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# CLOTHING FIRES

*Concern - Education - Prevention*

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When flame is present, clothing acts as a connector between the flame and the wearer. Clothing fires and resultant injuries occur often in the home where young children and the elderly are the most frequent victims. Clothing flammability is very complicated and even an emotional problem. There is no easy solution—and no one solution. Choosing clothes which won't burn easily might seem like a simple solution, but let's see if it's really that easy.

## THE RATE AT WHICH CLOTHES BURN DEPENDS ON:

FIBER	FABRIC	DESIGN
<p>Most fibers in their natural state will burn or melt and cause burns.</p> <p><b>Cellulose based fibers</b> (especially rayon and cotton) will burn quickly unless treated for flame resistance.</p> <p><b>Wool</b> is the safest natural fiber because it burns slowly and extinguishes itself.</p> <p><b>Synthetic fibers</b> are generally more difficult to ignite, but they melt.</p> <p><b>Glass</b> is the only fiber considered flame-proof but it is not used in clothing because of its scratchy texture.</p>	<p>Fabric structures affect the rate of burning, for the same fiber in different fabric constructions may flame and burn more or less quickly.</p> <p>The more air each fiber is exposed to, the more available oxygen there is for burning.</p> <p>Lightweight, loosely woven fabrics and brushed or napped fabrics contribute to more rapid burning. Fabric blends of different fiber and fabric finishes will influence potential flammability.</p>	<p>Clothing design and fit influence the amount of air that can cause the fire to spread more rapidly.</p> <p>Skirts, sleeves, and slacks which flare or extend away from the body allow more air circulation which spreads fire quickly. Other features such as flares, ruffles, and sashes can extend from the body to connect with sources of ignition.</p> <p>And the more fabric fullness and length, the more potential area there is for burning.</p>

## WHAT ARE POSSIBILITIES FOR IMPROVEMENT?

**Flame-proof Fabric:** will not ignite when exposed to flame.

**Flame-retardant Fabric:** will burn when exposed to flame but at a lower level; will self-extinguish when flame source is removed.

The two main methods for making fabrics flame-proof and flame-retardant are (1) flame-proof, flame-retardant, or high temperature-resistant fibers; and (2) flame-retardant finishes.

## WHAT ARE THEIR LIMITATIONS?

Research and development costs are high for these fabrics, so clothing made from them will cost more too. Fabric "hand" will be less soft. Fabric will weigh more. Colors will be limited. Continued laundering and dry cleaning may weaken the flame retardant finish. So, while technically possible, flame-proof and flame-retardant clothing offers no simple solution.



## TOWARD GREATER SAFETY

A balanced effort between industry, government, and the public will help prevent injuries and deaths from clothing fires.

THE INDUSTRY <i>(manufacture)</i>	THE GOVERNMENT <i>(regulation)</i>	THE PUBLIC <i>(education)</i>
<p>Government regulation, public concern, and the increasing social conscience of big business promote research and development of safer products—products such as non-flammable clothing.</p> <p>But the factor of flammability does not stand alone. It needs consumer acceptance. We need to combine appearance (style, color, texture), comfort (weight, hand surface, absorbency) and care (launder and drycleanability) in such a way that fabrics will be acceptable to consumers at a price they are willing to pay.</p>	<p>The Federal Government is empowered by law to:</p> <ul style="list-style-type: none"> <li>A. conduct flammability research</li> <li>B. investigate clothing fires to determine their cause</li> <li>C. set standards by which the flammability of clothing and home furnishings fabrics can be measured and regulated.</li> </ul> <p><b>Example</b>—A standard might be established for a particular kind of garment (sleepwear) for a particular age group (babies and children up to size 6X). This involves a compromise of different and sometimes opposing interests.</p>	<p>Consumer's attitude toward safety influence:</p> <ul style="list-style-type: none"> <li>A. how careful he is about fire hazards. Clothing will not burn unless a source of ignition is present. Human carelessness can't be legislated or manufactured away.</li> <li>B. how important clothing flammability is in relation to appearance, wear, and care. Consumers should know which factors <i>are</i> most important to them and which factors <i>should</i> be most important to them.</li> <li>C. the degree of commitment and form of action they'll take to prevent fires.</li> </ul>

### WHOSE RESPONSIBILITY?

Is the general public willing to remain passive and let the government, the textile industry, and others respond to the problem of incidents from burning clothing? Are non-burning fabrics the only issue involved? Will governmental or voluntary controls to make "safer" fabrics available eliminate the problem?

### HOW ABOUT YOU?

Are you as concerned as legislatures, governmental agencies, public safety organizations and the medical profession? How concerned are you about fabric flammability, about buying "safer" fabrics? Do you **really** care about having clothes that will not burn? Do you **really** care enough to pay the added cost?

### ISN'T PREVENTION, NOT PANIC, THE ANSWER?

How many opportunities for dangerous flame source are there in and around your home? Will you help children understand the potential dangers of fire? Will you be more watchful of older or disabled people who cannot react quickly to emergencies? You, as the consumer, are a very important factor in the problem of clothing fires.

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