



**FLAME-RESISTANT  
CHEMICAL-SPLASH (FRCP)  
PROTECTIVE GARMENTS**



**SINCE '71**





# CHEMICAL PROTECTION NEEDS A NEW SOLUTION.

For far too long one aspect of Chemical Protection has remained unchanged: outdated PPE. This environment of innovation demands reliable PPE that provides the ultimate in protection and comfort, for all-day wear. That's why Bulwark® FR offers breakthrough PPE designed specifically for chemical-splash protection. Regular clothing or non-protective lab coats simply won't keep lab workers protected in the case of a thermal incident or inadvertent chemical-splash, but our multi-hazard apparel helps provide protection that fits well and is easy to wear.

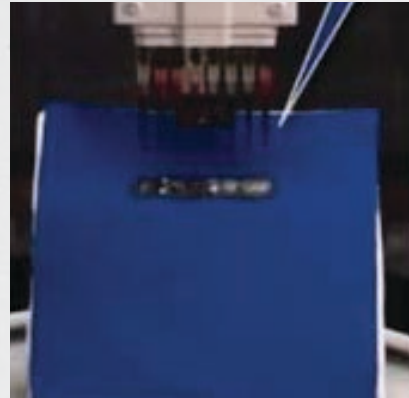
Our new solution offers a finish that does not contain intentionally added PFAS. Now backed by the power and innovation of Bulwark Protection, you'll receive the latest information, advice, training and guidance from our safety experts.

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# INADVERTENT CHEMICAL-SPLASH RESISTANT

Fabric exhibits repellency to a range of chemicals\*, including 98% Sulfuric Acid, DMSO, and 50% Sodium Hydroxide through industrial launderings\*\*.



**Range of Chemicals\*, including 98% Sulfuric Acid, DMSO, and 50% Sodium Hydroxide**



**Regular FR Lab Coat**



**WESTEX ShieldCXP™**

Inadvertent chemical splash resistance is necessary for workers that may be exposed to small quantities of liquid chemicals\* at atmospheric pressures. These conditions – where personnel may come in contact with small amounts of chemicals – are experienced in a range of environments including but not limited to educational laboratories, light industrial, and service industries. Westex ShieldCXP™ is designed to shed a variety of chemicals\* when they are dropped or splashed onto the fabric and to resist them from wicking through the fabric, thus limiting the exposure to the wearer. Chemical exposure may affect future chemical and flame resistant properties. Careful consideration should be taken to replace the effected garment in accordance with the user's standard safety protocol.

\*see next page for a listing of tested chemicals  
\*\*140°F Industrial Wash



## FLAME RESISTANT

Fabric prevents clothing ignition during short-duration thermal incidents and emergency exposure to flame.



## CHEMICAL-SPLASH PROTECTION

Proprietary finishes repel small amounts of liquid chemicals that are dropped or splashed on the fabric. It resists penetration and wicking of an inadvertent, secondary liquid chemical-splash.

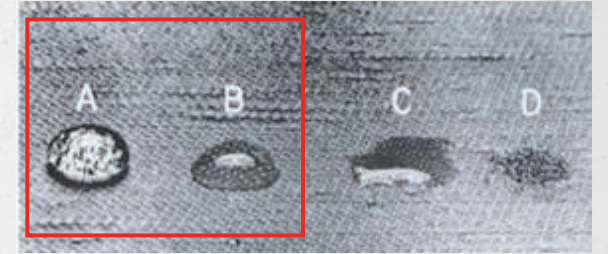


## LIGHTWEIGHT & BREATHABLE

This revolutionary fabric is also lightweight and breathable so it can be used as daily wear rather than task-based/as-needed protection.

# AATCC 193 TEST METHOD

A modified AATCC 193 test method is used to quantify the chemical splash resistance. The method uses an A through D rating scale to rate the interaction of water and water/alcohol mixtures with the fabric surface. In the test, the fabric is held on a flat surface and the test droplet is placed on the fabric. A rating is assigned after ten seconds. An "A" rating corresponds to no interaction with the fabric while a "D" rating designates complete wicking across and through the fabric. Ratings "B" and "C" are intermediate designations. See the figure to the right for examples of each rating.



**"A" and "B" ratings indicate that the fabric would possess a resistance to penetration following inadvertent chemical splash for more than 10 seconds.**

There are countless liquid chemicals and combinations thereof that could be tested and rated according to the above method. A finite list of challenge chemicals was selected to represent a broad range of chemical classes, hazards, and physical characteristics and although they have been tested, do not represent a complete list of chemicals that are used in a laboratory environment. Westex ShieldCXP™ is not recommended for most organic solvents. It is highly recommended that unlisted chemicals in the concentrations noted in the table below be evaluated for sufficient repellency using the AATCC 193 test method described above. Repellency may be diminished through repeated launderings based on type and frequency of wash cycle combined with the specific chemical being repelled. Spot testing is recommended after laundering to verify level of performance is maintained.

COMPARISON CHART				
The following ratings were recorded:		As Received Westex Shield CXP™ 4.5 oz/yd²	After 10IL Cycles Westex ShieldCXP™ 4.5 oz/yd²	As Received Other FR Fabric* 4.5 oz/yd²
Corrosive Liquids	98% Sulfuric Acid	A	A	D
	37% Hydrochloric Acid	A	A	D
	48% Hydrofluoric Acid	A	A	D
	50% Sodium Hydroxide	A	A	D
Strong Oxidizers & Corrosive Liquids	70% Nitric Acid	A	A	D
	30% Nitric Acid	A	A	D
	Piranha Solution	B	B	D
	50% Hydrogen Peroxide	A	A	D
Not recommended for protection against other polar/non-polar organic solvents				
Polar Organic Solvents	2-Aminoethanol	A	A	D
	DMSO	A	A	D
Other Polar/Non-Polar Organic Solvents	Various	D	D	D

*The fabric ratings in the above chart represent fabric as produced  
\*FR fabric tested was standard Nomex® Essential (without ShieldCXP™ technology)*

These fabrics are innovative, flame and inadvertent chemical splash resistant materials intended to be used in garments that supplement personal protective equipment. The materials are engineered to self-extinguish when the source of ignition is removed and to repel small quantities of liquids following a splash from a wide variety of liquids onto the garment, thus limiting the exposure to the wearer. They may be used as a layer of, but are not intended for use as the primary protection in, firefighting garments or other products subject to repeated or extended exposure to heat or flame (unless explicitly certified in writing to meet the relevant regulations for use in such firefighting garments) or as primary protection against large amounts of liquid chemicals, toxic or corrosive gases, and/or chemical mixtures under pressure. As each customer's use of our product may be different, information provided, including without limitation, recommendations, test results, samples, care/labeling/processing instructions or marketing advice, is given in good faith but without warranty and without accepting any responsibility/liability. Through the AATCC 193 method, assessment of further chemical hazards may be conducted. If a substance receives a C or D, the lab coat should not be used for protection against that substance. It is recommended to evaluate potential hazards against the garment over its lifetime. Do not launder with bleach or fabric softeners. Each customer must test and be responsible for its own specific use, further processing, labeling, marketing, etc. All sales are exclusively subject to our standard terms of sale posted at [www.milliken.com/terms](http://www.milliken.com/terms) (all additional/different terms are rejected) unless explicitly agreed otherwise in a signed writing.





## MEN'S FLAME-RESISTANT/ CHEMICAL-SPLASH PROTECTION LAB COAT



NFPA® 2112 Compliant

Concealed snap front closure. Black lay-down collar for easy recognition as a CP lab coat. FR-only knit cuffs – safer than typical open cuff. Splash resistant pass-throughs for easy inner pocket access. Pockets include one two-needle top-stitched chest pocket with pencil stall and two double-needle top-stitched lower pockets with flaps.

**KNR6** - Men's (Reg) XS-5XL.  
Fit Chart MFC-179.

**Fabric:** Flame-resistant, 4.5 oz. (150 g/m<sup>2</sup>)  
93% Meta-Aramid / 5% Para-Aramid / 2% Anti-Stat

**Protection:** Short-duration thermal hazards and inadvertent liquid chemical splashes. Arc Rating ATPV 5.2 calories/cm<sup>2</sup>.

**Color:** Royal Blue (RB)



### FEATURES

- 1 BLACK LAY-DOWN COLLAR FOR EASY RECOGNITION AS A CP LAB COAT
- 2 CONCEALED SNAP FRONT CLOSURE
- 3 DOUBLE-NEEDLE TOP-STITCHED CHEST POCKET WITH PENCIL STALL
- 4 SPLASH-RESISTANT PASS-THROUGHS
- 5 FR-ONLY KNIT CUFFS - SAFER THAN TYPICAL OPEN CUFF
- 6 TWO DOUBLE NEEDLE TOP-STITCHED LOWER POCKETS WITH FLAPS
- 7 BACK VENT FOR EASE OF WALKING AND SITTING
- 8 FINISH DOES NOT CONTAIN INTENTIONALLY ADDED PFAS



## WOMEN'S FLAME-RESISTANT/ CHEMICAL-SPLASH PROTECTION LAB COAT



NFPA® 2112 Compliant

Concealed snap front closure. Black lay-down collar for easy recognition as a CP lab coat. FR-only knit cuffs – safer than typical open cuff. Splash resistant pass-throughs for easy inner pocket access. Pockets include one two-needle top-stitched chest pocket with pencil stall and two double-needle top-stitched lower pockets with flaps. Side vents for ease of walking and sitting.

**KNR7** - Women's (Reg) XS-2XL.  
Fit Chart LFC-80.

**Fabric:** Flame-resistant, 4.5 oz. (150 g/m<sup>2</sup>)  
93% Meta-Aramid / 5% Para-Aramid / 2% Anti-Stat

**Protection:** Short-duration thermal hazards and inadvertent liquid chemical splashes. Arc Rating ATPV 5.2 calories/cm<sup>2</sup>.

**Color:** Royal Blue (RB)



### FEATURES

- 1 BLACK LAY-DOWN COLLAR FOR EASY RECOGNITION AS A CP LAB COAT
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- 7 SIDE VENTS FOR EASE OF WALKING AND SITTING
- 8 FINISH DOES NOT CONTAIN INTENTIONALLY ADDED PFAS



# ICON GUIDE

IL-LS

## INDUSTRIAL LAUNDRER - LIGHT SOIL -

This is a less aggressive (industrial) laundering process commonly used on uniforms which are lightly soiled or made of fabrics that are not designed to withstand higher wash temperatures or harsher chemistry. In a typical light soil formula, water temperatures are usually held to a maximum of 140°F and pH to 10.5 max.

HW

**HOMEWASH** - A laundering process normally defined as washing in a residential type top- or front-loading unit followed by tumble drying. Detergents used in this process are formulated for home use and are readily available on the consumer market.

**NOTE:** For chemical protective garments use low alkalinity chemistry (500 ppm or less active alkalinity) to maximize splash repellency

**DO NOT BLEACH** - The use of bleach is NOT recommended for Westex® ShieldCXP™ garments as over-use can degrade the repellency performance and may cause fabric strength and color loss over time. Chlorine bleach will not affect the flame resistance properties of the fabric.



**CP 100** - Garments that provide repellency for a low level of liquid chemical-splash protection. They repel many but not all acids, corrosives, oxidizers and polar organic solvents<sup>1</sup>, that typically have medium to high surface tension and medium to high polarity. Their application is only for inadvertent liquid chemical-splash of small volumes at atmospheric pressure.

<sup>1</sup>See bulwark.com for more information



**CATEGORY 1 PROTECTION** - Arc-rated FR long-sleeve shirt and FR pants or FR coverall with a required minimum Arc Rating of 4 cal/cm<sup>2</sup>.



**NFPA® 2112 COMPLIANT** - Bulwark® Protection offers flame-resistant protective garments that are certified by Underwriters Laboratories to meet the requirements of NFPA® 2112 Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire, 2023 Edition. NFPA® 2113 Standard on Selection, Care, Use, and Maintenance of Flame Resistant Garments for Protection of Industrial Personnel Against Flash Fire, 2020 Edition, requires that garments cover the upper and lower body and flammable underlayers as completely as possible. Bulwark® garments meet this requirement either as a single garment such as a coverall or when worn with another certified garment such as a shirt or pants to provide both upper and lower body coverage.



## SIZING

Refer to Bulwark.com for fit charts.

## PRODUCT GUARANTEE

All Bulwark branded garments meet the performance requirements of the specifications and standards as indicated on the garment labels and in our product literature. The flame-resistant properties of Bulwark FRCP fabric are guaranteed for the life of the garment when proper care, laundry, and maintenance procedures and instructions are followed as stated in the garment care label.

## LEGAL

Bulwark is a registered trademark of Workwear Outfitters, LLC. Nomex is a registered trademark under E.I. duPont de Nemours and Company. NFPA is a registered trademark of National Fire Protection Association. UL is a registered trademark of Underwriters Laboratories. Milliken, Westex, and ShieldCXP are all trademarks of Milliken and Company.



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