.	10.0	3.1

4.4 average char length

(2) BACK

	SL	CL
1.	10.0"	4.8"
2.	10.0	7.1
3.	10.0	4.9
4.	10.0	4.8
5.	10.0	4.6

5.2 average char length

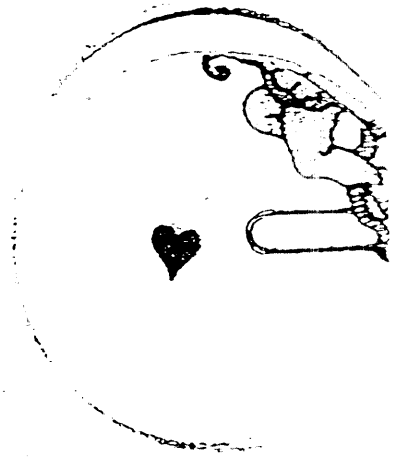
(1) & (2) Cut from Garment #1

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length



*Specimen burned entire length

Comments: All specimens cut from lengthwise direction of garment

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____CFR 1615, Sizes 0-6X ___X___CFR 1616 Sizes 7-14

Sample Identification: *"N Kids" Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck &short sleeves; White w/Pink & Red Cupid print pattern; Knit fabric; FR Cotton*

Test Condition: After 50 launderings per AATCC Test Method 124-1969 with Surf powder detergent

Test Results:

Weight: 8.7 oz/yd² Temp: 22.8 C 36 %Relative Humidity Load: 0.50 LB.

(1) FRONT

	SL	CL
1.	10.0"	5.7"
2.	10.0	5.2
3.	10.0	9.2
4.	10.0	6.1
5.	10.0	10.0*

7.2 average char length

(2) BACK

	SL	CL
1.	10.0"	7.7"
2.	10.0	10.0*
3.	10.0	4.1
4.	10.0	4.6
5.	10.0	6.1

6.5 average char length

(1) & (2) Cut from Garment #2

(3) FRONT

	SL	CL
1.	10.0"	7.7"
2.	10.0	4.9
3.	10.0	4.8
4.	10.0	5.8
5.	10.0	7.6

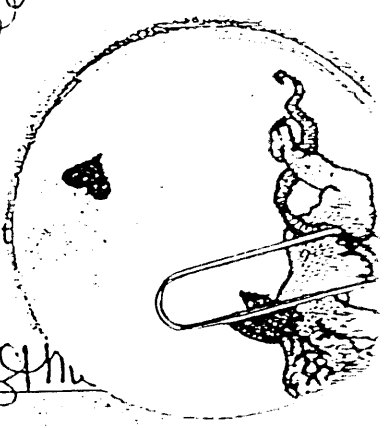
6.2 average char length

(4) BACK

	SL	CL
1.	10.0"	10.0*
2.	10.0	8.5
3.	10.0	5.9
4.	10.0	6.6
5.	10.0	7.0

7.6 average char length

(3) & (4) Cut from Garment #3



*Specimen burned entire length.

Comments: All specimens cut from lengthwise direction of garments

8-5-97

DATA SHEET

CHILDREN'S SLEEPWEAR STANDARD

___ CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14*

Sample Identification: *"N Kids" Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck &short sleeves; White w/Pink & Red Cupid print pattern; Knit fabric; FR Cotton*

Test Condition: After 25 launderings per AATCC Test Method 124-1969 with All liquid detergent

Test Results:

Weight: 8.2 OZ/YD² Temp: 21 C 34 %Relative Humidity Load: 0.50 LB.

(1) ~~FRONT~~

	SL	CL
1.	10.0"	6.1"
2.	10.0	4.5
3.	10.0	4.7
4.	10.0	4.9
5.	10.0	3.2

4.7 average char length

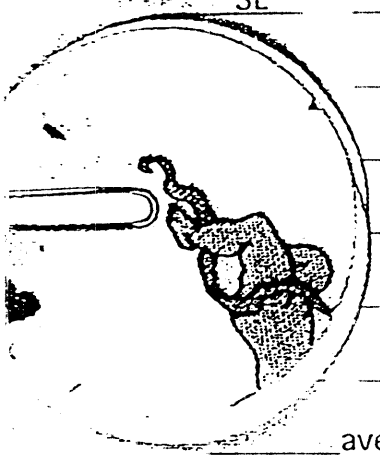
(2) BACK

	SL	CL
1.	10.0"	4.1"
2.	10.0	2.8
3.	10.0	2.9
4.	10.0	3.4
5.	10.0	3.9

3.4 average char length

(1) & (2) Cut from Garment #1

	SL	CL



_____ average char length

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length

*Specimen burned entire length.

Comments: All specimens cut from lengthwise direction of garment

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____ **CFR 1615, Sizes 0-6X** X **CFR 1616 Sizes 7-14**

Sample Identification: *"N Kids" Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck &short sleeves; White w/Pink & Red Cupid print pattern; Knit fabric; FR Cotton*

Test Condition: After 50 launderings per AATCC Test Method 124-1969 with All liquid detergent
Test Results:

Weight: 8.6 oz/yd² Temp: 22.8 C 36 %Relative Humidity Load: 0.50 LB.

(1) FRONT

	SL	CL
1.	10.0"	3.9"
2.	10.0	2.0
3.	10.0	2.7
4.	10.0	1.3
5.	10.0	3.0

2.6 average char length

(2) BACK

	SL	CL
1.	10.0"	3.7"
2.	10.0	4.9
3.	10.0	3.7
4.	10.0	4.3
5.	10.0	3.5

4.0 average char length

(1) & (2) Cut from Garment #2

(3) FRONT

	SL	CL
1.	10.0"	3.3"
2.	10.0	1.3
3.	10.0	1.3
4.	10.0	1.2
5.	10.0	2.3

1.9 average char length

(4) BACK

	SL	CL
1.	10.0"	3.1"
2.	10.0	3.7
3.	10.0	3.8
4.	10.0	4.2
5.	10.0	4.3

3.8 average char length

(3) & (4) Cut from #3 Garment

*Specimen burned entire length.

Comments: All specimens cut from lengthwise direction of garments

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
X CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: "N Kids" Nordstrom

Description: One Piece Garment: Pull-on Style Gown w/ Long Sleeves w/ Ribbing at Wrists; White w/ Multi-Color Floral Angel Print; Knit Fabric; FR cotton

Test Condition: After laundering per AATCC Test Method 124-1969 with Tide, liquid detergent

Test Results: After 29 launderings

Weight: 8.7 oz/yd² Temp: 22.8 C 26 %Relative Humidity Load: 0.5 LB.

(1) Garment A (Size 1446)

	SL	CL
1.	10.0"	2.8"
2.	10.0	2.9
3.	10.0	2.0
4.	10.0	2.4
5.	10.0	1.6

2.3 average char length

(2) Garment B (Size 4)

	SL	CL
1.	10.0"	3.0"
2.	10.0	2.9
3.	10.0	2.3
4.	10.0	2.2
5.	—	—

2.6 average char length

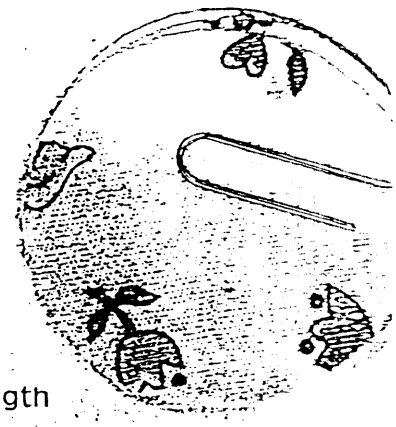
Specimens cut from crosswise direction of sleeves

	SL	CL
1.		
2.		
3.		
4.		
5.		

average char length

	SL	CL
1.		
2.		
3.		
4.		
5.		

average char length



*Specimen burned entire length.

Comments: Fabric specimens cut from sleeves. Garment A specimens cut from lengthwise direction of sleeve.

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
X **CFR 1615, Sizes 0-6X** X **CFR 1616 Sizes 7-14**

Sample Identification: "N Kids" Nordstrom

Description: One Piece Garment: Pull-over style gown w/long sleeves & w/ribbing at wrists; White w/Multi-color Floral print pattern; Knit fabric; FR Cotton

Test Condition: After laundering per AATCC Test Method 124 Tide, liquid detergent
Test Results: After 50 launderings

Weight: 8.7 oz/yd² Temp: 22.2 C 30 %Relative Humidity Load:

① Garment A (size 4/5)

	SL	CL
Front 1.	10.0"	2.6
2.	10.0"	2.4
3.	10.0	0.1
Back 4.	10.0	3.6
5.	10.0	2.6

ogB 1-31-97 2.3 average char length

② Garment B (size 14/16)

	SL	CL
Back 1.	10.0"	1.4
2.	10.0	2.7
3.	10.0	3.7
4.	10.0	0.1
5.	10.0	2.0

ogB 1-31-97 2.0 average char length

③ Garment B (size 14/16)

	SL	CL
Back 1.	10.0"	3.4
2.	10.0	3.1
3.	10.0	3.5
Front 4.	10.0	1.4
5.	10.0	2.2

ogB 1-31-97 2.7 average char length

④ Garment B (size 14/16)

	SL	CL
Front 1.	10.0"	2.1
2.	10.0	2.2
3.	10.0	2.0
4.	10.0	2.3
5.	10.0	1.7

ogB 1-31-97 2.1 average char length

*Specimen burned entire length

Comments: Fabric specimens cut from lengthwise direction

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
___ CFR 1615, Sizes 0-6X ___X___ CFR 1616 Sizes 7-14

Sample Identification: "N Kids" Nordstrom

Description: One Piece Garment: Pull on Style Gown w/Long Sleeves w/Ribbing at Wrists; White w/Multi-color Floral Print; Knit Fabric, FR Cotton

Test Condition: After laundering per AATCC Test Method 124-1969 with Cheer, powder detergent

Test Results: After 29 launderings

Weight: 9.1 oz/yd² Temp: 22.8 C 26 %Relative Humidity Load: 0.5 LB.

(1) From Garment A

	SL	CL
1.	10.0"	6.7"
2.	10.0	10.0*
3.	10.0	7.6
4.	10.0	10.0*
5.	10.0	10.0*

from one sleeve (1–3); from other sleeve (4–5)

8.9 average char length

(2) From Garment B

	SL	CL
1.	10.0"	9.0"
2.	10.0	10.0*
3.	10.0	8.3
4.	10.0	9.4
5.	10.0	8.9

from one sleeve (1–3); from other sleeve (4–5)

9.1 average char length

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length

*Specimen burned entire length.

Comments: Fabric from sleeves tested. All specimens cut from lengthwise direction of sleeves.

DATA SHEET

CHILDREN'S SLEEPWEAR STANDARD

___ **CFR 1615, Sizes 0-6X** X **CFR 1616 Sizes 7-14**

Sample Identification: "N Kids" Nordstrom

Description: One Piece Garment: Pull-over style gown w/lon

w/ribbing at wrists; White w/Multi-color Floral print pattern;

FR Cotton

Test Condition: After laundering per AATCC Test Method 124-196
Cheer, powder detergent
Test Results: After 50 launderings

Weight: 9.4 oz/yd² Temp: 22.2 C 30 %Relative Humidity Load: 0.5 LB

① Garment A (Size 10/12)

	SL	CL
1.	10.0"	10.0*
2.	10.0	10.0*
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	8.8

ont

ofB 1-31-97 9.8 average char length

② Garment A (Size 10/12)

	SL	CL
1.	10.0"	9.0
2.	10.0	9.9
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	10.0*

Back

ofB 1-31-97 9.8 average char length

③ Garment B (Size 10/12)

	SL	CL
1.	10.0"	10.0*
2.	10.0	10.0*
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	10.0*

ont

ofB 1-31-97 10.0 average char length

④ Garment B (Size 10/12)

	SL	CL
1.	10.0"	8.8
2.	10.0	8.5
3.	10.0	9.7
4.	10.0	10.0*
5.	10.0	9.5

Back

ofB 1-31-97 9.3 average char length

*Specimen burned entire length.

Comments: Fabric specimens cut from length-wise direction

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
___CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: *"N Kids" Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck &short sleeves; White w/Pink & Red Cupid print pattern; Knit fabric; FR Cotton*

Test Condition: Original State
Test Results:

Weight: 7.2 oz/yd² Temp: 21° C 24 %Relative Humidity Load: 0.50 LB.

(1) FRONT

	SL	CL
1.	10.0"	0.1
2.	10.0	2.4
3.	10.0	2.1
4.	10.0	2.3
5.	10.0	1.7

ofB 2-3-97 1.7 average char length

(2) BACK

	SL	CL
1.	10.0"	0.1
2.	10.0	1.3
3.	10.0	2.3
4.	10.0	2.5
5.	10.0	1.6

ofB 2-3-97 1.6 average char length

(1) & (2) Cut from Garment #1

(3) FRONT

	SL	CL
1	10.0"	1.9
2.	10.0	0.2
3.	10.0	2.6
4.	10.0	2.2
5.	10.0	2.3

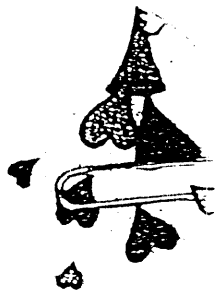
ofB 2-3-97 1.8 average char length

(4) BACK

	SL	CL
1.	10.0"	2.8
2.	10.0	1.7
3.	10.0	2.0
4.	10.0	0.2
5.	10.0	3.4

ofB 2-3-97 2.0 average char length

(3) & (4) Cut from Garment #2



* Specimen burned entire length.

Comments: All specimens cut in lengthwise

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____CFR 1615, Sizes 0-6X __X__CFR 1616 Sizes 7-14

Sample Identification: "N Kids" ~~[illegible]~~

Description: One Piece Garment: Pull-on style Gown w/ Long Sleeves w/ Ribbing at Wrists; White w/ Multi-Color Floral/Angel Print; Knit Fabric FR Cotton

Test Condition: Original State

Test Results:

Weight: 7.9 oz/yd² Temp: 19 c 24 %Relative Humidity Load: 0.50 LB.

(1) (2) from Garment #1

(1) SL	CL	(2) SL	CL
1. 10.0"	5.4"	1. 10.0"	1.1"
2. 10.0	2.7	2. 10.0	1.6
3. 10.0	2.8	3. 10.0	1.9
4. 10.0	1.8	4. 10.0	1.8
5. 10.0	3.1	5. 10.0	2.7
3.2 average char length	ogs 1-16-97	1.8 average char length	ogs 1-16-97

(3) (4) from Garment #2

(3) SL	CL	(4) SL	CL
1. 10.0"	2.2"	1. 10.0"	1.5"
2. 10.0	1.2"	2. 10.0	3.4
3. 10.0	1.6	3. 10.0	2.7
4. 10.0	1.7	4. 10.0	2.1
5. 10.0	0.1	5. 10.0	2.1
1.4 average char length	ogs 1-16-97	2.4 average char length	ogs 1-16-97

*Specimen burned entire length.

Comments: All Specimens cut in lengthwise direction of garment.

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: *"N Kids"* *"Nordstrom"*

Description: *One Piece Garment: Pull-over style gown w/V neck & short sleeves; White w/Pink & Red Cupid Print Pattern; Knit fabric; FR cotton*

Test Condition: After 25 launderings per AATCC Test Method 124-1969 with AATCC Standard Detergent 1993.

Test Results:

Weight: 8.3 oz/yd² Temp: 20 C 28 %Relative Humidity Load: 0.50 LB.

(1) FRONT

	SL	CL
1.	10.0"	3.7"
2.	10.0	4.5
3.	10.0	4.4
4.	10.0	4.2
5.	10.0	7.1

4.8 average char length

(2) BACK

	SL	CL
1.	10.0"	10.0*
2.	10.0	4.7
3.	10.0	5.3
4.	10.0	9.3
5.	10.0	3.8

6.6 average char length

(1) & (2) Cut from Garment #1

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length

	SL	CL
1.		
2.		
3.		
4.		
5.		

_____ average char length

*Specimen burned entire length.

Comments: All specimens cut from lengthwise direction of garment.

Lab

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: *"N Kids"* *Nordstrom*

Description: *One Piece Garment: Pull-over style gown w/V neck & short sleeves; White w/Pink & Red Cupid Print Pattern; Knit fabric; FR cotton*

Test Condition: After 50 launderings per AATCC Test Method 124-1969 with AATCC Standard Detergent 1993.

Test Results:

Weight: 8.6 oz/yd² Temp: 20 C 28 %Relative Humidity Load: 0.50 LB.

(1) BACK

	SL	CL
1.	10.0"	10.0*
2.	10.0	9.2
3.	10.0	6.6
4.	10.0	7.9
5.	10.0	6.6

8.1 average char length

(2) FRONT

	SL	CL
1.	10.0"	8.2"
2.	10.0	10.0*
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	10.0*

9.6 average char length

(1) & (2) Cut from Garment #3

(3) FRONT

	SL	CL
1.	10.0"	10.0*
2.	10.0	10.0*
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	10.0*

10.0 average char length

(4) BACK

	SL	CL
1.	10.0"	9.0"
2.	10.0	10.0*
3.	10.0	7.4
4.	10.0	7.4
5.	10.0	8.6

8.5 average char length

(3) & (4) Cut from Garment #2

* Specimen burned entire length.

Comments: All specimens cut from length direction of garments

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
___ CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: "N Kids" Nordstrom

Description: One Piece Garment: Pull-on Style Gown w/Long Sleeves w/Ribbing at Wrists; White w/ Multi-Color Floral Angel Print; Knit Fabric; PR Cotton

Test Condition: After laundering per AATCC Test Method 124-1969 with Standard Detergent 124
After 50 Launderings

Test Results:
Weight: 8.9 oz/yd² Temp: 20 c 24 %Relative Humidity Load: 0.50 LB.

(1)

	SL	CL
1.	10.0"	0.9"
2.	10.0	1.9
3.	10.0	0.2
4.	10.0	1.9
5.	10.0	0.1

1.0" average char length

(2)

	SL	CL
1.	10.0"	1.3"
2.	10.0	1.8
3.	10.0	1.3
4.	10.0	1.9
5.	10.0	2.4

1.7 average char length

(1) & (2) from Garment #1

(3)

	SL	CL
1.	10.0"	1.7"
2.	10.0	0.2
3.	10.0	2.8
4.	10.0	1.8
5.	10.0	2.2

1.7 average char length

(4)

	SL	CL
1.	10.0"	2.1
2.	10.0	1.3
3.	10.0	0.7
4.	10.0	2.2
5.	10.0	0.9

1.4 average char leng

(3) & (4) from Garment #2

*Specimen burned entire length.

Comments: All specimens cut from lengthwise direction of garment

DATA SHEET
CHILDREN'S SLEEPWEAR STANDARD
____ CFR 1615, Sizes 0-6X X CFR 1616 Sizes 7-14

Sample Identification: "N Kids" Nordstrom

Description: One Piece Garment: Pull-on Style Gown w/Long Sleeves w/Ribbing at Wrists; White w/Multi-color Floral/Angel Print, Knit Fabric

Test Condition: After laundering per AATCC Test Method 124-1969 with Standard Detergent 1993 FR Cotton

Test Results: After 50 Launderings

Weight: 9.2 oz/yd² Temp: 19 C 26 %Relative Humidity Load: 0.50 LB.

(1)

	SL	CL
1.	10.0"	10.0"*
2.	10.0	7.1"*
3.	10.0	9.2"
4.	10.0	9.8"*
5.	10.0	7.6"

ofB 1-15-97
8.7 average char length

(2)

	SL	CL
1.	10.0"	6.8
2.	10.0	10.0"*
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	8.4

ofB 1-15-97
9.0 average char length

(1) & (2) from Garment #1

(3)

	SL	CL
1.	10.0"	10.0"*
2.	10.0	9.6"
3.	10.0	10.0*
4.	10.0	10.0*
5.	10.0	10.0*

ofB 1-15-97
9.9 average char length

(4)

	SL	CL
1.	10.0"	10.0*
2.	10.0	8.1"
3.	10.0	7.9"
4.	10.0	10.0*
5.	10.0	10.0*

ofB 1-15-97
9.2 average char length

(3) & (4) from Garment #2

*Specimen burned entire length

Comments: All specimens cut in lengthwise direction of garments

Lever Brothers Company
390 Park Avenue
New York, New York
10022-4698
Telephone (212) 688-6000

November 5, 1997

CPSC/OFFICE OF THE SECRETARY
FREEDOM OF INFORMATION

1997 NOV 10 P 2:29

Todd A. Stevenson
Deputy Secretary and Freedom of Information Officer
U.S. Consumer Product Safety Commission
4340 East West Highway, Room 502
Bethesda, MD 20814-4408

Dear Mr. Stevenson:

This is in response to your letter of September 25, 1997 regarding FOIA Requests S709105 and S709106. These requests pertain to flammability testing of certain detergent products, including two of those manufactured by Lever Brothers Company. While we have no objection to the release of the testing information to the requester, we do offer the following comments pursuant to Section 6(B)(1) of the Consumer Product Safety Act:

Lever Brothers took no part in the detergent testing and we in no way endorse the validity of the test design or the test results. Indeed, we noted certain irregularities in the testing protocol which may have affected the results.

Sincerely,

Bettina Elias

Bettina Elias
Senior Marketing Attorney

MFR/PRVLBR NOTIFIED 4/30/98
X No Comments made
Comments attached
Excisions/Revisions
Firm has not requested
further notice

Lever Brothers Company
390 Park Avenue
New York, New York
10022-4698
Telephone (212) 688-6000

October 20, 1997

BY FACSIMILE (301) 504-0127

Mr. Todd A. Stevenson
Deputy Secretary and
Freedom of Information Officer
Office of the Secretary
U.S. Consumer Product Safety Commission

Re: FOIA Request S709105 and S709106: Detergent Comparison Tests

Dear Mr. Stevenson:

Per my telephone conversation on October 20, 1997, with Sandra Bradshaw of your office, this confirms that Lever Brothers Company has been granted an extension to submit comments in response to your September 25, 1997 letter addressed to Nancy Schnell. We understand that this extension is until November 14, 1997.

Thank you for this accommodation.

Sincerely,

Megan L. Foster

Megan L. Foster
Senior Marketing Attorney

MLF/DLT

cc:
Nancy Schnell
Deputy General Counsel-Marketing

0033822.01 10/20/97

Unilever

FAX COVER SHEET

Date: October 20, 1997

To: Todd Stevenson

Location:

cc:

Telephone No.:

Fax No.:

Subject:

Comments/Special Instructions:

We are transmitting 1 pages, plus this cover sheet.

UNILEVER UNITED STATES, INC.
Law Department

By: Megan Foster

Telephone No.: (212) 906-4048

Telecopier No.: (212) 318-3680

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