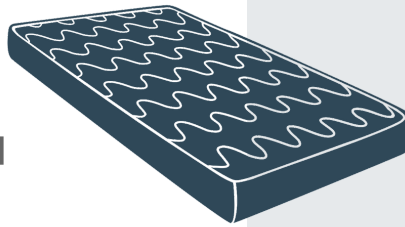


# SLEEP SAFE

## Tips for Choosing a Safer Mattress

### The Problem:

Mattresses are known to contain toxic substances associated with negative human and environmental health impacts.



### What's Inside a Conventional Mattress?

- Polyurethane Foam
- Flame Retardant Chemicals
- Polyester
- Adhesives

## Why Sleep Matters: How Our Bodies Heal During Sleep

### BRAIN

Toxic Waste Removal



### HORMONES

Maintenance, Repair, & Growth



### SKIN

Restored Balance & Protection



## Polyurethane Foam

Also called memory foam. Made by mixing polyols, water, and isocyanates, the building blocks of foam, alongside other fillers.

Most, if not all, of the ingredients used to make foam are petroleum products, meaning they're derived from fossil fuels.



## Three Key Chemicals of Concern:

Flame Retardants  
Volatile Organic Compounds  
Isocyanates

## Key Chemical of Concern:

1 **Flame Retardants**

Because polyurethane foam is made from materials derived from fossil fuels, and therefore highly combustible, flame retardants are added. There are numerous types of flame retardants, many of which are proprietary, meaning we don't yet know what chemicals they contain (because Federal law allows them not to disclose this information).

**Human Health Impacts**

What we do know about flame retardants in use is cause for alarm. Various flame retardants are associated with many health impacts like: various effects of endocrine disruption, lower IQ, hyperactivity, altered sexual development and neurodevelopment, other adverse pregnancy outcomes, fertility issues, thyroid dysfunction, and cancer.

**Environmental Impacts**

Flame retardants have been found in the tissues of polar bears, sea otters, killer whales, and more. Many flame retardants can be persistent in the environment (meaning they stick around), can bioaccumulate (accumulate in organisms' tissues), and can biomagnify (accumulate progressively in organisms' tissues moving up the food chain).



The efficacy of flame retardants is debated, as they may not be effective in preventing fire or providing significantly more time for an exit in the event of a fire.

**Two Types of Flame Retardants**

*of most concern:*

**Organophosphorus  
and  
Halogenated**

## Key Chemical of Concern:

2 **Volatile Organic Compounds**

VOCs are chemicals that can easily become gasses; these gasses are usually invisible to the eye and are very common in indoor environments.

**Human Health Impacts**

Many VOCs are known to be harmful to human health. Because a wide range of substances are known as VOCs, the associated health impacts also span a wide range. Polyurethane foam is a source of VOC emissions in the home, playing a factor in the quality of our indoor air.



## Key Chemical of Concern:



### 3 Isocyanates

Isocyanates are the primary building blocks of foam.

Toluene diisocyanate (TDI) is the most commonly used isocyanate.



### Human Health Impacts

More isocyanates are added than necessary for the chemical reaction that creates polyurethane foam. This means that not all the isocyanates are used up in the reaction, and residual, unreacted isocyanates may be present in foam. The result may be exposure to low levels from polyurethane foam products.



Exposure can cause asthma attacks, irritation to mucous membranes, skin inflammation, and chemical sensitization. Isocyanates can also cause respiratory disease, even at low levels of exposure. TDI is a known carcinogen. However, the research is inconclusive as to whether these compounds pose a high risk to consumers within mattresses. Until there is ample research, Made Safe encourages exercising precaution and choosing safer materials like natural latex instead.



## Safer Mattress Materials

**Organic Cotton:** Cotton is a nontoxic alternative to foam that is inherently less flammable than foam. Conventional cotton can use heavy doses of pesticides, can be water intensive, and is commonly GMO. Instead of conventional cotton, opting for organic cotton means choosing a safer, more sustainable material.



**Wool:** Wool is naturally flame resistant. When used properly, wool can provide fire resistance that meets federal flammability standards. Wool should be processed with non-toxic substances, and sourced responsibly to ensure animal welfare. Wool is cooler than foam and wicks away moisture.



**Latex:** When naturally sourced without any harmful additives, latex is an excellent alternative to foam because of its utility.



**Sewing Construction:** The safest way to adhere mattress components is to forego chemical adhesives altogether and sew mattresses by hand.



Shop for **MADE SAFE®**  
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The MADE SAFE seal on a mattress means that it's made without materials known or suspected to harm human health or ecosystems. Certified products meet the highest standard of human and ecosystem health according to the best available science.

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