



Kappler®

Catálogo ENG

Fire Equipment de México
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FEM S.A.
Fire Equipment de México

to protect those who keep us safe

Suit Selection

Made Simple



3 steps to the right suit.

All Kappler garments are multi-use, single-exposure apparel. Follow these steps to ensure the right protection – or just use HazMatch®, Kappler’s Protective Clothing Selection Guide.

1

ProVent® see pages 10-11

Zytron® see pages 12-21

Select a fabric.

Find a fabric proven against your hazard – a complete list of chemicals tested can be found on the HazMatch app or online at hazmatch.com.



2

Serged

Bound

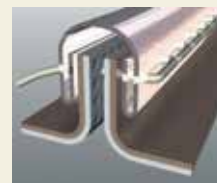
Choose the seam.

The right seam ensures your garment is constructed to match your specific hazard.

Produced when three threads are interlocked around the edges of two pieces of fabric. For particulates plus residual liquids to light splash where no skin hazard is involved.



Produced with two pieces of fabric joined by a piece of binding, then stitched through all layers. For particulates plus residual liquids to light splash where skin hazard is involved, and moderate splash for non skin hazards.



3

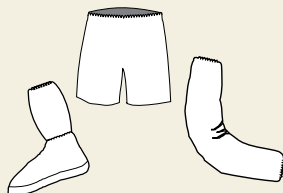
Partial Body

Aprons/Labcoats

Coveralls

Pick your design.

Many styles are available in the garment types shown here. See a complete list at kappler.com.

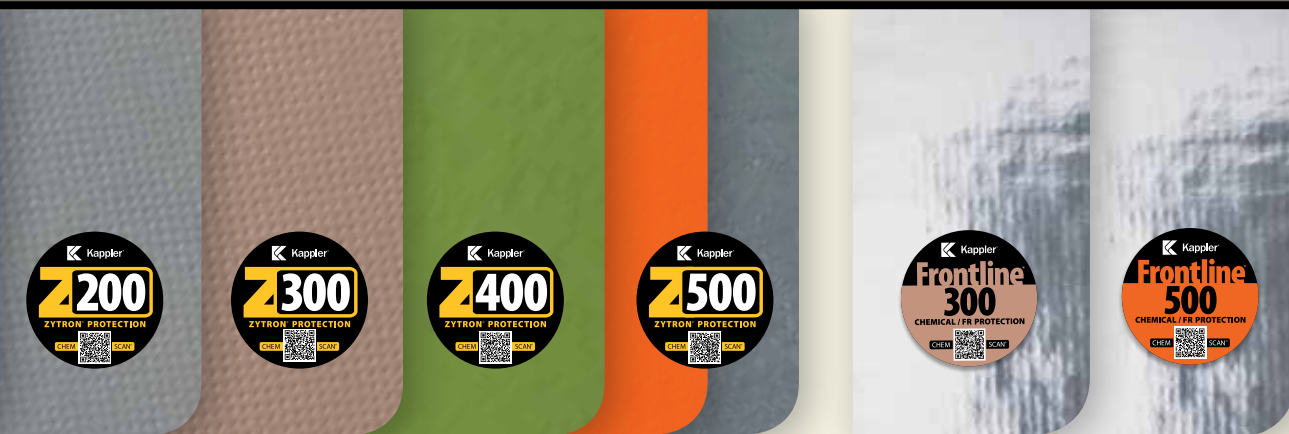


HazMatch®. The app is free, the data priceless.

HazMatch® is our easy-to-use selection tool that helps you make informed decisions about protective apparel. Search by chemical or by fabric, and save results to meet OSHA Hazard Assessment requirements. Download the free app or use it online at hazmatch.com – it's fast, easy, free, and only from Kappler.

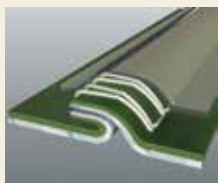


Frontline® see pages 22-25



Heat Sealed/Taped

A strong, gas-tight seam produced when a serged seam is covered with seam tape, then sealed with heat or adhesive. For particulates, moderate to heavy splash for skin hazards, and vapor hazards.



Ultrasonic

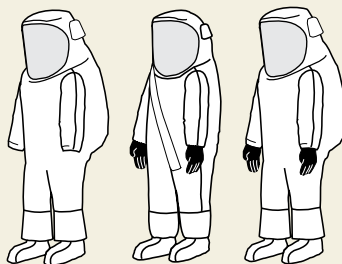
Two fabric pieces are ultrasonically welded to create a seam with no needle holes. An Ultrasonic/Taped seam is available for additional strength. For particulates and light to moderate liquid splash.



Splash Suits



Splash/Vapor Encapsulating Suits



Kappler Custom

And Special Services

Kappler offers design options for any situation. See page 29.

Standard Styles

Page 29 Describes Custom Options

Contact customer service for ProVent 6000BC Styles.

Sleeves and Shoe/Boot Covers - ProVent® and Zytron® Fabrics



Elastic at Both Ends

ProVent 7000
Serged – P75501
One Size 18", White
100 prs/cs, 6 lb / 2.7 kg



Knee-High, Hook and Loop Ankle Fastener, Elastic at Top, 2-Ply Sole

ProVent 10,000
Ultrasonic – MN026
SM-XL, Blue or White
50 prs/cs, 11 lb / 5 kg



Knee-High, Elastic at Top and Ankle

ProVent 7000
Ultrasonic – 10423 NS
Gray Skid Resistant Bottom
One Size, White
50 prs/cs, 5 lb / 2.3 kg



Knee-High, Elastic Top

Zytron 200
Bound – Z2B017
One Size, Gray
100 prs/cs, 18 lb / 4.1 kg

Gowns, Lab Coats and Shorts - ProVent and Zytron Fabrics



Wrap-Around Gown, Two Neck Ties, Two Waist Ties, Knit Cuffs, Non-Sterile

ProVent 7000
Serged – LS112 2H
XS-5X, White
30/cs, 16 lb / 7.2 kg



Wrap-Around Gown, Hook and Loop Neck Closure, Two Waist Ties, Knit Cuffs, Non-Sterile

ProVent 7000
Serged – LS101
XS-5X, White
30/cs, 15 lb / 6.8 kg



Wrap-Around Gown, Two Neck Ties and Two Waist Ties, Elastic Wrists, Non-Sterile

ProVent 7000
Serged – LS112
XS-5X, White
50/cs, 17 lb / 7.7 kg



Open Back Gown, Hook and Loop Neck Fasteners, Waist Ties, Knit Cuffs, Non-Sterile

ProVent 10,000
Ultrasonic – MN108
XS-5X, Blue or White
30/cs, 16 lb / 7.2 kg



Full Cut, 5-Snap, Collar

ProVent 7000
Serged – P75210
No Pockets
XS-5X, White
30/cs, 8 lb / 3.6 kg

ProVent 10,000
Serged – P75212
With Pockets
XS-5X, White
30/cs, 8 lb / 3.6 kg



Full Cut, 6-Snap Front or Zipper Closure, Knit Collar and Cuffs, 3 Sewn-on Pockets (1 Breast and 2 Hip)

ProVent 10,000
Serged – MS235
Snap closure
XS-5X, Blue or White
30/cs, 18 lb / 8.2 kg

Serged – MS225
Zipper closure
XS-5X, Blue or White
30/cs, 18 lb / 8.2 kg



Modesty Shorts, Elastic Waist

ProVent 7000
Serged – LS810
XS-5X, White
100/cs, 9 lb / 4.1 kg

Total Encapsulating Suits - Zytron and PVC Fabrics



Splash Total Encapsulating Suit

Rear Entry, Expanded Back or Flat Back, Large PVC Visor, 1 Exhaust Port, Elastic Wrists, Attached Sock Booties with Splash Guards, Single Heat Sealed/Taped Seams, Double Storm Flaps with Hook and Loop Fasteners, Cloth Zipper

Zytron 200
Rear Entry, Bound
Z2B571 – Expanded Back
XS-5X, Gray • 6/cs, 15 lb / 6.8 kg

Rear Entry, Heat Sealed/Taped
Z2H371 – Expanded Back
XS-5X, Gray • 6/cs, 19 lb / 8.6 kg

Rear Entry, Bound
Z2B371 – Flat Back, Side Air Inlet
XS-5X, Gray • 6/cs, 11 lb / 5 kg

Rear Entry, Heat Sealed/Taped
Z2H371 – Flat Back, Side Air Inlet
XS-5X, Gray • 6/cs, 12 lb / 5.4 kg

Zytron 300
Rear Entry, Heat Sealed/Taped
Z3H571 – Expanded Back
XS-5X, Tan • 6/cs, 20 lb / 9 kg

Rear Entry, Heat Sealed/Taped
Z3H371 – Flat Back, Side Air Inlet
XS-5X, Tan • 6/cs, 14 lb / 6.4 kg

Zytron 400
Rear Entry, Heat Sealed/Taped
Z4H571 – Expanded Back
XS-5X, Green • 6/cs, 22 lb / 10 kg

Rear Entry, Heat Sealed/Taped
Z4H371 – Flat Back, Side Air Inlet
XS-5X, Green • 6/cs, 16 lb / 7.2 kg

Zytron 500
Rear Entry, Heat Sealed/Taped,
Expanded View AntiFog Visor System
Z5H573 – Expanded Back
XS-5X, Orange or Charcoal
1/cs, 7 lb / 3.2 kg

Rear Entry, Heat Sealed/Taped,
Expanded View AntiFog Visor System
Z5H373 – Flat Back, Side Air Inlet
XS-5X, Orange or Charcoal
1/cs, 7 lb / 3.2 kg



Vapor Total Encapsulating Suit

Front Entry or Rear Entry, Expanded Back or Flat Back, Expanded View AntiFog Visor System, 2 Exhaust Valves, 48" Gas-Tight Urethane Zipper, Double Storm Flaps with Hook and Loop Fasteners, Attached Sock Booties with Splash Guards, Heat Sealed/Taped Seams, Field Replaceable Butyl Gloves. HazMat Styles Include 2N1® Glove System

Zytron 500
Front Entry, Heat Sealed/Taped
Z5H552 – Expanded Back
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

Rear Entry, Heat Sealed/Taped
Z5H553 – Expanded Back
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

Front Entry, Heat Sealed/Taped
Z5H352 – Flat Back
Must specify pass-thru option
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

Rear Entry, Heat Sealed/Taped
Z5H353 – Flat Back,
Must specify pass-thru option
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

HazMat Front Entry, Heat Sealed/Taped
Z5H582 – Expanded Back
Double Sealed Seams,
Knee Reinforcements,
2N1® Glove System
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

HazMat Rear Entry, Heat Sealed/Taped
Z5H583 – Expanded Back
Double Sealed Seams,
Knee Reinforcements,
2N1® Glove System
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg



Training Suit

Front Entry or Rear Entry, Expanded Back, Large PVC Visor, 1 Exhaust Port, 48" Zipper, Storm Flap with Hook and Loop Fasteners, Attached Sock Booties with Splash Guards, Serged Seams, Sewn On PVC Gloves

Zytron 500
Front Entry, Serged
Z5S555 – XS-5X,
Orange or Charcoal
1/cs, 7 lb / 3.2 kg

Rear Entry, Serged
Z5S556 – XS-5X,
Orange or Charcoal
1/cs, 7 lb / 3.2 kg

PVC
Front Entry, Serged
PVS555 – SM-4X
Yellow 1/cs, 10 lb / 4.5 kg

Frontline 300

Splash-And-Flash Protection For Petrochemical Environments.

- Three-way protection for chemical, flash-fire and radiant heat.
- Ideal for petrochemical line break operations – developed with input from petrochemical safety officers.
- Proven with demanding Pyroman Thermal Manikin testing.
- Multi-use, single-exposure garment provides economical alternative to expensive reusable FR apparel.
- Coverall and ensemble styles offer flexibility for a wide variety of work situations.
- Applications: Line maintenance, tank cleaning, refueling situations, clandestine lab response.



Frontline 300

ASTM F1001 Chemical Test Battery*

Chemical	Minutes
Acetone	>480
Acetonitrile	>480
Carbon Disulfide	>480
Dichloromethane	10
Diethylamine	>480
Dimethylformamide	>480
Ethyl Acetate	>480
n - Hexane	>480
Methyl Alcohol	>480
Nitrobenzene	>480
Sodium Hydroxide	>480
Sulfuric Acid	>480
Tetrachloroethylene	>480
Tetrahydrofuran	>480
Toluene	>480
Gases	
Ammonia Gas	>480
1,3 Butadiene Gas	>480
Chlorine Gas	>480
Ethylene Oxide Gas	>480
Other Chemicals Tested	
Benzene	>480
Diesel Fuel	>480
Diethylethanolamine	>480
Gasoline	>480
Hydrofluoric acid (48%)	>480
Kerosene	>480
Methanol	>480

* Industrial chemical testing was conducted in accordance with ASTM F 739 with normalized breakthrough times reported in minutes. For detailed technical data and physical properties see page 30 or visit kappler.com.

Frontline® 300



Shown above are typical garment types for this fabric. View standard styles at kappler.com and see page 29 for custom options.



Coverall styles feature special hood design for better fit against respirator.

Frontline 300 offers true "splash-and-flash" protection, plus excellent radiant heat protection.

Reinforced knee area for added confidence and work flexibility.

Frontline garments are designed for chemical flash-fire protection FOR ESCAPE ONLY in the event of a chemical flash fire.

ChemScan® labels – quick, accurate and only from Kappler.
Scan the label with your phone's QR reader for a complete list of chemicals tested against your garment's protective fabric.

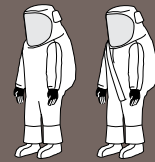
Frontline 500

NFPA 1991 Certified Apparel For Chemical Flash-Fire Protection.

- Single suit provides three-way protection – chemical, flash-fire and radiant heat protection.
- Single garment eliminates need for two-suit NFPA 1991 configuration.
- Provides excellent “survivability” performance – 0% body burn in Pyroman Thermal Manikin testing.
- NFPA-certified multi-use, single-exposure garment provides economical alternative to expensive FR reusables.
- Applications: Hazmat response and chemical handling with potential for chemical flash-fire.



Frontline® 500



Shown above are typical garment types for this fabric. View standard styles at kappler.com and see page 29 for custom options.

Frontline 500 ASTM F1001 Chemical Test Battery*

Chemical	Minutes
Acetone	>480
Acetonitrile	>480
Carbon Disulfide	>480
Dichloromethane	253
Diethylamine	>480
Dimethylformamide	>480
Ethyl Acetate	>480
n - Hexane	>480
Methyl Alcohol	>480
Nitrobenzene	>480
Sodium Hydroxide	>480
Sulfuric Acid	>480
Tetrachloroethylene	>480
Tetrahydrofuran	>480
Toluene	>480
Gases	
Ammonia Gas	>480
1,3 Butadiene Gas	>480
Chlorine Gas	>480
Ethylene Oxide Gas	>480
Hydrogen Chloride Gas	>480
Methyl Chloride Gas	>480

Chemical Warfare Agent Data**

Chemical Agent	Minutes	Criteria
Bis (2-chloroethyl) sulfide (Mustard:HD)	>480	4.0 ug/cm ²
Isopropyl methylfluorophosphonate (Sarin:GB)	>480	1.25 ug/cm ²
Chlorovinyl arsinedichloride (Lewisite:L)	>240	4.0 ug/cm ²
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve:VX)	>480	1.25 ug/cm ²

* Industrial chemical testing was conducted in accordance with ASTM F 739 with normalized breakthrough times reported in minutes. **Chemical Warfare Agent testing was conducted in accordance with MIL-STD-282 and/or NFPA 1994-2001 with breakthrough times reported based on total cumulative permeation. For detailed technical data and physical properties see page 30 or visit kappler.com.



New Expanded-View AntiFog Visor System is standard on all gas-tight suits.

Removable knitted Kevlar overglove, plus field-replaceable 2N1® Glove System which eliminates the problem of inner glove inversion.

Highly flexible 48" gas-tight AquaSeal® zipper facilitates easier donning and doffing.

Frontline garments are designed for chemical flash-fire protection FOR ESCAPE ONLY in the event of a chemical flash fire.

Accessories And Specialty Products



ChemTape®

ChemTape is Kappler's patented chemical-resistant tape designed specifically for protective apparel. Provides added assurance for taping around gloves, boots, respirators and storm flaps, plus shelter-in-place applications. Rolls are 2" X 60 yd (48 mm wide and 55 meters long); 24 rolls per case. Style 99402 YW.

ChemTape® Responder ID Kit

Large, easy-to-read identification numbers enhance safety where worker identities are obscured. Self-adhesive, easy to apply, complete set includes numbers 0-9. 24 sets per case. Style 99415.



ChemTape

ASTM F1001 Chemical Test Battery*

Chemical	Minutes
Acetone	>480
Acetonitrile	>480
Carbon Disulfide	>480
Dichloromethane	>480
Diethylamine	160
Dimethylformamide	>480
Ethyl Acetate	>480
n - Hexane	>480
Methyl Alcohol	>480
Nitrobenzene	>480
Sodium Hydroxide	>480
Sulfuric Acid	>480
Tetrachloroethylene	>480
Tetrahydrofuran	>480
Toluene	>480

Chemical Warfare Agent Data**

Chemical Agent	Minutes	Criteria
Bis (2-chloroethyl) sulfide (Mustard:HD)	>480	4.0 ug/cm2
Isopropyl methylfluorophosphonate (Sarin:GB)	>480	1.25 ug/cm2
Chlorovinyl arsinedichloride (Lewisite:L)	NT	NT
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve:VX)	>480	1.25 ug/cm2

* Industrial chemical testing was conducted in accordance with ASTM F 739 with normalized breakthrough times reported in minutes. **Chemical Warfare Agent testing was conducted in accordance with MIL-STD-282 and/or NFPA 1994-2001 with breakthrough times reported based on total cumulative permeation.

Accessory and specialty products continue through page 28. For a complete list of Kappler accessories or additional details call customer service at 1.800.600.4019.

Kappler's Digital Pressure Test Kit Is Flexible, Easy To Use And Extremely Accurate.

Kappler's automated Digital Pressure Test Kit improves the efficiency and accuracy of gas-tight garment tests for both ASTM and CE methods. Our unique design features a digital readout for more accurate testing, while a large LCD touchscreen allows easy test criteria selection and data input. All fittings and hoses are included – the user simply provides a Grade D air supply with a 1/4 inch NPT fitting. Press START and the test is performed automatically, allowing the user to handle other duties while the test is in process. For easy and accurate record-keeping, test data can be copied to the provided USB stick via the built-in USB port. Style AKMOC.

A video of the test procedure and data formatting program can be found online at kappler.com/resources under "Training Videos."



USB port allows easy connection to a data storage device.

Large, easy-to-read touchscreen for selecting test criteria and data input.

2N1® Glove System Eliminates Inner Glove Inversion.

Kappler's 2N1® Glove System – a true innovation that eliminates the problem of inner glove inversion when the user removes a hand from the double-glove configuration common to gas-tight garments. This allows the user to easily remove or reinsert the hands into the glove without the annoying inversion. This is especially helpful when a user needs to free the hands inside the suit to adjust the respirator face piece, or access communication system or other equipment. The 2N1 Glove System also provides improved comfort and manual dexterity with a unique glove configuration. Contact Customer Service for style options.

The 2N1 Glove System is available on Kappler Zytron® 500 Hazmat styles and NFPA Certified styles in both Zytron® 300, 500 and Frontline® 500 fabrics.



Unique installation technique using rigid glove ring makes it easier to insert or withdraw hands.

Unique configuration also provides improved comfort and dexterity.

Accessories And Specialty Products

Zytron® 300 Half C Jacket

Kappler's Zytron 300 Half C Jacket is ideal for supplied-air work applications. The flat back design includes hood with PVC faceshield, double storm flaps with hook and loop fasteners and attached CP Cuff Option for easy glove taping. Loops for air system attached inside the hood. Style Z3H763 (Z3H763-30 includes tubes and Nupro valve), 6 garments per case.



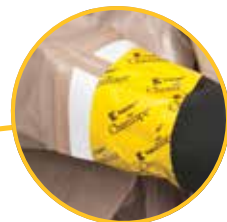
Male Glove Insert Cones

Kappler's insert cones interface glove to suit and provide smooth taping surface. 1 pair per case, style AG0AR.



CP Cuff Option For Any Suit

Taping gloves with ChemTape® has become standard procedure for good protection. Our CP Cuff Option, available on any Kappler taped seam chemical garment, makes the job faster, easier and more effective. Eliminate chemical burns on hands and wrists – ask Customer Service about adding the CP Cuff Option to your next apparel order.



Attached CP Cuff Option makes taping fast and easy.

Cooling Vest

The Kappler Cooling Vest with patented Phase Change Material is lightweight and provides hours of cooling. Available in two cooling-capacity sizes, in mesh or FR Cotton. Contact Customer Service for style numbers.



For a complete list of Kappler accessories or additional details call customer service at 1.800.600.4019.

Decon Shower

Kappler's patented Decontamination Shower is made with Zytron 500 fabric to ensure hazardous material run-off is safely contained. The removable spray wand with adjustable shut-off valve and ergo-grip handle allow better water control during decon. Simple design and snap-lock components mean easy setup and take-down. Catch Basin w/ frame and shower wand, Style Z5HD0. Shower curtain and frame, Style Z5HD1.





Don't See The Style You Need?

If you need something not shown in our standard styles, ask about Kappler's custom solutions. We offer many options to make your favorite style a perfect fit. Popular items include:

- Glove options, a Kappler specialty, can be added to any heat sealed/taped suit style; they include the 2N1® Glove System and permanently attached gloves (*shown*). **(A)**
- Fall protection harness pass-throughs for gas-tight suits. **(B)**
- Special pass-throughs and tool/equipment loops. **(C)**
- Air-fed hood. **(D)**
- CP Cuff Option. **(E)**

Whatever your application or hazard scenario calls for, Kappler can configure the apparel to meet your needs. Just contact Customer Service at 1.800.600.4019 or email customer.service@kappler.com.

Need A Specific Chemical Tested? Ask About Our Free Testing Program.

If you need to document a Kappler fabric against a specific hazard not already in our database, we make it easy. We'll conduct third-party testing on your chemical, and if the fabric meets your requirements, you agree to purchase a standard minimum number of garments. For details contact Customer Service at 1.800.600.4019 or email customerservice@kappler.com.



Technical Data

And Testing Details

ASTM F1001 Chemical Test Battery*

CHEMICAL	Zytron®						Frontline®		ChemTape®
	100	100XP	200	300	400	500	300	500	
Acetone	NT	NT	17	>480	>480	>480	>480	>480	>480
Acetonitrile	NT	NT	52	87	>480	>480	>480	>480	>480
Carbon Disulfide	NT	NT	2	>480	>480	>480	>480	>480	>480
Dichloromethane	NT	NT	2	70	88	>480	10	253	>480
Diethylamine	NT	NT	21	>480	>480	>480	>480	>480	160
Dimethylformamide	NT	NT	77	>480	>480	>480	>480	>480	>480
Ethyl Acetate	NT	NT	14	>480	>480	>480	>480	>480	>480
n-Hexane	NT	NT	7	>480	>480	>480	>480	>480	>480
Methyl Alcohol	NT	NT	>480	55	>480	>480	>480	>480	>480
Nitrobenzene	NT	NT	97	>480	>480	>480	>480	>480	>480
Sodium Hydroxide	>480	>480	>480	>480	>480	>480	>480	>480	>480
Sulfuric Acid	>480	>480	>480	>480	>480	>480	>480	>480	>480
Tetrachloroethylene	NT	NT	21	>480	>480	>480	>480	>480	>480
Tetrahydrofuran	NT	NT	3	>480	>480	>480	>480	>480	>480
Toluene	NT	NT	6	>480	>480	>480	>480	>480	>480
GASES									
Ammonia Gas	NT	NT	NT	39	NT	>480	>480	>480	NT
1,3 Butadiene	NT	NT	NT	>480	NT	>480	>480	>480	NT
Chlorine Gas	NT	NT	NT	>480	NT	>480	>480	>480	NT
Ethylene Oxide Gas	NT	NT	NT	81	305	>480	>480	>480	NT
Hydrogen Chloride Gas	NT	NT	NT	>480	NT	>480	NT	>480	NT
Methyl Chloride Gas	NT	NT	NT	>480	NT	>480	NT	>480	NT

Chemical Warfare Agent Data**

CHEMICAL AGENT	Zytron®300		Zytron®500		Frontline®500		ChemTape®	
	Breakthrough		Breakthrough		Breakthrough		Breakthrough	
	Time	Criteria	Time	Criteria	Time	Criteria	Time	Criteria
Bis (2-chloroethyl) sulfide (Mustard:HD)	>480	4.0 ug/cm ²	>480	4.0 ug/cm ²	>480	4.0 ug/cm ²	>480	4.0 ug/cm ²
Isopropyl methylfluorophosphonate (Sarin:GB)	>480	1.25 ug/cm ²	>480	1.25 ug/cm ²	>480	1.25 ug/cm ²	>480	1.25 ug/cm ²
Chlorovinyl arsinedichloride (Lewisite:L)	>240	4.0 ug/cm ²	>480	4.0 ug/cm ²	>240	4.0 ug/cm ²	NT	NT
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve:VX)	>480	1.25 ug/cm ²	>480	1.25 ug/cm ²	>480	1.25 ug/cm ²	>480	1.25 ug/cm ²

* Industrial chemical testing was conducted in accordance with ASTM F 739 with normalized breakthrough times reported in minutes.

** Chemical Warfare Agent testing was conducted in accordance with MIL-STD-282 and/or NFPA 1994-2001 with breakthrough times reported based on total cumulative permeation.

Note: Sources for all chemical test data are independent laboratories. All tests were performed under laboratory conditions and not under actual use conditions. Tests were performed on material samples, not actual garments.

Kappler, Know What You're Getting Into, ProVent, Zytron, Frontline, ChemTape, HazMatch, 2N1, and ChemScan are trademarks of Kappler, Inc. AquaSeal is a trademark of YKK. Responder, Reflector, Pro/Shield, NexGen, SuitSmart and CPF are trademarks of E. I. du Pont de Nemours and Company. HazProof is a trademark of Tingley Rubber.

Typical Physical Properties	Zytron®						Frontline®	
	100	100XP	200	300	400	500	300	500
Grab Tensile Strength MD* ASTM D751(lbs/N)	32 / 142	49 / 217	52 / 231	78 / 347	155 / 689	120 / 534	134 / 596	137 / 609.38
Grab Tensile Strength CD* ASTM D751(lbs/N)	24 / 106	38 / 169	39 / 173	69 / 307	152 / 676	121 / 538	125 / 556	166 / 738.37
Tear Resistance Trapezoid MD*(lbs/N) <i>method details below**</i>	11.5 / 51	17.4 / 77	22.9 / 101.8	16.6 / 74	42.2 / 188	35 / 156	13.7 / 60.94	13.5 / 60.05
Tear Resistance Trapezoid CD*(lbs/N) <i>method details below**</i>	7.4 / 32	10.3 / 45	9.6 / 42.7	22.1 / 98	50.6 / 225	37 / 168	10.7 / 44.79	14 / 62.27
Ball Burst ASTM D3787 (lbs/N)	28 / 124	46 / 204	43 / 191	58 / 258	153 / 681	128 / 569	123 / 547.10	134 / 596.03
Flammability Resistance ASTM F1358	N/A	N/A	N/A	N/A	N/A	N/A	PASS	PASS

*MD - Machine Direction, CD - Cross Direction
**ASTM D1117 (Zytron 100, 200) ASTM D5587 (Zytron 300, 400, 500) ASTM D571 (Frontline 300, 500)



Frontline Pyroman Testing – The Inside Story On Survivability.

Because of Kappler’s commitment to user survivability, Frontline garments designed to protect against a chemical flash-fire are subjected to intense testing in order to simulate real-world exposure. Chemical flash-fires are known to generate heat up to 1900° F. The Pyroman Thermal Manikin test at North Carolina State University produces this environment for 6 seconds in order to predict a percentage of body burn a wearer might experience. Sensors on the manikin indicate not only the area of the body affected, but also predict severity of the burn. The Frontline 500 encapsulating suit performed exceptionally well in both measurements, with 0% body burn indicated. The Frontline 300 ensemble garment indicated less than 1% body burn. For more details contact Customer Service at 1.800.600.4019 or email customerservice@kappler.com.



Scan to see video.

Additional Frontline® Testing Information – Frontline 300 and 500 Heat, Flame and Thermal Data

Frontline 300 and Frontline 500 have been tested for thermal protective performance (TPP) in accordance with ISO 17492, Clothing for Protection Against Heat and Flame. Frontline 300 showed a TPP value of 16, and Frontline 500 showed a TPP value of 32.

Both Frontline 300 and 500 meet the requirements for flame resistance in accordance with ASTM F1358.

Frontline 500 meets requirements of NFPA 1991, including base requirements plus optional Flash-Fire and Liquefied Gas requirements.

Both Frontline 300 and 500 have been tested in accordance with ASTM F 1930-00 Standard Test Method for Evaluation of Flame Resistant Clothing for Protection Against Flash Fire Simulations Using an Instrumented Manikin. The Frontline 300 ensemble garment indicated less than 1% body burn after a three-second burn test, and the Frontline 500 indicated 0% body burn after a six-second test.

Check HazMatch® For Complete Chemical Test Results.

The details shown here represent only a fraction of the chemicals tested against Kappler fabrics – a list that’s constantly being expanded. The latest list of chemicals in the Kappler database is always available via HazMatch – get the mobile app or use it online at kappler.com. If you don’t see your specific chemical, see page 29 for details on Kappler’s free testing program.



WARNING: This information is based on technical data that Kappler believes to be reliable. It is subject to revision as additional knowledge and experience are gained. The website will contain Kappler’s most up-to-date product information, and customers who receive pamphlets, brochures or other literature should be aware that such “hard copy” information may not be as current as the information on Kappler’s website. Customers also should recognize that there are uses, environments and chemicals for which Kappler products, garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the product, garment and/or fabric is appropriate for the intended use and meets all specified government and/or industry standards. Also, the customer should review all available information on the website to understand the uses – and limitations – on ALL products, garments and fabrics which Kappler makes available. **CAUTION:** Do not use for fire protection. Avoid open flame or intense heat.

Precision Decision

Choose With Confidence

When there's no room for guesswork, Kappler delivers the data and support you need.

Whether you're responding to a hazmat call or specifying protective apparel for a routine bid, Kappler helps you choose with confidence.

Our HazMatch® selection guide lets you search by chemical or by fabric and easily match a garment that's safe for your scenario. Use it online or get the free app for a quick, accurate recommendation.



ChemScan QR code
garment label.

Got a suit but not sure if it's right for the hazard? Just scan the ChemScan® QR code label for the latest test results for that specific fabric.

Our website is an excellent resource for everything from how-to videos to NFPA details. The Kappler University Road Show and Workshops offer comprehensive user education. And our no-nonsense Tech Support is just a phone call away at 1-800-600-4019.

At Kappler, the suit is just the beginning. The data – and how to use it – always lets you know what you're getting into.



Use HazMatch online at kappler.com or get the free app.

MADE IN THE USA



Protecting Workers, Protecting American Jobs.

We never forget that everyone who dons a Kappler suit has a family waiting at home. That's why we ensure every stitch, seam and piece of fabric meets stringent quality standards. Each garment is made with American pride by dedicated and skilled employees like those shown here. As you consider your options for protective apparel, we'd just like to say thanks – and remind you that Made In The USA is alive and well at Kappler.

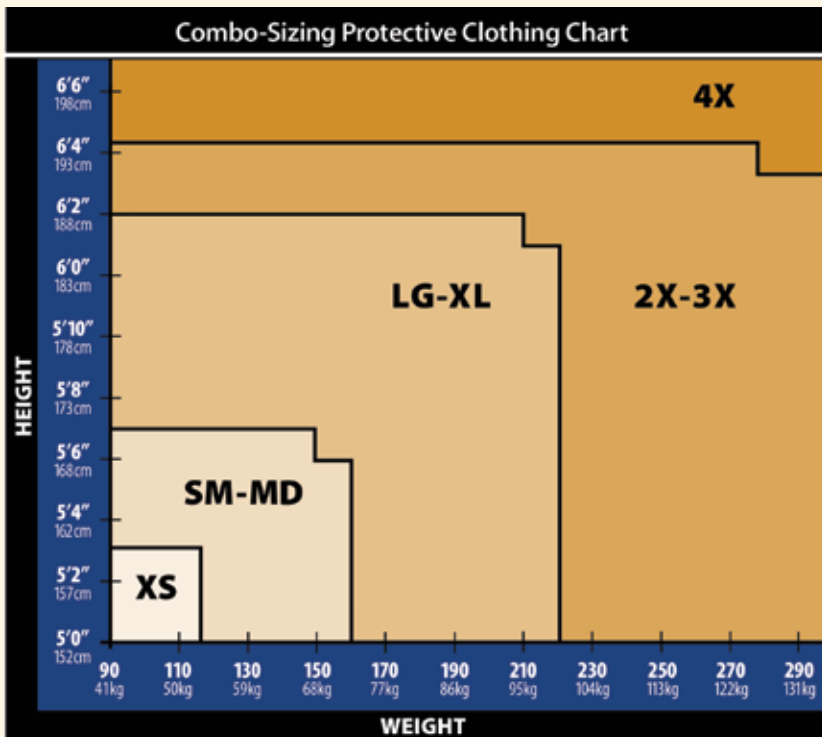


Know What You're Getting Into.

800.600.4019 • kappler.com
customerservice@kappler.com

Our Sizing System Reduces Inventory And Simplifies Your Selection Process.

Our garments are designed and constructed with the wearer in mind, and that includes sizing that simplifies the decision process. Typically worn over other clothing, Kappler's garments are designed so that "combination sizes" comfortably fit the vast majority of users. Plus, with only five size options (versus the normal eight), you simplify ordering logistics and reduce inventory requirements.



NOTE: Zytron 500 style Z5HTN C2 and certain Medical styles use specific sizing (XS, SM, MD, LG, XL, 2X, 3X, 4X and 5X). Please contact customer service for details.

WOSB PERTINENT CODES & INFORMATION

DUNS # 180036501 • CAGE Code 0WR15 • EIN 63-0943684

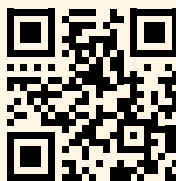
NAICS Codes 315210, 315220, 315280, 315990, 339113, 541715



Know What You're Getting Into.

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