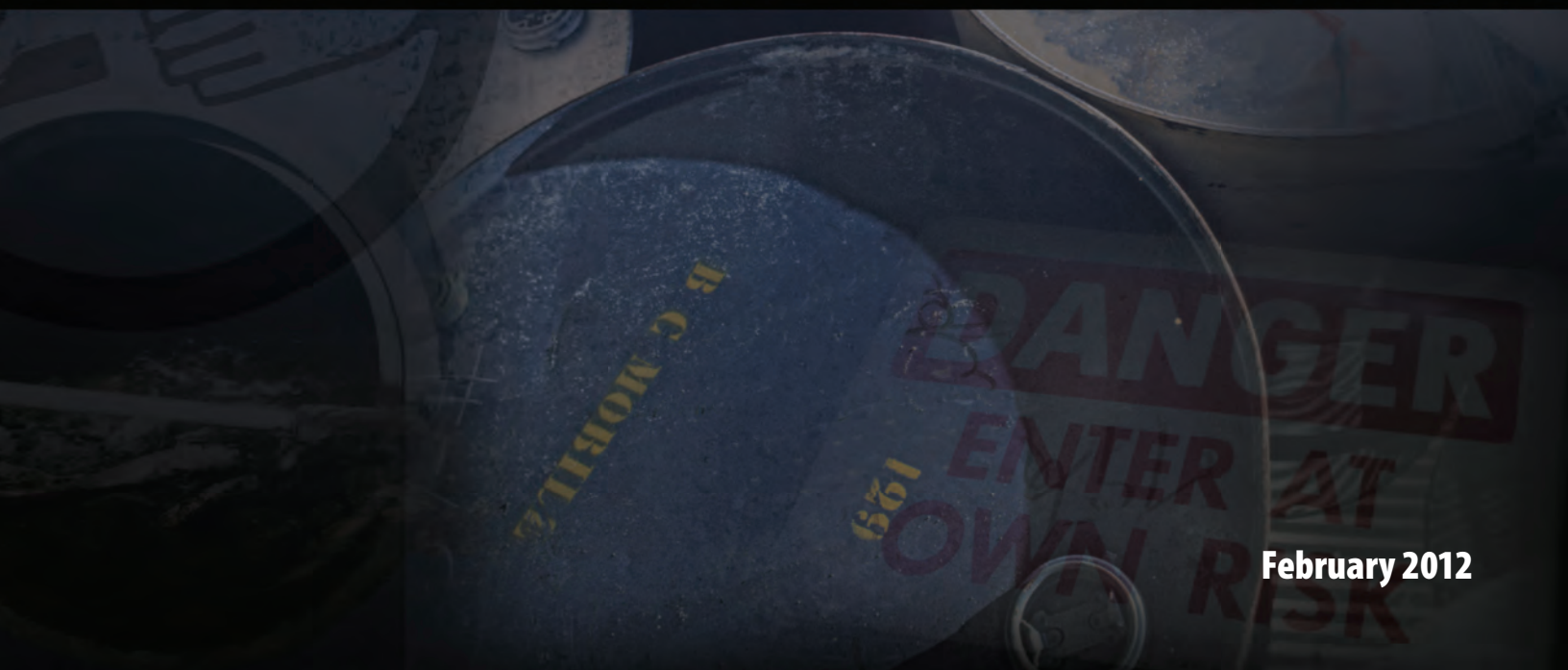


Know What You're Getting Into.



February 2012

THE SIGN SAYS DANGER. THE SUIT SAYS KAPPLER.

RELAX. It takes a lot of confidence to put your brand on a Level A suit. It's a promise of protection we don't take lightly. But from gas-tight garments to basic coveralls, we're the first to tell you:

It's not just the suit

It's knowing it's the right suit, made from the right fabric, with the right seam. And the right test data that confirms all of the above. And it's knowing something about the people behind the technology that makes the protection possible in the first place.

In 1976, very little was known about chemical protective clothing. And a little-known company called Kappler was just getting started on its mission to "keep bad stuff off people". The years since have seen Kappler define an entire industry with patented fabrics, innovative seaming technology and unique garment designs. For more than thirty years, Kappler has built a reputation for quality, innovation and straightforward advice on what to wear. Today more than ever, the Kappler brand on your garment means you always know what you're getting into.



Know What You're Getting Into.



Made in the USA takes on special meaning when you don a Zytron® or Frontline® garment. American-made quality provides an extra edge when it comes to the confidence factor, plus you benefit from faster delivery.





ProVent®



Zytron® 100XP



Zytron® 500



Frontline® 500

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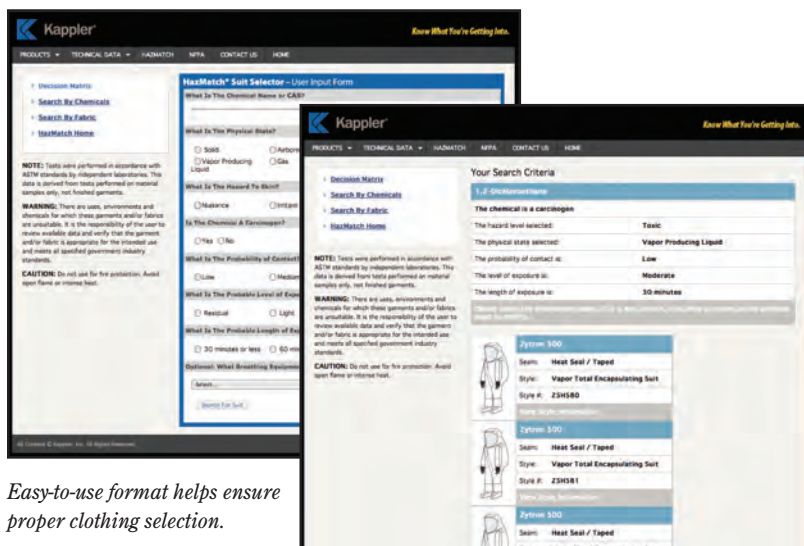
Introducing new QR code ChemScan™ garment labels – see pages 6 and 10 for details.

HazMatch®

Online Selection Guide

Precision Decision. When there's no room for guesswork.

Whether you're in hazmat response mode or specifying apparel for a routine bid, HazMatch® helps you make apparel choices with confidence. HazMatch is Kappler's online selection guide that lets you search by chemical or by fabric. Just a few clicks and you can easily find a garment that's a safe match for your situation. And with new chemicals continuously being added to the database, be sure and check back often for the latest test data. HazMatch – it's the smart way to make the right decision.



Easy-to-use format helps ensure proper clothing selection.

Lab Coats



5-Snap Front Closure, Knit Collar and Cuffs, 2 Sewn-on Hip Pockets

ProVent 12,000
Serged – PNSJ2
XS-5X, Yellow
30/cs, 12 lb / 5.4 kg



Full Cut, 5-Snap, Collar

ProVent 7000
Serged – P7S210
No Pockets
XS-5X, White
30/cs, 8 lb / 3.6 kg

Serged – P7S212
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



Available Spring 2012

ProVent®





General Hazard Protection

Kappler sews up general hazard protection with the microporous advantage.




From basic dirt to paint spray to blood and viral hazards, the ProVent range offers a fabric and garment perfectly suited to the job. And they all offer the benefit of microporous fabric technology – another innovation that Kappler introduced to the industry which proves that protection and breathability are not mutually exclusive.







Boot / Shoe Covers

 <p>Knee-High, Hook and Loop Ankle Closure, Elastic at Top, 2-Ply Sole</p> <p>ProVent 10,000 <i>Ultrasonic</i> – MN026 SM-XL, Blue or White 50 prs/cs, 11 lb / 5 kg</p>	 <p>Knee-High, Elastic at Top and Ankle</p> <p>ProVent 7000 <i>Ultrasonic</i> – 10423 NS Gray Skid Resistant Bottom One Size, White 50 prs/cs, 5 lb / 2.3 kg</p>	 <p>PVC Sole, Elastic Top</p> <p>ProVent 7000 <i>Serged</i> – P7S047 SM-XL, White 100 prs/cs, 8 lb / 3.6 kg</p>  <p>Elastic Top</p> <p>ProVent 7000 <i>Serged</i> – P7S005 L-XL, White 100 prs/cs, 8 lb / 3.6 kg</p>
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Pants / Shorts / Sleeves

 <p>Waist-High, Elastic Waist, Attached Boots, Ankle Ties, 2-ply Sole</p> <p>ProVent 10,000 <i>Ultrasonic</i> – MN818 XS-SX, Blue 30/cs, 16 lb / 7.2 kg</p> <p>ProVent 12,000 <i>Ultrasonic</i> – PMNPB XS-SX, Yellow 30/cs, 16 lb / 7.2 kg</p>	 <p>Modesty, Elastic Waist</p> <p>ProVent 7000 <i>Serged</i> – LS810 XS-SX, White 100/cs, 9 lb / 4.1 kg</p>	 <p>Elastic at Both Ends</p> <p>ProVent 7000 <i>Serged</i> – P7S501 One Size 18", White 100 prs/cs, 6 lb / 2.7 kg</p>
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Coveralls

 <p>Zipper Front, Traditional Collar, Available with Elastic Wrists and Ankles or Knit Cuffs</p> <p>ProVent 7000 <i>Serged</i> – P7S412 No Elastic XS-SX, White 25/cs, 12 lb / 5.4 kg</p> <p><i>Serged</i> – P7S417 Elastic Wrists and Ankles XS-SX, White 25/cs, 12 lb / 5.4 kg</p> <p>ProVent 12,000 <i>Serged</i> – PN5C1 KN Knit Cuffs, No Elastic XS-SX, Yellow 25/cs, 16 lb / 7.2 kg</p>	 <p>Zipper Front with Storm Flap, Attached Hood, Elastic Back Waist, Elastic Wrists, Ankles and Face Opening</p> <p>ProVent 7000 <i>Serged</i> – P7S428 XS-SX, White 25/cs, 12 lb / 5.4 kg</p> <p>ProVent 10,000 <i>Serged</i> – MSE38 CE Type 5,6 XS-SX, Blue or White 25/cs, 19 lb / 5.4 kg</p> <p><i>Ultrasonic</i> – MNE38 CE Type 5,6 XS-SX, Blue or White 25/cs, 17 lb / 7.7 kg</p>	 <p>Zipper Front, Attached Hood and Skid Resistant Boots, Elastic Wrists and Face Opening</p> <p>ProVent 7000 <i>Serged</i> – P7S414 XS-SX, White 25/cs, 12 lb / 5.4 kg</p>	 <p>Zipper Closure with Storm Flap, Attached Hood, Elastic Back Waist, Elastic Wrists, Ankles and Face Opening, Attached Skid Resistant Boots</p> <p>ProVent 10,000 <i>Serged</i> – MSE36 XS-SX, Blue or White 25/cs, 13 lb / 5.9 kg</p> <p><i>Ultrasonic</i> – MNE36 XS-SX, Blue or White 25/cs, 13 lb / 5.9 kg</p>
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Gowns

 <p>Wrap-Around Gown, Two Neck Ties, Two Waist Ties, Knit Cuffs, Non-Sterile</p> <p>ProVent 7000 <i>Serged</i> – LS112 2H XS-SX, White 30/cs, 16 lb / 7.2 kg</p> <p>ProVent 12,000 <i>Serged</i> – PN5M1 XS-SX, Yellow 30/cs, 16 lb / 7.2 kg</p>	 <p>Wrap-Around Gown, Hook and Loop Neck Closure, Two Waist Ties, Knit Cuffs, Non-Sterile</p> <p>ProVent 7000 <i>Serged</i> – LS101 XS-SX, White 30/cs, 15 lb / 6.8 kg</p> <p>ProVent 10,000 <i>Ultrasonic</i> – MN101 XS-SX, Blue or White 30/cs, 18 lb / 8.2 kg</p>	 <p>Wrap-Around Gown, Two Neck Ties and Two Waist Ties, Elastic Wrists, Non-Sterile</p> <p>ProVent 7000 <i>Serged</i> – LS112 XS-SX, White 50/cs, 17 lb / 7.7 kg</p>	 <p>Open Back Gown, Hook and Loop Neck Closure, Waist Ties, Knit Cuffs, Non-Sterile</p> <p>ProVent 10,000 <i>Ultrasonic</i> – MN108 XS-SX, Blue or White 30/cs, 16 lb / 7.2 kg</p>
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Zytron®

Chemical Protection

When it comes to protection,
we've got your number.

The concept of an apparel matrix is pure Kappler innovation – a simple system to identify protection levels. Today, the legacy continues with Zytron® – unsurpassed protection, an easy-to-use numbering system, and distinctly colored garments for clear identification. Zytron. One look and you'll see we've got you covered.



Introducing ChemScan™ garment labels.

Just scan the label with your mobile phone's QR reader for immediate access to a complete list of chemicals tested against your garment's protective fabric. Quick, accurate and only from Kappler – another industry first.





Z100

Zytron 100 garments provide excellent physical strength and basic chemical resistance, ideal for applications where workers need protection from dry particulates and light splash. Color is Yellow.

Z300

Zytron 300 is ideal for demanding applications where there is potential for chemical splash. Increased physical strength and even broader chemical holdout take the protection level up a serious notch. Color is Tan.



Z100XP

Zytron 100XP is a new, tougher version of Z100 – the same excellent chemical holdout with stronger physical properties. Color is Blue.

Z400

Zytron 400 is one tough customer, with excellent physical properties. It's also a bargain by comparison, with a broad range of chemical protection typically found in garments costing much more. Color is Dark Green.



Z200

Zytron 200 ups the protection level through increased resistance to a wider range of chemicals and greater physical strength which is especially valuable in applications where rip-out is a concern. Color is Gray.

Z500

Zytron 500 is top of the class – and the classic responder choice. It's tough, built for mobility, and based on patented technology that created the first material to survive eight full hours against the ASTM F1001 Test Battery with no breakthrough. With that kind of Kappler heritage built into the fabric, it's no wonder that responders around the world trust Z500 garments for ultra-demanding Level A and Level B applications. Available in coveralls and a range of total encapsulating suits. Color is Orange or Charcoal Gray.



Zytron® 100

Zytron 100XP

Zytron 200

Zytron 300

Zytron 400

Zytron 500 Charcoal

Zytron 500 Orange

For available styles
see page 8.

For detailed technical and
chemical data see page 14.

Zytron®

The Last Word On Protection.
From The First Name In Innovation.

Zytron®

Chemical Protection | Available Styles

Coveralls



Zipper Front, Collar

Zytron 100
Serged – Z1S412
XS-SX, Yellow
12/cs, 12 lb / 5.4 kg

Bound – Z1B412
XS-SX, Yellow
12/cs, 13 lb / 5.9 kg

Zytron 100XP
Serged – Z1S412XP
XS-SX, Blue
12/cs, 12 lb / 5.4 kg

Bound – Z1B412XP
XS-SX, Blue
12/cs, 13 lb / 5.9 kg

Zytron 200
Bound – Z2B412
XS-SX, Gray
12/cs, 15 lb / 6.8 kg

Heat Sealed/Taped – Z2H412
XS-SX, Gray
6/cs, 10 lb / 4.5 kg

Zytron 300
Heat Sealed/Taped – Z3H412
XS-SX, Tan
6/cs, 10 lb / 4.5 kg



Zipper Front, Attached Hood and Boots, Elastic Wrists and Face Opening

Zytron 100
Serged – Z1S414
XS-SX, Yellow
12/cs, 14 lb / 6.4 kg

Bound – Z1B414
XS-SX, Yellow
12/cs, 16 lb / 7.3 kg

Zytron 100XP
Serged – Z1S414XP
XS-SX, Blue
12/cs, 14 lb / 6.4 kg

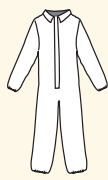
Bound – Z1B414XP
XS-SX, Blue
12/cs, 16 lb / 7.3 kg

Zytron 200
Bound – Z2B414
XS-SX, Gray
12/cs, 18 lb / 8.2 kg

Heat Sealed/Taped – Z2H414
XS-SX, Gray
6/cs, 9 lb / 4.1 kg

Zytron 300
Heat Sealed/Taped – Z3H414
XS-SX, Tan
6/cs, 11 lb / 5 kg

Zytron 400
Heat Sealed/Taped – Z4H414
XS-SX, Green
6/cs, 11 lb / 5 kg



Zipper Front, Collar, Elastic Wrists and Ankles

Zytron 100
Serged – Z1S417
XS-SX, Yellow
12/cs, 11 lb / 5 kg

Bound – Z1B417
XS-SX, Yellow
12/cs, 11 lb / 5 kg

Zytron 100XP
Serged – Z1S417XP
XS-SX, Blue
12/cs, 11 lb / 5 kg

Bound – Z1B417XP
XS-SX, Blue
12/cs, 11 lb / 5 kg

Zytron 200
Bound – Z2B417
XS-SX, Gray
12/cs, 8 lb / 3.6 kg

Heat Sealed/Taped – Z2H417
XS-SX, Gray
6/cs, 8 lb / 3.6 kg

Zytron 300
Heat Sealed/Taped – Z3H417
XS-SX, Tan
6/cs, 10 lb / 4.5 kg

Zytron 400
Heat Sealed/Taped – Z4H417
XS-SX, Green
6/cs, 14 lb / 6.4 kg

Zytron 500
Double Storm Flap with Hook and Loop Closure
Heat Sealed/Taped – Z5H417
XS-SX, Orange or Charcoal
3/cs, 7 lb / 3.2 kg



Zipper Front, Attached Hood, Elastic Wrists, Ankles and Face Opening

Zytron 100
Serged – Z1S428
XS-SX, Yellow
12/cs, 12 lb / 5.4 kg

Bound – Z1B428
XS-SX, Yellow
12/cs, 12 lb / 5.4 kg

Zytron 100XP
Serged – Z1S428XP
XS-SX, Blue
12/cs, 12 lb / 5.4 kg

Bound – Z1B428XP
XS-SX, Blue
12/cs, 12 lb / 5.4 kg

Zytron 200
Bound – Z2B428
XS-SX, Gray
12/cs, 16 lb / 7.3 kg

Heat Sealed/Taped – Z2H428
CE Type 3, XS-SX, Gray
6/cs, 9 lb / 4.1 kg

Zytron 300
Heat Sealed/Taped – Z3H428
CE Type 3
XS-SX, Tan
6/cs, 10 lb / 4.5 kg

Zytron 400
Heat Sealed/Taped – Z4H428
CE Type 3
XS-SX, Green
6/cs, 17 lb / 7.7 kg

Zytron 500
Heat Sealed/Taped – Z5H428
CE Type 3
XS-SX, Orange or Charcoal
3/cs, 7 lb / 3.2 kg



Zipper Front, Attached Hood, Elastic Wrists and Face Opening, Attached Sock Boots with Boot Flap

Zytron 200
Heat Sealed/Taped – Z2H426
CE Type 3
XS-SX, Gray
6/cs, 9 lb / 4.1 kg

Zytron 300
Heat Sealed/Taped – Z3H426
CE Type 3
XS-SX, Tan
6/cs, 11 lb / 5 kg

Zytron 400
Heat Sealed/Taped – Z4H426
CE Type 3
XS-SX, Green
6/cs, 11 lb / 5 kg

Zytron 500
Heat Sealed/Taped – Z5H426
CE Type 3, XS-SX, Orange or Charcoal
3/cs, 8 lb / 3.6 kg

Other Styles



Bib Trouser Adjustable Webbing Straps with Snap Lock Closure

Zytron 300
Heat Sealed/Taped – Z3H660
XS-SX, Tan
6/cs, 8 lb / 3.6 kg

Zytron 400
Heat Sealed/Taped – Z4H660
XS-SX, Green
6/cs, 10 lb / 4.5 kg



Jacket Zipper Front, Elastic Wrists

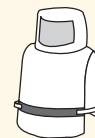
Zytron 300
Heat Sealed/Taped – Z3H670
XS-SX, Tan
6/cs, 7 lb / 3.2 kg

Zytron 400
Heat Sealed/Taped – Z4H670
XS-SX, Green
6/cs, 10 lb / 4.5 kg



Boot Cover Knee-High, Elastic Top

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



Hood Waist Length Dickie with Hook and Loop Closure, PVC Faceshield

Zytron 300
Heat Sealed/Taped – Z3H750
One Size, Tan
6/cs, 6 lb / 2.7 kg

Zytron 400
Heat Sealed/Taped – Z4H750
One Size, Green
6/cs, 6 lb / 2.7 kg

Storm Flap Notes:

Serged Seam coveralls do not have a storm flap.

Bound Seam coveralls have a single storm flap with a pressure sensitive tape closure.

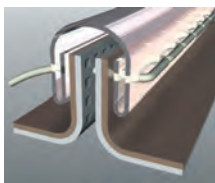
Heat Sealed/Taped Seam garments have a double storm flap with hook and loop closure.

Kappler Seam Types

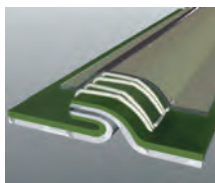
The best protective garments in the world are useless without strong, tight seams. Just one loose thread or gap, and the barrier of protection can unravel and leave you vulnerable to injury – or worse. Kappler offers four different seam types for its protective garments. Depending on the fabric and final application, users may specify: Serged seams for general protection; Bound seams in the mid-range; Heat Sealed/Taped seams for high-end chemical protection; and Ultrasonic seams for biohazard or nuclear applications.



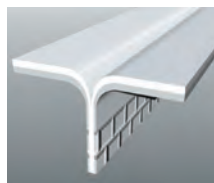
Serged



Bound



Heat Sealed / Taped

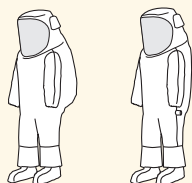


Ultrasonic



All hooded coverall styles have the exclusive LongNeck™ design with extended neck protection.

Totally Encapsulating Suits



Splash Total Encapsulating Suit

Rear Entry, Expanded Back or Flat Back, Large-View PVC Face Shield, 1 Exhaust Port, Elastic Wrists, Attached Sock Boots with Boot Flap, Single-Taped Seams, Double Storm Flap with Hook and Loop Closure, 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
Z2H571 – 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

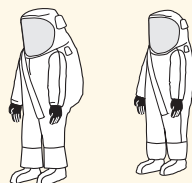
Rear Entry, Heat Sealed/Taped
Z4H571 – Expanded Back
XS-5X, Green • 6/cs, 22 lb / 10 kg

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
Z5H571 – Expanded Back
XS-5X, Orange or Charcoal
1/cs, 7 lb / 3.2 kg

Rear Entry, Heat Sealed/Taped
Z5H371
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, Large-View PVC Face Shield, 2 Exhalation Valves, 48" (122 cm) Gas-Tight PVC Zipper, Double Storm Flap with Hook & Loop Closure, Attached Sock Boots with Boot Flap, Field Replaceable Butyl Gloves. HazMat Styles Include Barrier Glove Liners

Zytron 500

Front Entry, Heat Sealed/Taped
Z5H550
Expanded Back
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

Rear Entry, Heat Sealed/Taped
Z5H551
Expanded Back
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

HazMat Front Entry, Heat Sealed/Taped
Z5H580 – CE Type 1aE1
Expanded Back

Double Sealed Seams, FEP Face Shield Overlay, Knee Reinforcements, 2N1™ Glove System
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

HazMat Rear Entry, Heat Sealed/Taped
Z5H581
Expanded Back
Double Sealed Seams, FEP Face Shield Overlay, Knee Reinforcements, 2N1™ Glove System
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

Front Entry, Heat Sealed/Taped
Z5H350
Flat Back, Must specify pass-thru option
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg

Rear Entry, Heat Sealed/Taped
Z5H351
Flat Back, Must specify pass-thru option
XS-5X, Orange or Charcoal
1/cs, 9 lb / 4.1 kg



Training Suit

Front Entry or Rear Entry, Expanded Back, Large-View PVC Face Shield, 1 Exhaust Port, 48" Zipper, Storm Flap with Hook and Loop Closure, Attached Sock Boots with Boot Flap, Sewn 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
PVSS55
SM-4X, Yellow
1/cs, 10 lb / 4.5 kg



Aluminized Overcover

Front Entry or Rear Entry, Large-View 10-mil. FEP Face Shield, 2 Covered Exhalation Valves, 48" Zipper, Elastic Wrists and Ankles, includes one pair Knit Kevlar Gloves

Front Entry – FASS60
XS-5X • 1/cs, 8 lbs/3.6 kg

Rear Entry – FASS61
XS-5X • 1/cs, 8 lbs/3.6 kg

NFPA Certified Garments - 1992/2005 Edition

Made with Zytron 300 Fabric with Respirator Fit Hood



Elastic hood opening with special design for better fit against respirator, with attached gloves and sock boots. Front zipper extends diagonally across chest up into hood for easier donning/doffing. Zipper opening has double overlapping storm flap with Hook and Loop closure. Double glove system permanently attached to sleeves. Sock boots with splash guards (worn inside outer work boots). Boot splash guards have elastic edge. Glove System: Outer glove is Guardian butyl, inner glove is Ansell Barrier.

Front Entry, Heat Sealed/Taped
Z3H427-92 XS-5X
Tan, 6/cs, 9 lb / 4.1 kg



Elastic hood opening with special design for better fit against respirator, plus elastic ankle and wrist openings. Extended double storm-flap, with Hook and Loop and double-sided tape closure design which fold over at top of zipper for better fit and seal.

Front Entry, Heat Sealed/Taped – Z3H428-92
XS-5X • Tan, 6/cs, • 9 lb / 4.1 kg

Special hood design helps ensure good fit against respirator.



NFPA 1994 - Class 2

Made with Zytron 500 Fabric



Front Entry with Expanded Back, Double-Heat Sealed/Taped Seams, Large-View 40 mil PVC Face Shield with FEP Overlay, 2 Exhalation Valves, 48" (122 cm) Gas-Tight PVC Zipper, Double Storm Flap with Hook and Loop Closure, Attached Sock Boots with Boot Flap, Field Replaceable 2N1™ Glove System and Kevlar Knit Overgloves.

Front Entry, Vapor Total Encapsulating Suit – Z5HTN-C2
XS-5X*, Orange or Charcoal
1/cs, 9 lb/4.1 kg

* See sizing note on back cover of catalog.



Frontline®

Chemical/FR Protection

Multiple protection levels in single-skin apparel.

Those who work in hazmat response or petrochemical environments know that protection against chemical flash-fires is a must. That's why Kappler developed the Frontline family of fabrics, with a combination of broad chemical holdout plus flash-fire protection. Whether you need "splash and flash" protection or you're facing a full-blown Level A situation, Frontline offers a solution that's right for the job.



Introducing ChemScan™ garment labels.

Just scan the label with your mobile phone's QR reader for immediate access to a complete list of chemicals tested against your garment's protective fabric. Quick, accurate and only from Kappler – another industry first.

For detailed technical and chemical data see page 14.

Pyroman Testing: Inside-The-Suit Performance Tells The Real Story.



Because of Kappler's commitment to user survivability, we go beyond the requirements of NFPA 1991 with whole suit testing. Kappler 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.

Frontline® 500 performed exceptionally well in both measurements, with 0% body burn indicated. Frontline® 300 also performed exceptionally well, with less than 1% body burn indicated. Furthermore, additional testing has proven Frontline apparel offers radiant heat protection that puts a premium on survivability. To view the dramatic videos of Frontline Pyroman testing visit <http://www.kappler.com/products/frontline.asp>. For complete test results contact Customer Service at 1-800-600-4019 or email us at customerservice@kappler.com.

Frontline® 300

A true "Splash and Flash" solution

Frontline® 300 is ideal for petro-chemical line break situations. This innovative garment was developed with detailed input from petrochemical Safety Officers. It offers excellent radiant heat protection. And with comparable protection to Kappler's Zytron® 300 chemical apparel, Frontline 300 provides excellent holdout for the most common petrochemical hazards.

The ensemble garment design with hood, jacket and bib pants provides excellent flexibility. The hood and jacket can be removed when not in the hot zone, thereby allowing the individual to ventilate. As with all Kappler apparel, this ensemble is a multi-use, single exposure garment.



Features and Benefits

Ensemble garment for excellent versatility
Hood includes large, expanded-view face shield
Seams are sewn and then heat-sealed/taped

Applications

Petrochemical operations
Line maintenance
Tank cleaning
Refueling situations

*Ensemble components also available separately -
Contact Customer Service at 1-800-600-4019.*

Frontline 300 Available Styles

3-piece Ensemble

Jacket with Zipper Front, Double Storm Flap with FR Hook and Loop Closure, Cone Inserts at Sleeves.

Bib Trouser with Adjustable Webbing Straps and Snap-Lock Closures.

Hood with Flat Back and FR Hook and Loop Closure and 40 mil PVC Visor. Seams are Heat Sealed/Taped. Size Stripes on Left Sleeve and Leg. F3H630, XS-5X, SI
1 set/cs, 8 lb/ 3.6 kg



2-piece Ensemble

Half-C Jacket with Expanded Back and Front Zipper, Double Storm-Flap with FR Hook and Loop Closure, 40 mil PVC Visor, Cone Inserts at Sleeves.

Bib Trouser with Adjustable Webbing Straps and Snap-Lock Closures. Seams are Heat Sealed/Taped. Size Stripes on Left Sleeve and Leg. F3H620, XS-5X, SI
1 set/cs, 8 lb/ 3.6 kg



Coverall

Coverall with Special-Design Hood Opening for better fit against Respirator and Visor, LongNeck™ design with Extended Zipper Closure, Double Storm-Flap with Hook and Loop Closure, Cone Inserts at Sleeves. Seams are Heat Sealed/Taped. Size Stripes on Left Sleeve and Leg. F3H429, XS-5X, SI
2/cs, 9 lb/ 4.1 kg



Frontline® 500

NFPA 1991 Certified Single Skin Protection

Now get triple assurance with a single suit certified to NFPA 1991 base plus optional Flash Fire and Liquified Gas requirements. Frontline® 500 offers three-way protection – broad chemical holdout, plus flame resistance and superior radiant heat protection for the additional hazards encountered in a chemical flash-fire.

Kappler's single-suit design means goodbye to the days of a cumbersome two-suit NFPA 1991 configuration. As with all Kappler apparel, this is a multi-use, single exposure garment. Offering comparable protection to Kappler's Zytron® 500 chemical apparel, Frontline 500 provides excellent holdout for the ASTM F1001 battery and beyond.

For optimal radiant heat protection, Kappler's commitment to user survivability led us to use the more demanding Pyroman Thermal Manikin testing in addition to the NFPA 1991 Chemical Flash Fire Option. Pyroman results for Frontline 500 indicated 0% body burn – a huge confidence factor when facing a chemical flash situation.



Features and Benefits

Single garment eliminates need for typical 2-suit NFPA 1991 configuration
Combines chemical, flash-fire and radiant heat protection in a single suit
Seams are sewn and double heat-sealed/taped for added protection
Large expanded-view face shield improves field of vision
Unique 2N1™ glove system prevents inner glove inversion when removing hands

Applications

Hazmat response
Chemical handling with potential for chemical flash-fire

Frontline 500 Available Style

Vapor Total Encapsulating Suit

Front Entry, Expanded Back, Large PVC view window with FEP Overlay, Double sealed seams, Knee reinforcements, 2 exhalation valves, 48" Gas-Tight PVC Zipper, Double Storm Flap with Hook and Loop closure, attached Sock boots with Boot Flap, Field replaceable 2N1™ Glove System includes Butyl Gloves with specially attached Barrier Glove liner and knitted Kevlar overglove. F5H580-91, XS-5X, SI w/hi-vis. Orange Taped Seams
1 set/cs, 12 lb/ 3.6 kg



Accessories

And Specialty Products

When it comes to accessories, details make the difference and Kappler innovation comes through again with a wide range of specialty products. From patented ChemTape® to an exclusive pressure test kit design, we offer unique accessory items that complete the protection equation. If you need something that supports your protective apparel, Kappler has a proven solution.



ChemTape® (above right)

ChemTape is Kappler's exclusive, patented chemical-resistant tape designed specifically for protective apparel and related applications. With outstanding holdout against the entire ASTM F1001 Test Battery, ChemTape provides the added assurance you need for taping gloves, boots, respirators and storm flaps. Also excellent for shelter-in-place applications. Rolls are 2" X 60 yd (48 mm wide and 50 meters long); packed 24 rolls per case, style 99402 YW.



Cooling Vest

The Kappler Cooling Vest with patented Phase Change Material is far superior to traditional cooling systems. It's lightweight and can provide hours of cooling without the discomfort, vaso-constriction or moisture build-up common to other products. Available in two cooling-capacity sizes, in mesh or FR Cotton, with extra gel packs available separately. Contact Customer Service for style numbers.

Male Glove Insert Cones (left)

Better taping means better protection. Kappler's glove insert cones are designed for chemical splash coveralls to interface glove to suit and provide smooth taping surface. 1 pair per case, style AG0AR.



HangAir® Garment Drying System

The HangAir system quickly dries totally-encapsulating suits and other protective garments – in hours, not days. A high-power waterproof fan pushes 120 cfm of dry air to retard the development of odor producing bacteria. Safe low voltage power is supplied through a 15 ft/5 m cord from a 120/240 VAC universal wall mounted adapter. Limited lifetime warranty. 2 per case, style A0HUS.

Pressure Test Kit

Kappler's Pressure Test Kit was custom-designed for testing gas-tight suits. With ergonomically friendly controls and easy-to-read gauges, you never have to guess whether your Level A garments are good to go. Style AKMOB.

For a complete list of Kappler accessories visit www.kappler.com or call customer service at 1-800-600-4019

Introducing the 2N1™ Glove System, with a unique liner system that prevents inner glove inversion when removing hands.

Kappler's new 2N1™ Glove System solves a common, persistent problem – a simple yet effective innovation. Especially helpful when a user needs to free the hands while inside the suit, and also provides improved comfort and manual dexterity. Style 33491



Fingers of inner glove stay in place when hands are removed.

NFPA

Standards Overview

A handy reference guide to NFPA apparel standards.

The National Fire Protection Association (NFPA) develops, publishes and disseminates consensus codes and performance standards intended to minimize the possibility and effects of fire and other risks. Shown here is an overview of the NFPA standards that apply specifically to protective apparel, along with details on our products certified to these standards. If you need additional information on NFPA or other technical issues, please contact Customer Service at 1-800-600-4019 or email usa@kappler.com.



NFPA Chemical Standards Overview

	NFPA 1991	NFPA 1992	NFPA 1994 Class 2	NFPA 1994 Class 3	NFPA 1994 Class 4
Scope	Hazmat Response Vapor	Hazmat Response Liquid	Chem/Bio Terrorism Incident Response Vapor	Chem/Bio Terrorism Incident Response Liquid	Chem/Bio Terrorism Incident Response Particle
Chemical vs Garment Fabric, Seams, Visors, Gloves, Boots	Permeation resistance 1 hr vs 21 industrial chemicals, 4 toxic industrial chemicals and warfare agents sarin and mustard	Penetration resistance 1 hr vs 7 industrial chemicals	Permeation resistance 1 hr vs 5 toxic industrial chemical and mustard and soman	Permeation resistance 1 hr vs 5 toxic industrial chemicals and mustard and soman	Not Required
Challenge Level	100 % concentration and full contact 100 g/m2 agents	100 % concentration and full contact	Liquids 10 g/m2 Gases 350 ppm Closed Top Cell	Liquids 10 g/m2 Gases 40 ppm Open Top Cell	Not Required
Breakthrough Criteria	ASTM F 739 Normalized Rate Agents Cumulative 4.0 mustard, 1.25 sarin	ASTM F 903 Visual liquid	ASTM F739 Cumulative 6.0 TICs, 4.0 mustard, 1.25 soman	ASTM F 739 Cumulative 6.0 TICs, 4.0 mustard, 1.25 soman	Not Required
Whole Garment	ASTM F 1052 Pressure Test SF6 inward leakage ASTM F 1359 Shower Test > 60 min Flashfire Option 7 second flash propane	ASTM F 1359 Shower Test > 20 min	MIST PDDF >360 ASTM F 1359 Shower Test > 20 min	MIST PDDF >120 ASTM F 1359 Shower Test >4 min	Particle Inward Leakage Test < 5%
Flame Resistance ASTM F 1358	Pass	Not Required	Not Required	Not Required	Not Required
COMFORT ASTM F 1868 Total Heat Loss	Not Required	Not Required	Not Required	Pass	Pass
Viral Resistance ASTM F 1671 FABRIC/ SEAMS	Not Required	Not Required	Pass	Pass	Pass
Components	Boots/SCBA	Boots/Respirator	Boots/SCBA	Boots/Specify Respirator	Boots/Specify Respirator
Kappler Products	Frontline® 500 - FSH580-91	Zytron® 300 - Z3H426-92, Z3H427-92, Z3H428-92, Z3H576-92, Z3H577-92	Zytron® 500 - Z5HTN-C2	In Development	

Technical Data

Chemical And Physical

ASTM F1001 Chemical Test Battery

Chemical testing was performed in accordance with ASTM F 739 – 2007 edition.

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

Need A Specific Chemical Tested?

Kappler now offers a free custom testing program.

If you need to document a Kappler fabric against a specific chemical hazard, we offer a custom testing program that makes it easy. When you order a standard minimum number of garments (varies by product), we will conduct custom third-party testing of your specific chemical at no charge. For details contact Customer Service at 1-800-600-4019 or customerservice@kappler.com.

Complete Chemical Data at kappler.com

The ASTM F1001 test battery represents only a fraction of the chemicals tested against Kappler fabrics – a list that's constantly being expanded. Visit HazMatch® at www.kappler.com for the latest list of chemicals in the Kappler database.



Typical Physical Properties	Zytron®						Frontline®	
TEST METHOD	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	120 / 534	142 / 632
Grab Tensile Strength CD* ASTM D751(lbs/N)	24 / 106	38 / 169	39 / 173	69 / 307	152 / 676	121 / 538	130 / 578	156 / 694
Tear Resistance Trapezoid Method MD* ASTM D751(lbs/N)	11.5 / 51	17.4 / 77	22.9 / 101.8	16.6 / 74	42.2 / 188	35 / 156	18 / 78	15 / 66
Tear Resistance Trapezoid Method CD* ASTM D751(lbs/N)	7.4 / 32	10.3 / 45	9.6 / 42.7	22.1 / 98	50.6 / 225	37 / 168	14 / 60	11 / 48
Ball Burst ASTM D3787 (lbs/N)	28 / 124	46 / 204	43 / 191	58 / 258	153 / 681	128 / 569	124 / 552	148 / 658
Flammability Resistance ASTM F1358	N/A	N/A	N/A	N/A	N/A	N/A	PASS	PASS
*MD - Machine Direction, CD - Cross Direction								

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 MINUTES	4.0 ug/cm ²	>480 MINUTES	4.0 ug/cm ²	>480 MINUTES	4.0 ug/cm ²	>480 MINUTES	4.0 ug/cm ²
Isopropyl methylfluorophosphonate (Sarin:GB)	>480 MINUTES	1.25 ug/cm ²	>480 MINUTES	1.25 ug/cm ²	>480 MINUTES	1.25 ug/cm ²	>480 MINUTES	1.25 ug/cm ²
Chlorovinyl arsinedichloride (Lewisite:L)	>240 MINUTES	4.0 ug/cm ²	>480 MINUTES	4.0 ug/cm ²	>240 MINUTES	4.0 ug/cm ²	NT	NT
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve:VX)	>480 MINUTES	1.25 ug/cm ²	>480 MINUTES	1.25 ug/cm ²	>480 MINUTES	1.25 ug/cm ²	>480 MINUTES	1.25 ug/cm ²
Agent testing was conducted at Battelle Labs in accordance with MIL-STD-282 and/or NFPA 1994-2001 Edition Standard on Protective Ensembles for Chemical / Biological Terrorism Incidents.								

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. All chemicals tested at 95% and 75° F except Sodium Hydroxide, tested at 50%.

Warning: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and/or industry standards.

Additional Frontline® 300 Data

Frontline® 300 has 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.

Frontline 300 meets the requirements for flame resistance in accordance with ASTM F1358.

Additional Frontline® 500 Data

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

Frontline 500 has been tested for flame resistance in accordance with ASTM F1358 and meets requirements of NFPA 1991, including base requirements plus optional Flash Fire and Liquified Gas requirements.

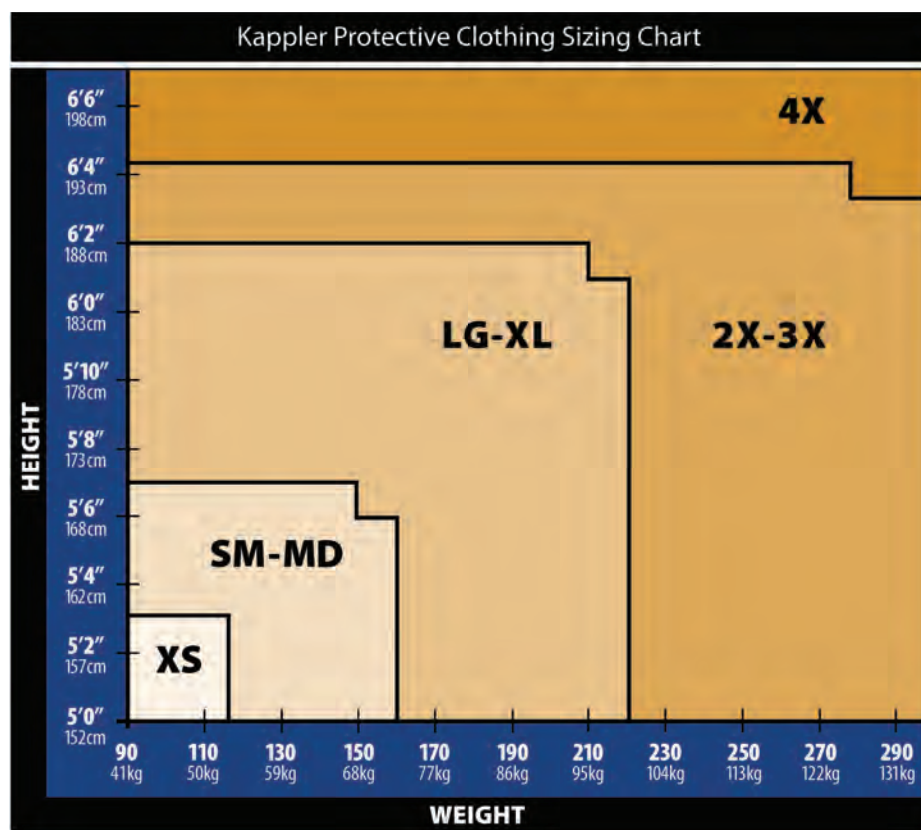
Frontline 500 has been tested in accordance with ASTM F 1930-00 Standard Test Method for Evaluation of Flame Resistant Clothing for Protection Against Flash Fire Simulations Using an Instrumented Manikin, with 0% body burn indicated after a 6-second burn test.

Caution: Do not use for fire fighting protection. This garment is designed for escape purposes only. Avoid open flame or intense heat.

Sizing Made Simple.

Another Kappler Innovation – 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 more details.



Know What You're Getting Into.

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