



Catálogo ENG

**Fire Equipment de México**

Poniente 122 No. 513,  
Col. Coltongo, Del. Azcapotzalco,  
C.P. 02630, CDMX, México  
Tel. (+52) 55 5368 8888  
[consulta@FireEquipmentMexico.com](mailto:consulta@FireEquipmentMexico.com)

**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

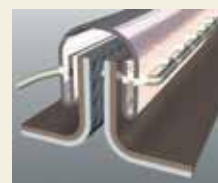
### Choose the seam.

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

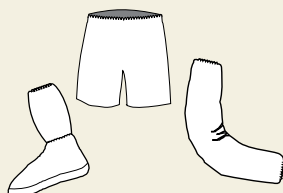
Partial Body

Aprons/Labcoats

Coveralls

### Pick your design.

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

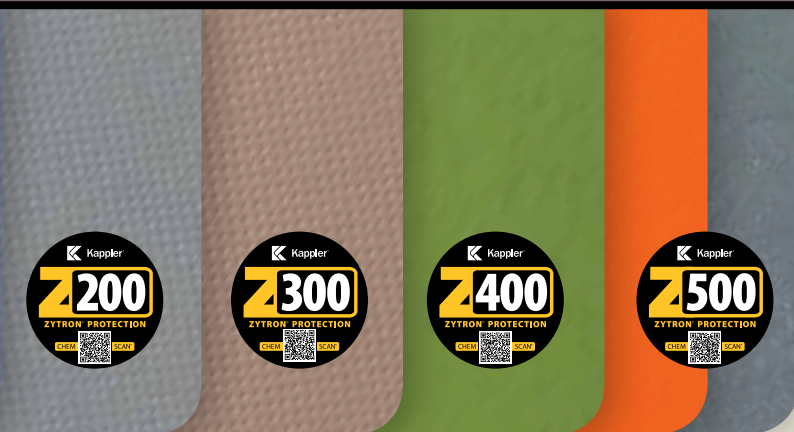


# HazMatch®. The app is free, the data priceless.

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](http://hazmatch.com) – it's fast, easy, free, and only from Kappler.

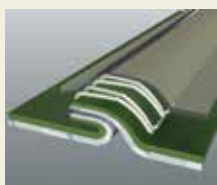


Frontline® see pages 22-25



## 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

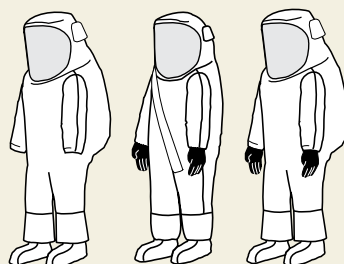
Two fabric pieces are ultrasonically welded to create a seam with no needle holes. An Ultrasonic/Taped seam is available for additional strength. For particulates and light to moderate liquid splash.



## 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-SX, White  
30/cs, 16 lb / 7.2 kg



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

**ProVent 7000**  
Serged – LS101  
XS-SX, 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-SX, 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-SX, Blue or White  
30/cs, 16 lb / 7.2 kg



Full Cut, 5-Snap, Collar

**ProVent 7000**  
Serged – P75210  
No Pockets  
XS-SX, White  
30/cs, 8 lb / 3.6 kg  
**ProVent 10,000**  
Serged – P75212  
With Pockets  
XS-SX, 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-SX, Blue or White  
30/cs, 18 lb / 8.2 kg  
**ProVent 7000**  
Serged – MS225  
Zipper closure  
XS-SX, Blue or White  
30/cs, 18 lb / 8.2 kg



Modesty Shorts, Elastic Waist

**ProVent 7000**  
Serged – LS810  
XS-SX, 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-SX, Gray • 6/cs, 15 lb / 6.8 kg

Rear Entry, Heat Sealed/Taped  
Z2H571 – Expanded Back  
XS-SX, Gray • 6/cs, 19 lb / 8.6 kg

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

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

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

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

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

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

**Zytron 500**  
Rear Entry, Heat Sealed/Taped, Expanded View AntiFog Visor System  
Z5H573 – Expanded Back  
XS-SX, 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-SX, 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-SX, Orange or Charcoal  
1/cs, 9 lb / 4.1 kg

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

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

Rear Entry, Heat Sealed/Taped  
Z5H353 – Flat Back  
Must specify pass-thru option  
XS-SX, 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-SX, 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-SX, 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-SX, Orange or Charcoal  
1/cs, 7 lb / 3.2 kg

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

**PVC**  
Front Entry, Serged  
PV5555 – SM-4X  
Yellow 1/cs, 10 lb / 4.5 kg



## Coveralls - ProVent®, Zytron® and Frontline® Fabrics



12 Style

### ProVent

Zipper Front, Collar

#### ProVent 7000

Serged – P75412  
No Elastic  
XS-SX, White  
25/cs, 12 lb / 5.4 kg

### Zytron

Zipper Front, Collar

#### Zytron 100

Serged – Z15412  
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 – Z15412XP  
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

**Note: Contact  
Customer Service  
for ProVent 6000BC  
available styles.**



14 Style

### ProVent

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

#### ProVent 7000

Serged – P75414  
XS-SX, White  
25/cs, 12 lb / 5.4 kg

### Zytron

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

#### Zytron 100

Serged – Z15414  
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 – Z15414XP  
XS-SX, Blue  
12/cs, 14 lb / 6.4 kg  
Bound – Z1B414XP  
XS-SX, Blue  
12/cs, 16 lb / 7.3 kg

#### Zytron 200

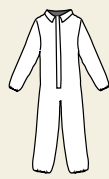
Bound – Z2B414  
XS-SX, Gray  
12/cs, 12 lb / 8.2 kg  
Heat Sealed/Taped – Z2H414  
XS-SX, Gray  
6/cs, 9 lb / 4.1 kg

#### 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



17 Style

### ProVent

Zipper Front, Collar,  
Elastic Wrists and Ankles

Serged – P75417  
Elastic Wrists and Ankles  
XS-SX, White  
25/cs, 12 lb / 5.4 kg

### Zytron

#### Zytron 100

Serged – Z15417  
XS-SX, Yellow  
12/cs, 11 lb / 5 kg  
Bound – Z1B417  
XS-SX, Yellow  
12/cs, 11 lb / 5 kg

#### Zytron 100XP

Serged – Z15417XP  
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

Heat Sealed/Taped – Z5H417  
XS-SX, Orange or Charcoal  
3/cs, 7 lb / 3.2 kg



26 Style

### Zytron

Zipper Front, LongNeck™  
design with Extended  
Zipper Closure, Attached  
Hood, Elastic Wrists and  
Face Opening, Attached  
Sock Booties with  
Splash Guards

#### 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

**Note: All Zytron Taped  
Seam Coveralls include  
LongNeck™ design with  
Extended Zipper Closure**



28 Style

### ProVent

Zipper Front with Storm  
Flap, Attached Hood,  
Elastic Back Waist,  
Elastic Wrists, Ankles  
and Face Opening

#### ProVent 7000

Serged – P75428  
XS-SX, White  
25/cs, 12 lb / 5.4 kg

#### ProVent 10,000

Serged – MSE38  
CE Type 5, 6  
XS-SX, Blue or White  
25/cs, 19 lb / 5.4 kg

Ultrasonic/Taped – MNH38  
XS-SX, Blue or White  
25/cs, 17 lb / 7.7 kg

### Zytron

Zipper Front, LongNeck™  
design with Extended  
Zipper Closure, Attached  
Hood, Elastic Wrists, Ankles  
and Face Opening

#### Zytron 100

Serged – Z15428  
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 – Z15428XP  
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



29 Style

### Frontline 300

Coverall with Special  
Design Hood Opening  
for better fit against  
Respirator and Visor,  
LongNeck™ design with  
Extended Zipper Closure,  
Double Storm Flaps  
with FR Hook and Loop  
Fasteners, Glove Cone  
Inserts. Seams are Heat  
Sealed/Taped

F3H429  
CE Type 3, XS-SX, Silver  
2/cs, 9 lb / 4.1 kg



36 Style

### Frontline 300

Coverall with Special  
Design Hood Opening  
for better fit against  
Respirator, LongNeck™  
design with Extended  
Zipper Closure, Double  
Storm Flaps with FR Hook  
and Loop Fasteners, Glove  
Cone Inserts. Attached  
Sock Booties with Splash  
Guards. Seams are Heat  
Sealed/Taped

F3H436  
CE Type 3, XS-SX, Silver  
2/cs, 9 lb / 4.1 kg

### ProVent

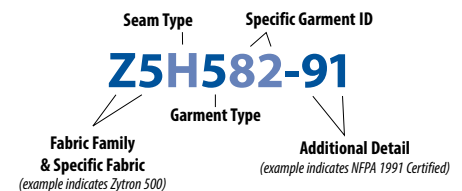
Zipper Closure with Storm  
Flaps, Attached Hood,  
Elastic Back Waist, Wrists  
and Face Opening, Attached  
Skid Resistant  
Shoe/Boot Covers

#### ProVent 10,000

Serged – MSE36  
XS-SX, Blue or White  
25/cs, 13 lb / 5.9 kg

Ultrasonic/Taped,  
Double Storm Flaps – MNH36  
XS-SX, Blue or White  
25/cs, 13 lb / 5.9 kg

## Kappler Style Number System



### Fabrics

P - ProVent 6000 and 7000

M - ProVent 10,000

Z - Zytron

F - Frontline

### Seam Types

S - Serged

B - Bound

H - Heat Sealed/Taped

N - Ultrasonic

### Garment Types

1 - Gowns

2 - Lab Coats

3 - Flat Back Encapsulating Suits

4 - Coveralls

5 - Expanded Back Encapsulating Suits

6 - Hoods, Jackets, Bib Trousers, Ensembles

**Exceptions:** Style number protocols vary for a few products, including Sleeves, Shoe/Boot Covers, Accessories, and ProVent 10,000 coveralls.

## Ensembles - Frontline 300 Fabric

### 3-piece Ensemble

**Jacket** with Zipper Front, Double  
Storm Flaps with FR Hook and Loop  
Fasteners, Glove Cone Inserts.

**Bib Trouser** with Adjustable Webbing  
Straps and Snap-Lock Fasteners.

**Hood** with Flat Back and FR Hook and  
Loop Fasteners and 40 mil PVC Visor. Seams  
are Heat Sealed/Taped.

F3H630 - XS-SX, Silver, 1 set/cs, 8 lb / 3.6 kg



### 2-piece Ensemble

**Half-C Jacket** with Expanded Back and  
Front Zipper, Double Storm Flaps with  
FR Hook and Loop Fasteners, 40 mil PVC  
Visor, Glove Cone Inserts.

**Bib Trouser** with Adjustable Webbing  
Straps and Snap-Lock Fasteners. Seams  
are Heat Sealed/Taped.

F3H620 - XS-SX, Silver, 1 set/cs, 8 lb /  
3.6 kg



## Jackets, Bib Trousers and Hoods - Zytron Fabrics

**Jacket** with 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



**Bib Trouser** with Adjustable  
Webbing Straps and Snap-Lock Fasteners.

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



**Hood** Waist Length Dickie with Hook  
and Loop Fasteners, PVC Visor

Zytron 300 - Heat Sealed/Taped  
Z3H750 - One Size, Tan, 6/cs,  
6 lb / 3.2 kg

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



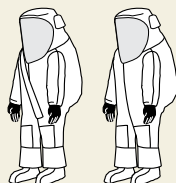
# NFPA Styles

## Certified Apparel For Demanding Applications

### NFPA Certified Garments – 1991-2016 Edition

Made with Frontline® 500 Fabric

Vapor Total Encapsulating Suit, Front Entry or Rear Entry, Expanded Back, Expanded View AntiFog Visor System, Double Heat Sealed/Taped Seams, Knee Reinforcements, 2 Exhaust Valves, 48" Gas-Tight Urethane Zipper, Double Storm Flaps with FR Hook and Loop Fasteners, Attached Sock Booties with Splash Guards, Field Replaceable 2N1® Glove System and Removable Knitted Kevlar Overgloves.



F5H582-91 (Front Entry), F5H583-91 (Rear Entry)

F5H580-9C (CE Type 1aET) and

F5H582-9Z (Reverse Pull Zipper)

XS-SX, Silver

1/cs, 12 lb/ 5.4 kg

### NFPA Certified Garments – 1992-2012 Edition

Made with Zytron® 300 Fabric

Splash Protective Coverall, Elastic Hood Opening with special design for better fit against respirator, with Attached Gloves. Heat Sealed/Taped Seams, Front Zipper extends diagonally across chest up into hood for easier donning/doffing. Urethane Zipper has Double Storm Flaps with Hook and Loop Fasteners. Sock Booties with Splash Guards. Boot Splash Guards have elastic edge. Z3H427-92 has permanently attached 2N1® Glove System. Z3H437-92 has Neoprene Gloves.

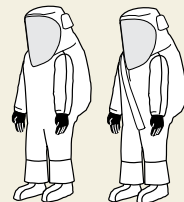


Front Entry, Heat Sealed/Taped

Z3H427-92 (double glove) Z3H437-92 (single glove)

XS-SX, Tan, 6/cs, 9 lb / 4.1 kg

Splash Protective Total Encapsulating Suit, Front Entry or Rear Entry, Expanded Back, Expanded View AntiFog Visor System, Attached Neoprene Gloves, Sock Booties with Splash Guards, 2 Exhaust Valves, Urethane Zipper has Double Storm Flaps with hook & Loop Fasteners.



Rear Entry, Heat Sealed/Taped

Z3H576-92, XS-SX

Tan, 6/cs, 9 lb / 4.1 kg

Front Entry, Heat Sealed/Taped

Z3H577-92, XS-SX

Tan, 6/cs, 9 lb / 4.1 kg

### NFPA 1994 Class 2 - 2012 Edition

Made with Zytron® 500 Fabric

Vapor Total Encapsulating Suit, Front Entry with Expanded Back, Expanded View AntiFog Visor System, Double Heat Sealed/Taped Seams, 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, Field Replaceable 2N1® Glove System and Removable Knitted Kevlar Overgloves.



Front Entry

Z5HTN-C2, XS-SX\*

Orange or Charcoal

1/cs, 9 lb/4.1 kg

\* See sizing note on back cover of catalog.



# A Handy Reference Guide To NFPA Apparel Standards.

# NFPA Standards

A Quick Guide

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. Below is an overview of the NFPA standards that apply specifically to protective apparel, along with a list of our products certified to these standards. For additional information on NFPA or other technical issues, please contact Customer Service at 1-800-600-4019 or email [customerservice@kappler.com](mailto:customerservice@kappler.com).

## Overview of NFPA Standards

	NFPA 1991 - 2016	NFPA 1992 - 2018	NFPA 1994 Class 1 - 2018	NFPA 1994 Class 2 - 2018	NFPA 1994 Class 3 - 2018	NFPA 1994 Class 4 - 2018	NFPA 1999
<b>SCOPE</b>	Hazmat Response Vapor	Hazmat Response Liquid	Chem/Bio Terrorism Incident Response Vapor	Chem/Bio Terrorism Incident Response Vapor	Chem/Bio Terrorism Incident Response Liquid	Chem/Bio Terrorism Incident Response Particle	Emergency Medical Services Single Use
<b>CHEMICAL VS GARMENT FABRIC, SEAMS, VISORS, GLOVES, BOOTS</b>	Permeation resistance 1 hr vs 21 industrial chemicals, 4 toxic industrial chemicals and warfare agents soman and mustard	Penetration resistance 1 hr vs 10 industrial chemicals	Permeation resistance 1 hr vs six toxic industrial chemicals and agents mustard and soman	Permeation resistance 1 hr vs 5 toxic industrial chemicals and agents mustard and soman	Permeation resistance 1 hr vs 5 toxic industrial chemicals and agents mustard and soman		
<b>CHALLENGE LEVEL</b>	100 % concentration and full contact 100 g/m2 agents	100% concentration and full contact	Liquids 20g/m2 Gases 10000 ppm Closed Top Cell	Liquids 10 g/m2 Gases 350 ppm Closed Top Cell	Liquids 10 g/m2 Gases 40 ppm Open Top Cell		
<b>BREAKTHROUGH CRITERIA</b>	Cumulative Permeation 6.0 TIC's, 4.0 mustard, 1.25 soman	ASTM F 903 Visual liquid	Cumulative Permeation 6.0 TIC's, 4.0 mustard, 1.25 soman	Cumulative Permeation 6.0 TIC's, 4.0 mustard, 1.25 soman	Cumulative Permeation 6.0 TIC's, 4.0 mustard, 1.25 soman		
<b>SYSTEM</b>	ASTM F 1052 Pressure Test MIST Inward Leakage PDDF >488 ASTM F 1359 Shower Test >60min	ASTM F 1359 Shower Test > 20 min	ASTM F 1052 Pressure Test MIST PPDF > 441 ASTM F 1359 Shower Test > 60 min	MIST PDDF > 328 ASTM F 1359 Shower Test > 20 min	MIST PDDF > 69 ASTM F 1359 Shower Test >4 min	Particle Inward Leakage Test < 5 %	Shower Test > 8 min
<b>FLAME RESISTANCE ASTM F 1358</b>	Pass 3 second burn only Flash Option	Flash Option	Pass 3 second burn only Flash Option	Flash Option	Flash Option	Flash Option	
<b>COMFORT Total Heat Loss Evaporative Resistance</b>				Option	THL > 200 Ret < 30	THL > 450 Ret < 30	MTVR > 650 g/m@/24hr
<b>VIRAL RESISTANCE ASTM F 1671 FABRIC/ SEAMS</b>			Pass	Pass	Pass	Pass	Pass
<b>COMPONENTS</b>	Kevlar glove		Specify Respirator	Specify Respirator	Specify Respirator	Specify Respirator	
<b>Kappler Products</b>	Frontline® 500 F5H582-91 F5H583-91 F5H580-9C F5H582-9Z	Zytron® 300 Z3H426-92 Z3H427-92 Z3H428-92 Z3H437-92 Z3H576-92 Z3H577-92 Z3H579-92		Zytron® 500 Z5HTN-C2			



# ProVent®

Biohazard And General  
Hazard Protection

ProVent  
6000BC

ProVent  
7000

Available in  
Blue or White

ProVent  
10,000



## Proven Microporous Technology – From Biohazard Scenarios To General Hazards.

- Patented ProVent 10,000 fabric passes both ASTM F1670 blood penetration and ASTM F1671 viral penetration tests.
- ProVent 10,000 fabric protects against Ebola and other biohazards. It is a patented microporous fabric with a high moisture vapor transmission rate (MVTR) for greater comfort.
- ProVent 10,000 Applications: Patient care and other healthcare settings, lab and diagnostic services, pharmacy work, autopsies, mortuary services.
- ProVent 7000 passes ASTM F1670 blood penetration test and offers excellent general hazard protection in a breathable fabric, while ProVent 6000BC offers Berry Compliant protection for general hazards.





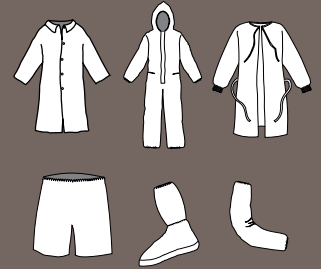
## New Guidelines from OSHA and the CDC

OSHA and the CDC have issued a comprehensive PPE guidance document for workers who may be exposed to potentially infected blood and body fluids. Details include:

- The guidance is in a matrix format and identifies the type and level of PPE performance.
- It includes protective gowns and coveralls, described as *fluid resistant* or *impermeable*.
- Fluid resistant garments are specified where the risk of exposure to blood and body fluids is low. Fluid resistant garments are defined as those with fabrics and seams that meet certain industry standards for liquid repellency.
- Impermeable garments are specified for scenarios with high exposure risk. Impermeable garment definition references industry standards and test methods for blood and viral penetration resistance under pressure.
- Protection is achieved by a system of components. In addition to protective apparel, a proper system includes respiratory protection consistent with OSHA 29 CFR 1910.134, plus eye and face protection, examination gloves, boot/shoe covers and over aprons.

For more details visit [kappler.com](http://kappler.com).

ProVent®

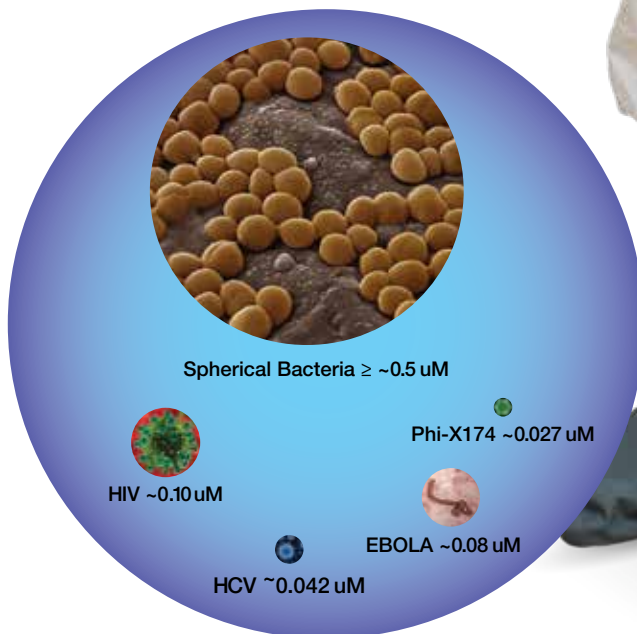


Shown above are typical garment types for this fabric. View standard styles at [kappler.com](http://kappler.com) and see page 29 for custom options.

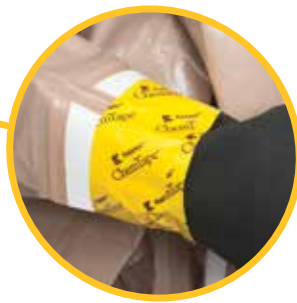
ProVent 10,000 fabric is blue on one side, white on the other – garments may be ordered with either color on the outside (shown here in white).

Storm flap with pressure sensitive tape closure for additional protection.

Skid-resistant attached shoe/boot covers enhance worker safety.



Bloodborne pathogen size comparison.



## 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](mailto: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](mailto: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
<b>GASES</b>									
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 <sup>2</sup>	>480	4.0 ug/cm <sup>2</sup>	>480	4.0 ug/cm <sup>2</sup>	>480	4.0 ug/cm <sup>2</sup>
Isopropyl methylfluorophosphonate (Sarin:GB)	>480	1.25 ug/cm <sup>2</sup>	>480	1.25 ug/cm <sup>2</sup>	>480	1.25 ug/cm <sup>2</sup>	>480	1.25 ug/cm <sup>2</sup>
Chlorovinyl arsinedichloride (Lewisite:L)	>240	4.0 ug/cm <sup>2</sup>	>480	4.0 ug/cm <sup>2</sup>	>240	4.0 ug/cm <sup>2</sup>	NT	NT
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve:VX)	>480	1.25 ug/cm <sup>2</sup>	>480	1.25 ug/cm <sup>2</sup>	>480	1.25 ug/cm <sup>2</sup>	>480	1.25 ug/cm <sup>2</sup>

\* 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.

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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	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](mailto: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](http://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.

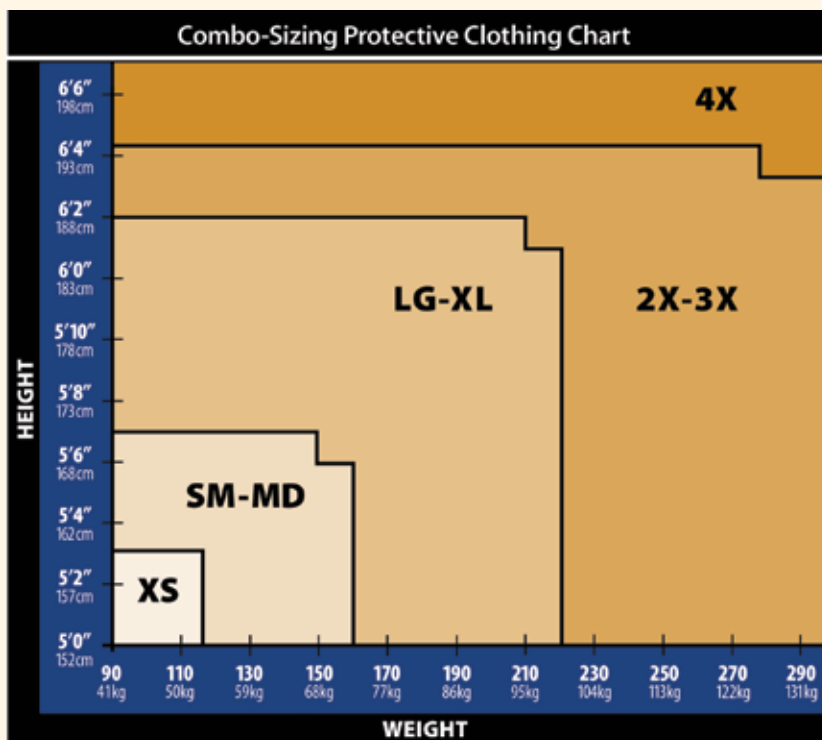
At Kappler, the suit is just the beginning. The data – and how to use it – always lets you know what you're getting into.



*Use HazMatch online at [kappler.com](http://kappler.com) or get the free app.*

## 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®**

#### Kappler, Inc.

P.O. Box 490

Shipping: 55 Grimes Drive

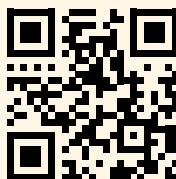
Guntersville, Alabama 35976

Toll Free: 800.600.4019

Local: 256.505.4005

Fax: 256.505.4151

email: customerservice@kappler.com



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