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## Bibliographies on Fabric Flammability

- Wearing Apparel
- Fabrics Used on Beds
- Carpets and Rugs

U.S.  
DEPARTMENT  
OF  
COMMERCE  
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## TECHNICAL NOTE 498

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### **Bibliographies on Fabric Flammability**

Part 1. Wearing Apparel

Part 2. Fabrics Used on Beds

Part 3. Carpets and Rugs

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## Abstract

As recognition of the urgency of the flammable fabrics problem, the Flammable Fabrics Act of 1953 was amended in 1967 to include all items of wearing apparel and interior furnishings. In order to facilitate research and assist in the development of new standards and test methods in these areas, a series of bibliographies is being prepared by the NBS Office of Flammable Fabrics. The first three, on wearing apparel, bed fabrics and carpets and rugs, are included in this Technical Note.

Key words: Apparel; bedding; beds; blankets; carpets; clothing; fabrics; fibers; fire; flame; flammability; flammable; floor coverings; mattresses; pillow cases; pillows; rugs; sheets; springs; wearing apparel.

# Fabric Flammability Bibliographies

## Preface

The Secretary of Commerce, under the 1967 Amendment to the Flammable Fabrics Act, was authorized to conduct research on the flammability of products, fabrics and materials, conduct feasibility studies on reduction of flammability, develop flammability test methods and offer appropriate training in the use of flammability test methods. These responsibilities were delegated to the National Bureau of Standards.

In order to facilitate these four areas of investigation, it is necessary to have a thorough knowledge of what has been accomplished and what is being done by others in the field. Therefore, as part of the program of the Office of Flammable Fabrics, a series of bibliographies is being developed in cooperation with the staff of the Library of the National Bureau of Standards.

Each bibliography deals with a specific facet of the fabric flammability problem, such as flammability of wearing apparel, flammability of carpets and rugs, smoke and noxious products of combustion, etc. These bibliographies are working documents and will be updated and reissued as warranted. All of the items listed will be on file at the National Bureau of Standards and available for inspection by those interested. However, copyright restrictions prevent the distribution of copies of these documents.

Citations for these bibliographies have been collected through a review of abstracting and indexing journals, such as *Chemical Abstracts*, *Applied Science and Technology Index*, *Engineering Index*, and *Business Periodicals Index* for the period 1960 through May 1969, as well as from various footnotes and bibliographies. The elements of each citation will vary with the type of publication cited. Initially, they will include: author or issuing agency; title of article or paper; title of journal; title of book, chapter and chapter number; volume number, issue number; edition other than first; publisher, place and date of publication, inclusive pages; and number of references given. Later versions will include abstracts.

Arrangement is alphabetical by surname of the first author or by title if there is no author. When readily available the AD, PB, NSA or STAR numbers are supplied. Author and subject indices are provided.

The following symbols signify certain types of citations:

- \*—a publication that has not been seen by the compilers of this bibliography.
- \*\*—a short item such as a news note, or subsection of an article.
- \*\*\*—a photocopy or reprint for which the citation has not been verified in all details.

## FABRIC FLAMMABILITY BIBLIOGRAPHIES

The literature on the flammability of fabrics is highly fragmented and difficult to cover completely. Consequently, some items in the literature may have been omitted, and, it would be greatly appreciated if those using the bibliographies would inform the Office of Flammable Fabrics, National Bureau of Standards, Washington, D.C. 20234 of any items of which they have knowledge that are not included.

The first three bibliographies are being published together under one cover in this Technical Note.

## Contents

	Page
Part 1. Wearing Apparel.....	1
Part 2. Fabrics Used on Beds.....	9
Part 3. Carpets and Rugs.....	15
Author Index.....	21
Key Word Index.....	23





## Part 1. Wearing Apparel

### Introduction

Available statistics indicate that many deaths or injuries result from wearing apparel fires every year. Large numbers of publications reflect the general concern with this problem. This concern with clothing fires is not a recent development. Studies of fire retardants for fabrics have been recorded as early as the seventeenth century; an article in the *Scientific American* in July 1861, on the occasion of the tragic fire death of Mrs. Henry Wadsworth Longfellow, urged more attention to the flameproofing of ladies' garments.

This bibliography contains over 180 citations to the literature on flammability of wearing apparel. Only those references related specifically to wearing apparel are included. General treatments on test methods, legislation and retardant treatments will be presented in separate bibliographies.



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## Part 2. Fabrics Used on Beds

### Introduction

Fabrics used in or on beds are involved in numerous fires resulting in many deaths or serious injuries to humans annually. These fires frequently are started by small ignition sources and are characterized by long periods of smoldering. Often the victims have been found anesthetized by the toxic products of this smoldering combustion either with or without burn injuries. In the extreme cases, the combustion products have produced fatalities. In other instances rapidly burning fires have been encountered.

Part 2 contains over 75 citations related to fabric products used in and on beds. These range from mattresses and springs to bedspreads and blankets. The citations are directly related to these finished products; they do not include general references to the materials from which they were made, the combustion products or to general methods of test. These items will be covered in later bibliographies directed specifically to them.



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## Part 3. Carpets and Rugs

### Introduction

In recent years carpets and rugs have become progressively more important as floor coverings in homes and places of gathering and public accommodation. More and more frequently entire floor and stair areas have been covered. Psychophysicists and acoustic engineers are currently recommending carpets for use on walls and ceilings to control sound levels. New fibers and construction techniques have been introduced fairly regularly. As the uses of carpets and rugs increase, their potential involvement in fires also increases. Both consumer and manufacturing interests are keenly aware of the potential hazards that are being imposed by these broader uses of carpets and by the proliferation of new fibers and techniques used in their construction.

Part 3 has been prepared to meet this rapidly increasing interest in flammability of rugs and carpets. It contains approximately 65 citations directly related to this category. General references on test methods, retardant treatments or products of combustion will be covered in other bibliographies of this series.





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## Author Index

### A

ADOLPH, G. A., SWANSON, A. L., 13.  
AGATE, F. J., CRIKELAIR, G. F., OLLSTEIN, R. N.,  
NEWMAN, J. H., SYMONDS, F. C., 3.  
ALLEN, S. J., 3.  
ARTHUR, J. B., 17.

### B

BABCOCK, C. I., 3.  
BAKER, C. A., 3.  
BATTISTA, O. A., 3.  
BRISSETTE, R. S., 3.  
BRISSETTE, R. S., 11.  
BRISSETTE, R. S., 17.  
BUCK, G. S., 3.  
BUGBEE, P., 3.  
BYERS, D. J., 11.

### C

CAMPBELL, J., 17.  
CARPER, J., MAGNUSON, W. G., 6.  
CATTY, R. R., 3.  
CHARLESWORTH, R. G., 4.  
CHURCH, J. M., 4.  
CHURCH, J. M., 11.  
COLEBROOK, V., 4.  
CRIKELAIR, G. F., 4.  
CRIKELAIR, G. F., OLLSTEIN, R. N., NEWMAN, J. H.,  
SYMONDS, F. C., AGATE, F. J., 3.

### D

DEMAREE, J. E., MARCY, J. F., NICHOLAS, E. B., 18.  
DORN, C. W., 4.  
DZHAFAROVA, A. YA., 4.

### E

ELKIND, A. B., 4.

### F

FALLOW, D. C., KELAART, K. I. M., 17.  
FERGER, J. F., 11.  
FISHBEIN, M., 5.  
FREEDLAND, V. D., 17.  
FREEDMAN, H. A., 5.  
FREEDMAN, H. A., 12.  
FREEDMAN, H. A., 17.  
FRY, J. F., HINTON, J. E. L., 5.

### G

GEERING, R. C., 5.  
GOLDBERG, J. B., 5.  
GRAY, V., GROSS, D., LOFTUS, J. J., LEE, T. G., 17.  
GROSS, D., LOFTUS, J. J., LEE, T. G., GRAY, V., 17.  
GRUBBS, O. G., 12.  
GUSHCHINA, K. G., 5.

### H

HAMMACK, J. M., 12.  
HINTON, J. E. L., 17.  
HINTON, J. E. L., FRY, J. F., 5.

### I

INNES, R. L., LARSON, D. L., LEHMAN, S., 6.

### J

JACOBS, E. A., RIETH, B. G., 12.  
JOLIET, P. V., 6.  
JONES, E. B., 6.  
JUILLARD, P., 18.  
JUILLERAT, E. E., 6.

### K

KEARNEY, P. W., 6.  
KELAART, K. I. M., FALLOW, D. C., 17.

### L

LARSON, D. L., LEHMAN, S., INNES, R. L., 6.  
LEE, T. G., GRAY, V., GROSS, D., LOFTUS, J. J., 17.  
LEHMAN, S., INNES, R. L., LARSON, D. L., 6.  
LEHR, E. L., 6.  
LOFTUS, J. J., LEE, T. G., GRAY, V., GROSS, D., 17.

### M

MAGNUSON, W. G., CARPER, J., 6.  
MANCHESTER, H., 6.  
MARCY, J. F., NICHOLAS, E. B., DEMAREE, J. E., 18.  
MARTIN, E. P., 6.  
MCGUIRE, B. B., OGLESBAY, F. B., 12.  
MCGUIRE, J. H., 18.  
MONCRIEFF, R. W., 6.

**N**

NEWMAN, J. H., SYMONDS, F. C., AGATE, F. J., CRIKELAIR,  
G. F., OLLSTEIN, R. N., 3.  
NICHOLAS, E. B., DEMAREE, J. E., MARCY, J. F., 18.  
NIELSEN, E. B., RICHARDS, H. R., 7.  
NUESSLEIN, J., 7.

**O**

OGLESBAY, F. B., MCGUIRE, B. B., 12.  
OLLSTEIN, R. N., NEWMAN, J. H., SYMONDS, F. C., AGATE,  
F. J., CRIKELAIR, G. F., 3.

**P**

PICKETT, A. J., 7.  
PRINDLE, R. A., 7.

**R**

RICHARDS, H. R., NIELSEN, E. B., 7.  
RIETH, B. G., JACOBS, E. A., 12.  
ROBERTS, B., 7.  
ROBERTSON, A. F., 7.

**S**

SANDHOLZER, M. W., 7.  
SAYERS, L. W., 7.  
SAYERS, L. W., 18.  
SEGAL, L., 7.  
SEGAL, L., 12.  
SEGGIE, D., 18.  
SHERWOOD, P. W., 18.

SIMMS, D. L., 7.  
SPIEGELMAN, A., 8.  
STRINGER, H. D., 8.  
SUCHECKI, S. M., 8.

SUMI, K., WILLIAMS-LEIR, G., 12.  
SWANSON, A. L., ADOLPH, G. A., 13.  
SYMONDS, F. C., AGATE, F. J., CRIKELAIR, G. F., OLL-  
STEIN, R. N., NEWMAN, J. H., 3.

**T**

TEMPEST, M. N., 8.  
TRUSLOW, N. A., 18.

**V**

VAN LEEUWEN, J., 8.

**W**

WHITE, W. V., 8.  
WILD, H., 8.  
WILLIAMS-LEIR, G., 8.  
WILLIAMS-LEIR, G., 13.  
WILLIAMS-LEIR, G., SUMI, K., 12.  
WILSON, R., 13.  
WILSON, R., 19.  
WOLLNER, H. J., 8.

**Y**

YERKES, W. G., 8.  
YERKES, W. G., 13.  
YOCKERS, J. R., 8.  
YUILL, C. H., 19.

## Key Word Index

### A

ACA; Flammability; ACMA; 3.  
Accident; Dresses; Fire; Safety clothing; Clothing; 7.  
Accidents; 6.  
Accidents; Flammable; Clothing; 7.  
Acetate; Polyester; 17.  
ACMA; ACA; Flammability; 3.  
Acrylic carpeting; Carpeting; Flammability hazard; 17.  
Acrylic; Carpeting; Fire; 17.  
Acrylic; Modacrylic; Amendment to Federal Specification DDD-C-95; Carpets; Rugs; Wool; Nylon; 18.  
Acrylic; Modacrylic; Federal Specification DDD-C-95; Carpets; Rugs; Wool; Nylon; 18.  
Act; Amend; Flammable fabrics; Protection; 11.  
Act; Federal; Flammable; Fabrics; 8.  
Act; Federal Trade Commission; Rules; Regulations; Flammable Fabrics Act; Fabrics; 4.  
Act; Flammable fabrics; 3.  
Act; Flammable Fabrics Act; Fabrics; 5.  
Act; Flammable Fabrics Act; Apparel; Manufacturers; Fabrics; 5.  
Act; Flammable fabrics; Flammability; Textiles; 3.  
Act; Flammable fabrics; Protection; 17.  
Act; Wearing apparel; Interior; Furnishings; Flammable; Dangerous; 6.  
Agency; Fire; 7.  
Aircraft; Interior materials; Smoke; Gases; 17.  
Aircraft; Interior materials; Flammability; Smoke characteristics; 18.  
Alight; Clothes; 4.  
Amend; Flammable fabrics; Protection; Act; 11.  
Amendment to Federal Specification DDD-C-95; Carpets; Rugs; Wool; Nylon; Acrylic; Modacrylic; 18.  
Apathy; Hazards; Fire hazards; 4.  
Apparel; Fabric flammability; Flammability; 5.  
Apparel fabrics; Burning accidents; Fabrics; Flammability; 3.  
Apparel; Fabrics; Nylon; Flammability; Standards; 7.  
Apparel; Fire; Fabrics; Wearing apparel fire; 3.  
Apparel; Flameproofing; Wearing apparel; 5.  
Apparel; Flammability; Wearing apparel; 5.  
Apparel; Flammability; Wearing apparel; 6.  
Apparel industry; Federal Trade Commission; 3.  
Apparel; Manufacturers; Fabrics; Act; Flammable Fabrics Act; 5.  
Apparel; NFPA; Wearing apparel; Standard; 7.  
ASTM; Flammability section; Tests; 12.  
ASTM; Flammability; Tests; 6.  
Atmospheres; Flammability; Fabrics; Hazardous; 5.

### B

Baby blankets; Blankets; 11.  
Backing fabrics; Tufted carpets; Polypropylene; 18.

Batting; Fire-retardant; Cotton batting; 13.  
Bed blankets; Blankets; Flammability; Synthetic-fibered; 11.  
Bed pad; Hospital; 12.  
Bedding; Cigarette ignition; 12.  
Bedding; Fires; Deaths; Clothing; 8.  
Bedding; Fires; Deaths; Clothing; 13.  
Beds; Men; Money; 12.  
Bedwarmers; Electric blankets; 11.  
BHS; Fibre; 3.  
Blanket; 12.  
Blanket industry; 12.  
Blankets; 11.  
Blankets; Baby blankets; 11.  
Blankets; British standards; Electrically-heated blankets; 11.  
Blankets; Fibers; Wool; 11.  
Blankets; Flammability; Synthetic-fibered; Bed blankets; 11.  
Blankets; Nonclothing fabrics; Fabrics; 11.  
Blaze; Build-up; Sack; 18.  
Box springs; Springs; Mattresses; 12.  
Britain; Fibres; 6.  
British standards; Electrically-heated blankets; Blankets; 11.  
British; Standards; Flammability Fabrics; 7.  
Build-up; Sack; Blaze; 18.  
Burning; 3.  
Burning accidents; Fabrics; Flammability; Apparel fabrics; 3.  
Burning; Burns; Clothing; Fabric fires; Fires; 8.  
Burning; Fabric; Clothing; 8.  
Burns; Children; Clothing; Fabrics; 6.  
Burns; Clothing; Fabric fires; Fires; Burning; 8.  
Burns; Clothing; Fires; 3.  
Burns; Clothing fires; Fires; 4.  
Burns; Clothing; Fires; Public Health; 8.  
Burns; Conference; Clothing burns; Medical conference; 4.  
Burns; Fabrics; 4.  
Burns; Flame retardant fabrics; Conference; Fabrics; 3.  
Burns; Flame retardant fabrics; Fabrics; Conference; 4.  
Burns; Flame retardant fabrics; Fabrics; Conference; 11.  
Burns; Flame retardant; Fabrics; Conference; 17.  
Burns; Flame-retardant; Fabrics; Conference; 7.  
Burns; Flame-retardant fabrics; Fabrics; Conference; 11.  
Burns; Flame-retardant fabrics; Fabrics; Conference; 12.  
Burns; Flame-retardant; Fabrics; Conference; 17.  
Burns; Flammability; Clothing; 5.  
Burns; Ignition; Clothing; 3.  
Burnt; 8.

### C

Carpet backing; 17.  
Carpet backing; Non-flammable carpet backing; 18.

- Carpet fiber; Fiber; 18.  
 Carpet fiber; Fiber; Polypropylene; 18.  
 Carpet; Fire hazard; 17.  
 Carpet flammability; 17.  
 Carpet; Floor covering; 17.  
 Carpet; Manmade fibers; 18.  
 Carpet; Non-flammable carpet; 18.  
 Carpet; Polypropylene; Outdoor-indoor; Federal Specification DDD-C-001173; 18.  
 Carpet; Underlays; 17.  
 Carpeting; 17.  
 Carpeting; Fire; Acrylic; 17.  
 Carpeting; Fire; Polypropylene; 17.  
 Carpeting; Flammability hazard; Acrylic carpeting; 17.  
 Carpeting; Indoor-outdoor carpeting; 17.  
 Carpeting; Indoor/outdoor carpeting; 18.  
 Carpeting; Man-made fibres; Wool; 17.  
 Carpets; 17.  
 Carpets; Combustibility; 18.  
 Carpets; Fibrolane; 17.  
 Carpets; Performance tests; Tests; 18.  
 Carpets; Polyester; 17.  
 Carpets; Rugs; 18.  
 Carpets; Rugs; Finding; Flammability standard; 18.  
 Carpets; Rugs; Wool; Nylon; Acrylic; Modacrylic; Federal Specification DDD-C-95; 18.  
 Carpets; Rugs; Wool; Nylon; Acrylic; Modacrylic; Amendment to Federal Specification DDD-C-95; 18.  
 Carpets; Stair carpets; 18.  
 Carpets; Synthetic fibres; Fibres; 18.  
 Carpets; Weather; Indoor-outdoor carpets; 18.  
 Casualties; Ignition; Clothing; 5.  
 Cellulose nitrate; Eyeglass; Frames; 8.  
 Child; Life; 7.  
 Children; Clothing; Fabrics; Burns; 6.  
 Children; Nightdresses; Regulations; 5.  
 Cigarette ignition; Bedding; 12.  
 Cloth; Flame resistant; Wool; 5.  
 Clothes; 4.  
 Clothes; Aflight; 4.  
 Clothing; Accident; Dresses; Fire; Safety clothing; 7.  
 Clothing; Accidents; Flammable; 7.  
 Clothing; Bedding; Fires; Deaths; 8.  
 Clothing; Bedding; Fires; Deaths; 13.  
 Clothing; Burning; Fabric; 8.  
 Clothing; Burns; Flammability; 5.  
 Clothing; Burns; Ignition; 3.  
 Clothing burns; Medical conference; Burns; Conference; 4.  
 Clothing; Casualties; Ignition; 5.  
 Clothing; Disposable; 3.  
 Clothing fabric; Fabric; Commerce; Flammability; 7.  
 Clothing; Fabric fires; Fires; Burning; Burns; 8.  
 Clothing; Fabrics; Burns; Children; 6.  
 Clothing; Fabrics; Flammability; 6.  
 Clothing; Fire; 3.  
 Clothing; Fire; 4.  
 Clothing fire; Fire; 4.  
 Clothing; Fire hazards; Paper clothing; Hazards; 6.  
 Clothing; Fire; Problem; 6.  
 Clothing; Fireproof Glass; 5.  
 Clothing; Fires; Burns; 3.  
 Clothing fires; Fires; 3.  
 Clothing fires; Fires; Burns; 4.  
 Clothing; Fires; Hydrocarbons; 7.  
 Clothing; Fires; Public Health; Burns; 8.  
 Clothing; Fires; Survey; Fatal; 6.  
 Clothing; Fires; Tragedy; 7.  
 Clothing; Flameproof; 3.  
 Clothing; Flammability; 8.  
 Clothing; Flammable; 8.  
 Clothing; FPA; Flammable clothing; 4.  
 Clothing; Hazards; Fire hazards; 4.  
 Clothing; Hazards; Fire hazards; 5.  
 Clothing; Hazards; Flammable clothing; 4.  
 Clothing; Protection; 4.  
 Clothing; Research; Fire hazard; Hazard; 6.  
 Clothing; Safety clothing; Death; 7.  
 Clothing; Test; Flammability; 5.  
 Clothing; Textile; Fire; Hazards; 7.  
 Clothing textiles; Textiles; Test; Flammability; 3.  
 Clothing textiles; Textiles; Flammability; 6.  
 Clothing textiles; Textiles; Test; Flammability; 8.  
 Colors; Textures; Quality; HF fabrics; Fabrics; 18.  
 Combustibility; Carpets; 18.  
 Commerce; Flammability; Clothing fabric; Fabric; 7.  
 Conference; Burns; Flame retardant fabrics; Fabrics; 4  
 Conference; Burns; Flame retardant fabrics; Fabrics; 11.  
 Conference; Burns; Flame retardant; Fabrics; 17.  
 Conference; Burns; Flame-retardant; Fabrics; 7.  
 Conference; Burns; Flame-retardant fabrics; Fabrics; 11.  
 Conference; Burns; Flame-retardant fabrics; Fabrics; 12  
 Conference; Burns; Flame-retardant; Fabrics; 17.  
 Conference; Clothing burns; Medical conference; Burns; 4.  
 Conference; Fabrics; Burns; Flame retardant fabrics; 3.  
 Conference; Flammability; 13.  
 Conference; Flammability; 18.  
 Conference; Safety; Home; RoSPA; 7.  
 Conference; Textile; Flammability; 6.  
 Conference; Textile; Flammability; 8.  
 Conference; Textile flammability; Flammability; 12.  
 Consumer textiles; Textiles; Flammability; 3.  
 Control; Polyurethane; Foamed Polyurethane; Fire; 12.  
 Corridors; Spread of fire; 18.  
 Cotton batting; Batting; Fire-retardant; 13.  
 Cotton; Knits; 4.  
 Cotton mattresses; Mattresses; Foam rubber; 12.  
 Cotton; Sheeting; Fire retardancy; Polyester/cotton; 12.  
 Cottons; Test; No-burn; 7.

## D

- Dangerous; Act; Wearing apparel; Interior; Furnishings; Flammable; 6.  
 Death; Clothing; Safety clothing; 7.  
 Death; Fire hazards; Fabrics; Hazards; Life; 7.  
 Death; Fire; Safety; 5.  
 Death; Fire; Safety; 12.



Death; Fireplace; 4.  
 Deaths; Clothing; Bedding; Fires; 8.  
 Deaths; Clothing; Bedding; Fires; 13.  
 Dirt; Floor; Rug; Door; 18.  
 Disposable; Clothing; 3.  
 Domestic; News; 12.  
 Door; Dirt; Floor; Rug; 18.  
 Dressed; Kill; 6.  
 Dresses; Fire; Safety clothing; Clothing; Accident; 7.  
 Du Pont; Modified; Neoprene; Foam; 17.

## E

Eastman; Verel; Modacrylic; Fiber; Products; Flame resistant products; 4.  
 Eastman; Verel; Modacrylic; Fiber; Flame resistant products; Products; 11.  
 Eastman; Verel; Modacrylic; Fiber; Flame resistant products; Resistant; 17.  
 Electric blanket fires; 11.  
 Electric blankets; 11.  
 Electric blankets; Bedwarmers; 11.  
 Electrically-heated blankets; Blankets; British standards; 11.  
 Explosive fabrics; Fire bombs; Fabrics; 11.  
 Eyeglass; Frames; Cellulose nitrate; 8.

## F

Fabric; 11.  
 Fabric; Clothing; Burning; 8.  
 Fabric; Commerce; Flammability; Clothing fabric; 7.  
 Fabric fires; Fires; Burning; Burns; Clothing; 8.  
 Fabric flammability; Flammability; 3.  
 Fabric flammability; Flammability; Apparel; 5.  
 Fabric flammability; Information Council; 5.  
 Fabric flammability; Information Council; 6.  
 Fabric flammability; Information Council; 12.  
 Fabric flammability; Information Council; 17.  
 Fabric; Flammability; Method; Rate-of-burn; 7.  
 Fabric; Flammability; Test; 7.  
 Fabric; Garment; Fire hazard; Hazard; 8.  
 Fabric; Spunbonded; Paper; Sheet; 17.  
 Fabrics; Act; Federal; Flammable; 8.  
 Fabrics; Act; Federal Trade Commission; Rules; Regulations; Flammable Fabrics Act; 4.  
 Fabrics; Act; Flammable Fabrics Act; 5.  
 Fabrics; Act; Flammable Fabrics Act; Apparel; Manufacturers; 5.  
 Fabrics; Blankets; Nonclothing fabrics; 11.  
 Fabrics; British; Standards; Flammability; 7.  
 Fabrics; Burns; 4.  
 Fabrics; Burns; Children; Clothing; 6.  
 Fabrics; Burns; Flame retardant fabrics; Conference; 3.  
 Fabrics; Colors; Textures; Quality; HF fabrics; 18.  
 Fabrics; Conference; Burns; Flame retardant fabrics; 4.  
 Fabrics; Conference; Burns; Flame-retardant; 7.  
 Fabrics; Conference; Burns; Flame-retardant fabrics; 11.  
 Fabrics; Conference; Burns; Flame-retardant fabrics; 11.  
 Fabrics; Conference; Burns; Flame-retardant fabrics; 12.  
 Fabrics; Conference; Burns; Flame-retardant; 17.  
 Fabrics; Conference; Burns; Flame-retardant; 17.  
 Fabrics; Explosive fabrics; Fire bombs; 11.  
 Fabrics; Fire; 3.  
 Fabrics; Fires; Nonclothing; 13.  
 Fabrics; Fires; Nonclothing; 19.  
 Fabrics; Flame resistant; 5.  
 Fabrics; Flame resistant; 11.  
 Fabrics; Flame retardant; 11.  
 Fabrics; Flammability; 5.  
 Fabrics; Flammability; 8.  
 Fabrics; Flammability; Apparel fabrics; Burning accidents; 3.  
 Fabrics; Flammability; Clothing; 6.  
 Fabrics; Flammability hazards; 11.  
 Fabrics; Flammability; Pile; 5.  
 Fabrics; Flammability; Textile fabrics; 13.  
 Fabrics; Flammable; 6.  
 Fabrics; Flammable; 8.  
 Fabrics; Flammable fabrics; Safer; Textiles; 5.  
 Fabrics; Flammable fabrics; 12.  
 Fabrics; Flammable fabrics; 13.  
 Fabrics; Garments; Flammability; Fibres; 7.  
 Fabrics; Garments; Flammability; Fibres; 18.  
 Fabrics; Hazard; Flammable fabrics hazard; 5.  
 Fabrics; Hazardous; Atmospheres; Flammability; 5.  
 Fabrics; Hazards; 7.  
 Fabrics; Hazards; Fire hazards; 3.  
 Fabrics; Hazards; Fire hazards; 4.  
 Fabrics; Hazards; Flammability hazards; 4.  
 Fabrics; Hazards; Life; Death; Fire hazards; 7.  
 Fabrics; Home furnishing; 17.  
 Fabrics; Hospital; Flame retardant; 11.  
 Fabrics; Insurance; Fire insurance; 4.  
 Fabrics; Legislation; Flame proof; 5.  
 Fabrics; Nylon; Flammability; Standards; Apparel; 7.  
 Fabrics; Problem; Flammable; 7.  
 Fabrics; Safer; Textiles; Flammable fabrics; 11.  
 Fabrics; Safety; National Safety Council; Flammable; 8.  
 Fabrics; Wearing apparel fire; Apparel; Fire; 3.  
 Fancy pants; Working pants; 4.  
 Fatal; Clothing; Fires; Survey; 6.  
 Fatality; Fire; 7.  
 Federal; Flammable; Fabrics; Act; 8.  
 Federal law; Test; Law; Flammability test; 5.  
 Federal Specification DDD-C-95; Carpets; Rugs; Wool; Nylon; Acrylic; Modacrylic; 18.  
 Federal Specification DDD-C-001173; Carpet; Polypropylene; Outdoor-indoor; 18.  
 Federal Trade Commission; Apparel industry; 3.  
 Federal Trade Commission; Rules; Regulations; Flammable Fabrics Act; Fabrics; Act; 4.  
 Fiber; Carpet fiber; 18.  
 Fiber; Flame resistant products; Products; Eastman; Verel; Modacrylic; 11.  
 Fiber; Flame resistant products; Resistant; Eastman; Verel; Modacrylic; 17.  
 Fiber; Polypropylene; Carpet fiber; 18.  
 Fiber; Products; Flame resistant products; Eastman; Verel; Modacrylic; 4.  
 Fibers; Modacrylic; 17.  
 Fibers; Modacrylic fibers; 3.

- Fibers; Modacrylic fibers; 11.  
 Fibers; Wool; Blankets; 11.  
 Fibre; BHS; 3.  
 Fibres; Britain; 6.  
 Fibres; Carpets; Synthetic fibres; 18.  
 Fibres; Fabrics; Sinterments; Flammability; 7.  
 Fibres; Fabrics; Garments; Flammability; 18.  
 Fibres; France; Fire-fighting; 5.  
 Fibres; Synthetics; 6.  
 Fibrolane; Carpets; 17.  
 Film; Vinyl; Plastic; 6.  
 Films; Tests; Fire tests; Flame-resistant; Textiles; 6.  
 Finding; Flammability standard; Standard; Regulation; Wearing apparel; 8.  
 Finding; Flammability standard; Carpets; Rugs; 18.  
 Finishing; Flame-retardant; 8.  
 Fire; Acrylic; Carpeting; 17.  
 Fire; Agency; 7.  
 Fire bombs; Fabrics; Explosive fabrics; 11.  
 Fire; Clothing; 3.  
 Fire; Clothing; 4.  
 Fire; Clothing fire; 4.  
 Fire; Control; Polyurethane; Foamed Polyurethane; 12.  
 Fire; Fabrics; 3.  
 Fire; Fabrics; Wearing apparel fire; Apparel; 3.  
 Fire; Fatality; 7.  
 Fire hazard; Carpet; 17.  
 Fire hazard; Hazard; Clothing; Research; 6.  
 Fire hazard; Hazard; Fabric; Garment; 8.  
 Fire hazard; Tests; Jute; 17.  
 Fire hazards; Apathy; Hazards; 4.  
 Fire hazards; Clothing; Hazards; 4.  
 Fire hazards; Clothing; Hazards; 5.  
 Fire; Hazards; Clothing; Textile; 7.  
 Fire hazards; Fabrics; Hazards; 3.  
 Fire hazards; Fabrics; Hazards; 4.  
 Fire hazards; Fabrics; Hazards; Life; Death; 7.  
 Fire hazards; Paper clothing; Hazards; Clothing; 6.  
 Fire; Hotel; 12.  
 Fire insurance; Fabrics; Insurance; 4.  
 Fire menace; Menace; 5.  
 Fire; Parliament; 7.  
 Fire; Polypropylene; Carpeting; 17.  
 Fire; Problem; Clothing; 6.  
 Fire record; Wearing apparel; 3.  
 Fire resistant; Garments; 5.  
 Fire retardancy; Polyester/cotton; Cotton; Sheeting; 12.  
 Fire risk; Risk; 7.  
 Fire risk; Risk; Safe; 12.  
 Fire; Safer; 4.  
 Fire; Safety clothing; Clothing; Accident; Dresses; 7.  
 Fire; Safety; Death; 5.  
 Fire; Safety; Death; 12.  
 Fire; Short wave; Therapy; 12.  
 Fire; Single fatality fire; 12.  
 Fire; Spring mattress; Mattress; 12.  
 Fire tests; Flame-resistant; Textiles; Films; Tests; 6.  
 Fire-fighting; Fibres; France; 5.  
 Fireplace; Death; 4.  
 Fireproof; Glass; Clothing; 5.  
 Fire-retardant; Cotton batting; Batting; 13.  
 Fires; Burning; Burns; Clothing; Fabric fires; 8.  
 Fires; Burns; Clothing; 3.  
 Fires; Burns; Clothing fires; 4.  
 Fires; Clothing fires; 3.  
 Fires; Deaths; Clothing; Bedding; 8.  
 Fires; Deaths; Clothing; Bedding; 13.  
 Fires; Hydrocarbons; Clothing; 7.  
 Fires; Lethal; Mattress; 12.  
 Fires; Nonclothing; Fabrics; 13.  
 Fires; Nonclothing; Fabrics; 19.  
 Fires; Origin; Garment; 7.  
 Fires; Public Health; Burns; Clothing; 8.  
 Fires; Survey; Fatal; Clothing; 6.  
 Fires; Tragedy; Clothing; 7.  
 Flame free; Mattresses; 11.  
 Flame proof; Fabrics; Legislation; 5.  
 Flame proof; Reemay; 5.  
 Flame resistant; Fabrics; 5.  
 Flame resistant; Fabrics; 11.  
 Flame resistant products; Resistant; Eastman; Verel; Modacrylic; Fiber; 17.  
 Flame resistant products; Eastman; Verel; Modacrylic; Fiber; Products; 4.  
 Flame resistant products; Products; Eastman; Verel; Modacrylic; Fiber; 11.  
 Flame resistant; Tests; Uniforms; 5.  
 Flame resistant; Wool; Cloth; 5.  
 Flame retardant fabrics; Conference; Fabrics; Burns; 3.  
 Flame retardant fabrics; Fabrics; Conference; Burns; 4.  
 Flame retardant; Fabrics; 11.  
 Flame retardant; Fabrics; Hospital; 11.  
 Flame retardant; Fabrics; Conference; Burns; 17.  
 Flame retardant fabrics; Fabrics; Conference; Burns; 11.  
 Flame retardant; Insulating; Underwear; 5.  
 Flame retardant; Polypropylene; 17.  
 Flame tests; Tests; Wool; 13.  
 Flame tests; Tests; Wool; 19.  
 Flame; Tests; Wool; 8.  
 Flameproof; Clothing; 3.  
 Flameproofing; Linen; Launderability; 11.  
 Flameproofing; Wearing apparel; Apparel; 5.  
 Flame-resistant; 3.  
 Flame-resistant; Textiles; Films; Tests; Fire tests; 6.  
 Flame-retardant; Fabrics; Conference; Burns; 7.  
 Flame-retardant; Fabrics; Conference; Burns; 17.  
 Flame-retardant fabrics; Fabrics; Conference; Burns; 11.  
 Flame-retardant fabrics; Fabrics; Conference; Burns; 12.  
 Flame-retardant fabrics; Hospital; 12.  
 Flame-retardant; Finishing; 8.  
 Flame-retardant; Linen; Hospital; Testing; 12.  
 Flames; Sweaters; 3.  
 Flammability; ACMA; ACA; 3.  
 Flammability; Apparel fabrics; Burning accidents; Fabrics; 3.  
 Flammability; Apparel; Fabric flammability; 5.  
 Flammability; Clothing; 8.  
 Flammability; Clothing; Burns; 5.  
 Flammability; Clothing; Fabrics; 6.  
 Flammability; Clothing fabric; Fabric; Commerce; 7.  
 Flammability; Clothing textiles; Textiles; Test; 3.  
 Flammability; Clothing; Test; 5.

- Flammability; Clothing textiles; Textiles; 6.  
 Flammability; Clothing textiles; Textiles; Test; 8.  
 Flammability; Conference; Textile; 6.  
 Flammability; Conference; Textile; 8.  
 Flammability; Conference; Textile flammability; 12.  
 Flammability; Conference; 13.  
 Flammability; Conference; 18.  
 Flammability; Consumer textiles; Textiles; 3.  
 Flammability; Fabric flammability; 3.  
 Flammability; Fabrics; 5.  
 Flammability; Fabrics; 8.  
 Flammability; Fabrics; Hazardous; Atmospheres; 5.  
 Flammability; Fibres; Fabrics; Garments; 7.  
 Flammability; Fibres; Fabrics; Garments; 18.  
 Flammability hazard; Acrylic carpeting; Carpeting; 17.  
 Flammability hazards; Fabrics; Hazards; 4.  
 Flammability hazards; Fabrics; 11.  
 Flammability; Method; Rate-of-burn; Fabric; 7.  
 Flammability; Pile; Fabrics; 5.  
 Flammability; Pile fabrics; 17.  
 Flammability potential; Mattresses; 13.  
 Flammability; Problem; 18.  
 Flammability section; Tests; ASTM; 12.  
 Flammability section; Tests; 18.  
 Flammability; Smoke characteristics; Aircraft; Interior materials; 18.  
 Flammability standard; Carpets; Rugs; Finding; 18.  
 Flammability standard; Standard; Regulation; Wearing apparel; Finding; 8.  
 Flammability; Standards; 11.  
 Flammability standards; 17.  
 Flammability; Standards; Apparel; Fabrics; Nylon; 7.  
 Flammability standards; Standards; 5.  
 Flammability; Standards; Textiles; 7.  
 Flammability; Symposium; 13.  
 Flammability; Symposium; 18.  
 Flammability; Symposium; Measurement; 6.  
 Flammability; Synthetic-fibered; Bed blankets; Blankets; 11.  
 Flammability; Test; Fabric; 7.  
 Flammability test; Federal law; Test; Law; 5.  
 Flammability testing; Testing; Law; 3.  
 Flammability; Tests; ASTM; 6.  
 Flammability; Textile fabrics; Fabrics; 13.  
 Flammability; Textiles; 5.  
 Flammability; Textiles; 6.  
 Flammability; Textiles; Act; Flammable fabrics; 3.  
 Flammability; Textiles; Problems; 8.  
 Flammability; Textiles; Symposium; 5.  
 Flammability; Wearing apparel; Apparel; 5.  
 Flammability; Wearing apparel; Apparel; 6.  
 Flammability; Fabrics; British; Standards; 7.  
 Flammable; Clothing; 8.  
 Flammable; Clothing; Accidents; 7.  
 Flammable clothing; Clothing; Hazards; 4.  
 Flammable clothing; Clothing; FPA; 4.  
 Flammable; Dangerous; Act; Wearing apparel; Interior; Furnishings; 6.  
 Flammable; Fabrics; 6.  
 Flammable; Fabrics; 8.  
 Flammable fabrics; Act; 3.  
 Flammable Fabrics Act; Apparel; Manufacturers; Fabrics; Act; 5.  
 Flammable Fabrics Act; Fabrics; Act; Federal Trade Commission; Rules; Regulations; 4.  
 Flammable Fabrics Act; Fabrics; Act; 5.  
 Flammable; Fabrics; Act; Federal; 8.  
 Flammable fabrics; Fabrics; Safer; Textiles; 11.  
 Flammable fabrics; Fabrics; 12.  
 Flammable fabrics; Fabrics; 13.  
 Flammable fabrics; Flammability; Textiles; Act; 3.  
 Flammable fabrics hazard; Fabrics; Hazard; 5.  
 Flammable; Fabrics; Problem; 7.  
 Flammable fabrics; Protection; Act; Amend; 11.  
 Flammable fabrics; Safer; Textiles; Fabrics; 5.  
 Flammable; Fabrics; Safety; National Safety Council; 8.  
 Flammable fabrics; Protection; Act; 17.  
 Flammable; Wearing apparel; 3.  
 Floor covering; Carpet; 17.  
 Floor; Rug; Door; Dirt; 18.  
 Foam; Du Pont; Modified; Neoprene; 17.  
 Foam laminated; Pants; 5.  
 Foam laminated; Trousers; 5.  
 Foam rubber; Cotton mattresses; Mattresses; 12.  
 Foamed Polyurethane; Fire; Control; Polyurethane; 12.  
 FPA; Flammable clothing; Clothing; 4.  
 Frames; Cellulose nitrate; Eyeglass; 8.  
 France; Fire-fighting; Fibres; 5.  
 Furnishings; Flammable; Dangerous; Act; Wearing apparel; Interior; 6.
- ## G
- Garment; Fire hazard; Hazard; Fabric; 8.  
 Garment; Fires; Origin; 7.  
 Garments; 6.  
 Garments; Fire resistant; 5.  
 Garments; Flammability; Fibres; Fabrics; 7.  
 Garments; Flammability; Fibres; Fabrics; 18.  
 Gases; Aircraft; Interior materials; Smoke; 17.  
 Glass; Clothing; Fireproof; 5.  
 Glass fiber; Mattress; Ticking; 12.  
 Guinea pigs; 6.
- ## H
- Hazard; Clothing; Research; Fire hazard; 6.  
 Hazard; Fabric; Garment; Fire hazard; 8.  
 Hazard; Flammable fabrics hazard; Fabrics; 5.  
 Hazardous; Atmospheres; Flammability; Fabrics; 5.  
 Hazards; Clothing; Fire hazards; Paper clothing; 6.  
 Hazards; Clothing; Textile; Fire; 7.  
 Hazards; Fabrics; 7.  
 Hazards; Fire hazards; Apathy; 4.  
 Hazards; Fire hazards; Clothing; 4.  
 Hazards; Fire hazards; Clothing; 5.  
 Hazards; Fire hazards; Fabrics; 3.  
 Hazards; Fire hazards; Fabrics; 4.  
 Hazards; Flammability hazards; Fabrics; 4.  
 Hazards; Flammable clothing; Clothing; 4.  
 Hazards; Life; Death; Fire hazards; Fabrics; 7.  
 HF fabrics; Fabrics; Colors; Textures; Quality; 18.  
 Home furnishing; Fabrics; 17.  
 Home; RoSPA; Conference; Safety; 7.

Home; Safety; 7.  
 Hospital; Bed pad; 12.  
 Hospital; Flame retardant; Fabrics; 11.  
 Hospital; Flame-retardant fabrics; 12.  
 Hospital; Testing; Flame-retardant; Linen; 12.  
 Hotbed; 12.  
 Hotel; Fire; 12.  
 Hydrocarbons; Clothing; Fires; 7.

## I

Ignition; Clothing; Burns; 3.  
 Ignition; Clothing; Casualties; 5.  
 Indoor-outdoor carpeting; Carpeting; 17.  
 Indoor/outdoor carpeting; Carpeting; 18.  
 Indoor-outdoor carpets; Carpets; Weather; 18.  
 Inflammable; Nightwear; 5.  
 Information Council; Fabric flammability; 5.  
 Information Council; Fabric flammability; 6.  
 Information Council; Fabric flammability; 12.  
 Information Council; Fabric flammability; 17.  
 Innerwear; 8.  
 Innerwear; Warmers; Underwear; 8.  
 Insulating; Underwear; Flame retardant; 5.  
 Insurance; Fire insurance; Fabrics; 4.  
 Interior; Furnishings; Flammable; Dangerous; Act;  
 Wearing apparel; 6.  
 Interior materials; Flammability; Smoke characteristics;  
 Aircraft; 18.  
 Interior materials; Smoke; Gases; Aircraft; 17.

## J

Jute; Fire hazard; Tests; 17.

## K

Kill; Dressed; 6.  
 Knits; Cotton; 4.

## L

Launderability; Flameproofing; Linen; 11.  
 Law; Flammability test; Federal law; Test; 5.  
 Law; Flammability testing; Testing; 3.  
 Legislation; Flame proof; Fabrics; 5.  
 Lethal; Mattress; Fires; 12.  
 Life; Child; 7.  
 Life; Death; Fire hazards; Fabrics; Hazards; 7.  
 Linen; Hospital; Testing; Flame-retardant; 12.  
 Linen; Launderability; Flameproofing; 11.

## M

Manmade fibers; Carpet; 18.  
 Man-made fibres; Wool; Carpeting; 17.  
 Manufacturers; Fabrics; Act; Flammable Fabrics Act;  
 Apparel; 5.  
 Mattress; Fire; Spring mattress; 12.  
 Mattress; Fires; Lethal; 12.

Mattress; Ticking; Glass fiber; 12.  
 Mattresses; 11.  
 Mattresses; 12.  
 Mattresses; Box springs; Springs; 12.  
 Mattresses; Flame free; 11.  
 Mattresses; Flammability potential; 13.  
 Mattresses; Foam rubber; Cotton mattresses; 12.  
 Measurement; Flammability; Symposium; 6.  
 Medical conference; Burns; Conference; Clothing burns;  
 4.  
 Men; Money; Beds; 12.  
 Menace; Fire menace; 5.  
 Method; Rate-of-burn; Fabric; Flammability; 7.  
 Modacrylic; 18.  
 Modacrylic; Amendment to Federal Specification DDD-  
 C-95; Carpets; Rugs; Wool; Nylon; Acrylic; 18.  
 Modacrylic; Federal Specification DDD-C-95; Carpets;  
 Rugs; Wool; Nylon; Acrylic; 18.  
 Modacrylic; Fiber; Flame resistant products; Products;  
 Eastman; Verel; 11.  
 Modacrylic; Fiber; Flame resistant products; Resistant;  
 Eastman; Verel; 17.  
 Modacrylic; Fiber; Products; Flame resistant products;  
 Eastman; Verel; 4.  
 Modacrylic; Fibers; 17.  
 Modacrylic fibers; Fibers; 3.  
 Modacrylic fibers; Fibers; 11.  
 Modified; Neoprene; Foam; Du Pont; 17.  
 Money; Beds; Men; 12.

## N

National Safety Council; Flammable; Fabrics; Safety; 8.  
 Neoprene; Foam; Du Pont; Modified; 17.  
 News; Domestic; 12.  
 NFPA; Wearing apparel; Standard; Apparel; 7.  
 Nightdresses; Regulations; Children; 5.  
 Nightwear; Inflammable; 5.  
 Nightwear; Non-inflammable; 7.  
 No-burn; Cottons; Test; 7.  
 Nonclothing fabrics; Fabrics; Blankets; 11.  
 Nonclothing; Fabrics; Fires; 13.  
 Nonclothing; Fabrics; Fires; 19.  
 Non-flammable carpet backing; Carpet backing; 18.  
 Non-flammable carpet; Carpet; 18.  
 Non-inflammable; Nightwear; 7.  
 Nylon; Acrylic; Modacrylic; Federal Specification DDD-  
 C-95; Carpets; Rugs; Wool; 18.  
 Nylon; Acrylic; Modacrylic; Amendment to Federal  
 Specification DDD-C-95; Carpets; Rugs; Wool; 18.  
 Nylon; Flammability; Standards; Apparel; Fabrics; 7.

## O

Origin; Garment; Fires; 7.  
 Outbreak; Warning; Physiotherapists; 12.  
 Outdoor-indoor; Federal Specification DDD-C-001173;  
 Carpet; Polypropylene; 18.

## P

Pants; Foam laminated; 5.  
 Paper clothing; Hazards; Clothing; Fire hazards; 6.

Paper; Sheet; Fabric; Spunbonded; 17.  
 Paper-fabric; 7.  
 Parliament; Fire; 7.  
 Performance tests; Tests; Carpets; 18.  
 Physiotherapists; Outbreak; Warning; 12.  
 Pile; Fabrics; Flammability; 5.  
 Pile fabrics; Flammability; 17.  
 Pillows; 12.  
 Plastic; Film; Vinyl; 6.  
 Polyester; Acetate; 17.  
 Polyester; Carpets; 17.  
 Polyester/cotton; Cotton: Sheeting; Fire retardancy; 12.  
 Polypropylene; Backing fabrics; Tufted carpets; 18.  
 Polypropylene; Carpet fiber; Fiber; 18.  
 Polypropylene; Carpeting; Fire; 17.  
 Polypropylene; Flame retardant; 17.  
 Polypropylene; Outdoor-indoor; Federal Specification DDD-C-001173; Carpet; 18.  
 Polyurethane; Foamed Polyurethane; Fire; Control; 12.  
 Problem; Clothing; Fire; 6.  
 Problem; Flammability; 18.  
 Problem; Flammable; Fabrics; 7.  
 Problems; Flammability; Textiles; 8.  
 Products; Eastman; Verel; Modacrylic; Fiber; Flame resistant products; 11.  
 Products; Flame resistant products; Eastman; Verel; Modacrylic; Fiber; 4.  
 Protection; Act; Amend; Flammable fabrics; 11.  
 Protection; Act; Flammable fabrics; 17.  
 Protection; Clothing; 4.  
 Public Health; Burns; Clothing; Fires; 8.  
 Pyrotechnics; Textile; 3.

## Q

Quality; HF fabrics; Fabrics; Colors; Textures; 18.

## R

Rate-of-burn; Fabric; Flammability; Method; 7.  
 Reemay; Flame proof; 5.  
 Regulation; Wearing apparel; Finding; Flammability standard; Standard; 8.  
 Regulations; Children; Nightdresses; 5.  
 Regulations; Flammable Fabrics Act; Fabrics; Act; Federal Trade Commission; Rules; 4.  
 Remarks; 4.  
 Research; Fire hazard; Hazard; Clothing; 6.  
 Resistant; Eastman; Verel; Modacrylic; Fiber; Flame resistant products; 17.  
 Risk; Fire risk; 7.  
 Risk; Safe; Fire risk; 12.  
 RoSPA; Conference; Safety; Home; 7.  
 Rug; Door; Dirt; Floor; 18.  
 Rugs; Carpets; 18.  
 Rugs; Finding; Flammability standard; Carpets; 18.  
 Rugs; Wool; Nylon; Acrylic; Modacrylic; Federal Specification DDD-C-95; Carpets; 18.  
 Rugs; Wool; Nylon; Acrylic; Modacrylic; Amendment to Federal Specification DDD-C-95; Carpets; 18.

Rules; Regulations; Flammable Fabrics Act; Fabrics; Act; Federal Trade Commission; 4.

## S

Sack; Blaze; Build-up; 18.  
 Safe; Fire risk; Risk; 12.  
 Safer; Fire; 4.  
 Safer; Textiles; 8.  
 Safer; Textiles; Fabrics; Flammable fabrics; 5.  
 Safer; Textiles; Flammable fabrics; Fabrics; 11.  
 Safety clothing; Clothing; Accident; Dresses; Fire; 7.  
 Safety clothing; Death; Clothing; 7.  
 Safety; Death; Fire; 5.  
 Safety; Death; Fire; 12.  
 Safety; Home; 7.  
 Safety; Home; RoSPA; Conference; 7.  
 Safety; National Safety Council; Flammable; Fabrics; 8.  
 Sheet; Fabric; Spunbonded; Paper; 17.  
 Sheeting; Fire retardancy; Polyester/cotton; Cotton; 12.  
 Short wave; Therapy; Fire; 12.  
 Single fatality fire; Fire; 12.  
 Smoke; 8.  
 Smoke characteristics; Aircraft; Interior materials; Flammability; 18.  
 Smoke; Gases; Aircraft; Interior materials; 17.  
 Spread of fire; Corridors; 18.  
 Spring mattress; Mattress; Fire; 12.  
 Springs; Mattresses; Box springs; 12.  
 Spunbonded; Paper; Sheet; Fabric; 17.  
 Stair carpets; Carpets; 18.  
 Standard; Apparel; NFPA; Wearing apparel; 7.  
 Standard; Regulation; Wearing apparel; Finding; Flammability standard; 8.  
 Standards; Apparel; Fabrics; Nylon; Flammability; 7.  
 Standards; Flammability; 11.  
 Standards; Flammability Fabrics; British; 7.  
 Standards; Flammability standards; 5.  
 Standards; Textiles; Flammability; 7.  
 Survey; Fatal; Clothing; Fires; 6.  
 Sweaters; Flames; 3.  
 Sweaters; Washer; Wool; 8.  
 Symposium; Flammability; 13.  
 Symposium; Flammability; 18.  
 Symposium; Flammability; Textiles; 5.  
 Symposium; Measurement; Flammability; 6.  
 Synthetic fibres; Fibres: Carpets; 18.  
 Synthetic-fibered; Bed blankets; Blankets; Flammability; 11.  
 Synthetics; 6.  
 Synthetics; Fibres; 6.

## T

Test; Fabric; Flammability; 7.  
 Test; Flammability; Clothing textiles; Textiles; 3.  
 Test; Flammability; Clothing; 5.  
 Test; Flammability; Clothing textiles; Textiles; 8.  
 Test; Law; Flammability test; Federal law; 5.  
 Test; No-burn; Cottons; 7.  
 Testing; Flame-retardant; Linen; Hospital; 12.  
 Testing; Law; Flammability testing; 3.

Tests; ASTM; Flammability; 6.  
 Tests; ASTM; Flammability section; 12.  
 Tests; Carpets; Performance tests; 18.  
 Tests; Fire tests; Flame-resistant; Textiles; Films; 6.  
 Tests; Flammability section; 18.  
 Tests; Jute; Fire hazard; 17.  
 Tests; Uniforms; Flame resistant; 5.  
 Tests; Wool; Flame; 8.  
 Tests; Wool; Flame tests; 13.  
 Tests; Wool; Flame tests; 19.  
 Textile fabrics; Fabrics; Flammability; 13.  
 Textile; Fire; Hazards; Clothing; 7.  
 Textile; Flammability; Conference; 6.  
 Textile; Flammability; Conference; 8.  
 Textile flammability; Flammability; Conference; 12.  
 Textile materials; Thermal; 5.  
 Textile; Pyrotechnics; 3.  
 Textiles; Act; Flammable fabrics; Flammability; 3.  
 Textiles; Fabrics; Flammable fabrics; Safer; 5.  
 Textiles; Films; Tests; Fire tests; Flame-resistant; 6.  
 Textiles; Flammability; 5.  
 Textiles; Flammability; 6.  
 Textiles; Flammability; Clothing textiles; 6.  
 Textiles; Flammability; Consumer textiles; 3.  
 Textiles; Flammability; Standards; 8.  
 Textiles; Flammability; 6.  
 Textiles; Flammable fabrics; Fabrics; Safer; 11.  
 Textiles; Problems; Flammability; 7.  
 Textiles; Safer; 8.  
 Textiles; Symposium; Flammability; 5.  
 Textiles; Test; Flammability; Clothing textiles; 3.  
 Textiles; Test; Flammability; Clothing textiles; 8.  
 Textures; Quality; HF fabrics; Fabrics; Colors; 18.  
 Therapy; Fire; Short wave; 12.  
 Thermal; Textile materials; 5.  
 Ticking; Glass fiber; Mattress; 12.  
 Tragedy; Clothing; Fires; 7.  
 Trousers; Foam laminated; 5.  
 Tufted carpets; Polypropylene; Backing fabrics; 18.

## U

Underlays; Carpet; 17.  
 Underwear; 8.

Underwear; Flame retardant; Insulating; 5.  
 Underwear; Innerwear; Warmers; 8.  
 Uniforms; Flame resistant; Tests; 5.

## V

Verel; Modacrylic; Fiber; Flame resistant products; Products; Eastman; 11.  
 Verel; Modacrylic; Fiber; Flame resistant products; Resistant; Eastman; 17.  
 Verel; Modacrylic; Fiber; Products; Flame resistant products; Eastman; 4.  
 Vinyl; Plastic; Film; 6.

## W

Warmers; Underwear; Innerwear; 8.  
 Warning; Physiotherapists; Outbreak; 12.  
 Washer; Wool; Sweaters; 8.  
 Wearing apparel; Apparel; Flameproofing; 5.  
 Wearing apparel; Apparel; Flammability; 5.  
 Wearing apparel; Apparel; Flammability; 6.  
 Wearing apparel; Finding; Flammability standard; Standard; Regulation; 8.  
 Wearing apparel fire; Apparel; Fire; Fabrics; 3.  
 Wearing apparel; Fire record; 3.  
 Wearing apparel; Flammable; 3.  
 Wearing apparel; Interior; Furnishings; Flammable; Dangerous; Act; 6.  
 Wearing apparel; Standard; Apparel; NFPA; 7.  
 Weather; Indoor-outdoor carpets; Carpets; 18.  
 Wool; Blankets; Fibers; 11.  
 Wool; Carpeting; Man-made fibres; 17.  
 Wool; Cloth; Flame resistant; 5.  
 Wool; Flame; Tests; 8.  
 Wool; Flame tests; Tests; 13.  
 Wool; Flame tests; Tests; 19.  
 Wool; Nylon; Acrylic; Modacrylic; Federal Specification DDD-C-95; Carpets; Rugs; 18.  
 Wool; Nylon; Acrylic; Modacrylic; Amendment to Federal Specification DDD-C-95; Carpets; Rugs; 18.  
 Wool; Sweaters; Washer; 8.  
 Workingpants; Fancypants; 4.

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