Laboratory coat selection

When choosing a lab coat, it is important to consider the following:

- Are you being protected against a flammability hazard, a toxic substance, a chemical splash or a biological exposure?

- Are your street clothes being kept clean?

Know what's in your lab coat, and keep the following in mind:

- Flame retardant cotton fabric is highly recommended when handling flammable solvents or reactive metals.
- **Never** wear lab coats containing synthetic fabrics such as polyester if there is a potential for fire. Polyester is a polymer, meaning that it has many of the same characteristics as plastic. It burns and melts at the same time and sticks to any surface it drips on, including skin.
- NOMEX® flame resistant fabric is recommended when handling pyrophoric materials outside of a fume hood.
- Traditional 100 percent cotton coats have never been able to pass either the NFPA 70E – arc flash electrical fire hazard – or the NFPA 2112/2113 – flash fire – testing requirement. While they burn less readily than polyester, they are still flammable and are not recommended when there is the potential for a fire.

Hazardous chemicals
Laboratory coats do offer a level of protection against chemical hazards; however, it is more difficult to locate specific information on chemical compatibility. All lab coats should be considered as providing protection against incidental contact. If you come into contact with a chemical that can potentially penetrate the coat — like a liquid substance — then remove the lab coat and wash the area of your skin that has been affected.

Lab coats made of cotton fabric are recommended for general lab use without fire hazards.

Please note – Nomex® tends to decompose when exposed to chlorine bleach. Polyester blends may provide better protection against corrosives than cotton.

Lab coat types			
Material	**Features**	**Pros**	**Cons**
Polyester and cotton blend.	**Care** • Follow manufacturer's laundering instructions. **Comfort** • Lightweight and breathable. • More cotton in the blend results in better breathability. **Flame resistance** • Not flame resistant. • Polyester blends burn more readily than 100 percent cotton or flame resistant materials. **Liquid resistance** • No specific chemical resistance. • Polyester blends provide better protection against corrosive material than cotton. • Splash resistant.	Appropriate for use in clinical settings and research laboratories where biological material is manipulated.	Polyester blends burn readily when ignited, and are not appropriate for use with flammable liquids, pyrophoric materials or near an open flame.
One hundred percent cotton.	**Care** • Follow manufacturer's laundering instructions. **Comfort** • Lightweight and breathable. **Flame resistance** • Burns less readily than polyester blends. • Not flame resistant. **Liquid resistance** • Cotton lab coats provide better protection from solvent contamination than corrosive contamination. • No specific chemical resistance. • Not splash resistant.	Appropriate for use in clinical settings and research laboratories where there is light flammable liquid or an open flame in use.	Cotton lab coats should be supplemented with a chemical splash apron when corrosive material is handled.
One hundred percent cotton treated with flame retardant.	**Care** • Follow manufacturer's laundering instructions. Ensure laundering is done with care as improper laundering can limit the life of the flame retardant treatment. **Comfort** • Lightweight and breathable. **Flame resistance** • Flame resistant fabrics are intended to resist ignition, prevent the spread of flames and to self-extinguish almost immediately upon removal of the ignition source. • Yes flame resistant.	Appropriate for use in research laboratories where substantial fire risk exists from flammable material handling or open flame use.	More costly than a traditional 100 percent cotton lab coat.

	Liquid resistance • No specific chemical resistance. • Not splash resistant.		
Nomex®	**Care** • Do not launder at above 140 degrees F. • Follow manufacturer's laundering instructions. **Comfort** • Breathable, but slightly bulkier than polyester blend and 100 percent cotton materials. **Flame resistance** • When in contact with direct flame or extreme heat, fibers in the protective clothing enlarge, enabling greater distance between the user's skin and heat source. • Yes flame resistant.	Appropriate for use in research laboratories where there is extreme fire danger from open flame, electrical arc flash and pyrophoric material.	Expensive.