

Frontline 500 Level A Suit

Frontline®
Chemical/FR Protection

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.

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CAUTION: Do not use for fire protection. Avoid open flame or intense heat.



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.



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Frontline 500 Style F5H580 9C

Shown Below

(CE Type 1aET)



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/cm2
Isopropyl methylfluorophosphonate (Sarin:GB)	>480	1.25 ug/cm2
Chlorovinyl arsinedichloride (Lewisite:L)	>240	4.0 ug/cm2
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve:VX)	>480	1.25 ug/cm2

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 23.9° F except Sodium Hydroxide, tested at 50%. MM-0014 / 14KAP101 / 11-14 / 5C

Important Notes

This garment is designed to be worn as a system in combination with other personal protective equipment, such as boots, & respiratory equipment, please view range of respirators available.



Wide-view face shield allows expanded field of vision with FEP overly

Seams are sewn and double heat sealed/ taped for added protection



Frontline 500 offers true "Vapour-and-flash" protection, plus excellent radiant heat protection.

120cm Gas-Tight PVC Zipper, Double Storm Flap

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

Removable Kevlar outer glove, plus field-replaceable 2N1® Glove System which prevents inner glove inversion when removing hands.

Reinforced knee area for added confidence and work flexibility.

Attached sock boots with boot flaps are standard (excludes gumbots)

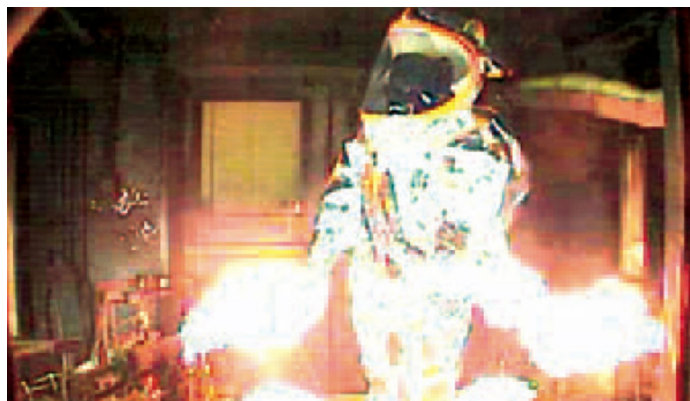
Optional Extra AR0B0 Tingley Hazproof Boots.

* 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 visit kappler.com

Responsibility Of Users It is the responsibility of the user to select garments which are appropriate for each intended use and which meet all specified government and industry standards. Frontline® garments are intended to help reduce the potential for injury, but no protective apparel alone, can eliminate all risk of injury. Protective apparel must be used in conjunction with general safety practices. Frontline® garments are designed for limited use. It is the responsibility of the wearer to inspect garments periodically to ensure that all components, including fabric, valves, visors, gloves, zippers, seams, and interfaces are in good working condition, and provide adequate protection for the operation and chemicals to be encountered. Failure to fully inspect garments may result in serious injury or death to the wearer. Never wear garments that have not been fully inspected and in the case of Level A garments, pressure tested prior to use. Any garment which does not pass inspection should be removed from service immediately. Never wear a garment that is contaminated, altered or damaged. If the Frontline® garment is altered, abraded, cut, torn, punctured or otherwise and in any way breached, do not use. The chemical protective garment material has finite resistance to abrasion, cut, tear and puncture. If the Frontline® garment is damaged during use, retreat immediately to a safe environment, thoroughly decontaminate the garment, then dispose of it in a safe manner. It is the responsibility of the garment wearer, and the wearer's supervisor and employer to examine the condition of the garment before and during use to be sure that the garment is suitable for use in that environment by that employee.

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 customerservice@kappler.com.



Typical Physical Properties Measured per ASTM D751, D3787 and F1358

Test Method	Results - lbs/N
Grab Tensile Strength MD*	137 / 608
Grab Tensile Strength CD*	166 / 737
Tear Resistance Trapezoid Method MD*	13.5 / 60
Tear Resistance Trapezoid Method CD*	14 / 62
Ball Burst	134 / 595
Flammability Resistance	PASS

*MD: Machine Direction *CD: Cross Direction

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%. MM-0013 / 14KAP096 / 11-14 / 500

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HazMatch® Protective Clothing Selection Guide

HazMatch is an easy-to-use online selection tool that provides the data to help you make informed decisions about protective apparel. You can search by chemical or by fabric, with new chemicals constantly being added to the database. Check back often to see the latest available results. And if you have a chemical that does not appear in the database, contact Kappler Customer Service at 1-800-600-4019 for details on our free chemical testing plan.



HazMatch® is an easy-to-use protective apparel selection tool from Kappler that allows a user to choose an appropriate safety garment based on a specific chemical hazard and the exposure scenario. HazMatch also allows a user to save search results to document a Hazard Assessment procedure, which satisfies OSHA requirements for this important procedure.

HazMatch is ideal for emergency responders, industrial hygienists, safety managers or other professionals dealing with hazardous materials.

The app contains a database of tested chemicals, which the user can search by either chemical name or CAS number. Once a chemical is selected, a user completes a short questionnaire on the hazard situation (such as level and length of exposure) and HazMatch will recommend a protective garment that matches the exposure criteria.

In the event that multiple protective garments are suitable for the chemical and hazard scenario, all of the available choices will be listed with the least expensive garment appearing first. Each recommended garment recommendation includes detailed information about that particular style.

HazMatch also may be searched by the different protective fabrics Kappler offers. This search mode provides a list of tested chemicals for a specific fabric and the holdout time for each chemical. All of the chemical data in HazMatch is based on third-party testing, with the database updated regularly with new chemicals.

