FRONTLINE® 500

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.

Chemical, flash, radiant – three hazards, one suit. With Frontline 500, Kappler's got your back – and your front.

FEATURES & 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 STYLE DETAILS

- **Vapor Total Encapsulating Suit - F5H58091**: Front Entry, Expanded Back, Large PVC view window with FEP Overlay, Double-Taped 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 9Z**: adds a reverse pull zipper
- **F5H580 9C**: CE marked Type 1aET, includes backpack reinforcement

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

ChemScan™ labels – another Kappler innovation

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.

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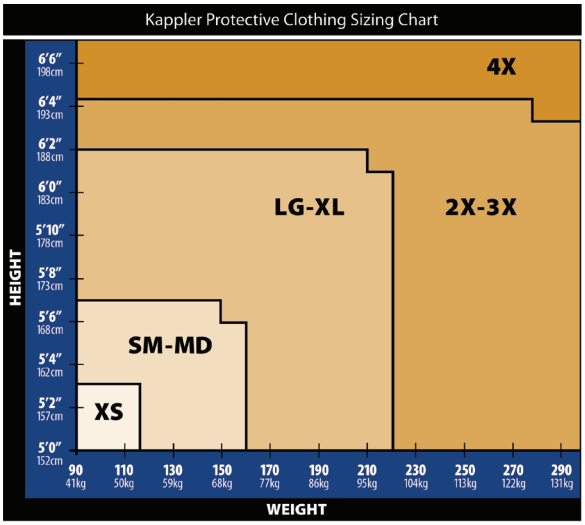
Kappler® | *Know What You're Getting Into.*

FRONTLINE® 500

With 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 Pyroman 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.

Inside and out, Kappler's Frontline 500 offers combined chemical plus flash-fire protection that puts a premium on survivability. For complete test results and more details contact Customer Service at 1-800-600-4019 or you can email us at customerservice@kappler.com.



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.

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%.

ASTM F1001 Chemical Test Battery

Chemical	Breakthrough Time (normalized)
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

For complete list of chemicals tested, visit kappler.com

Typical Physical Properties
Measured per ASTM D751, D3787 and F1358

Test Method	Results - lbs/N
Grab Tensile Strength MD*	137 / 605.5
Grab Tensile Strength CD*	166 / 733.7
Tear Resistance Trapezoid Method MD*	13.5 / 59.7
Tear Resistance Trapezoid Method CD*	14 / 61.9
Ball Burst	134 / 592.3
Flammability Resistance	Pass

*MD: Machine Direction *CD: Cross Direction

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