TRELLCHEM®

SAFETY AND QUALITY STANDARDS

TRELLCHEM HPS CV (RED)

Provides maximum protection against hazardous chemicals in liquid, vapor, gaseous and solid form, including warfare agents. Designed to carry the breathing apparatus inside the suit. Trellchem® HPS CV is fully certified in accordance with the American standard NFPA 1991 and the European standard EN 943-1.

GARMENT MATERIAL

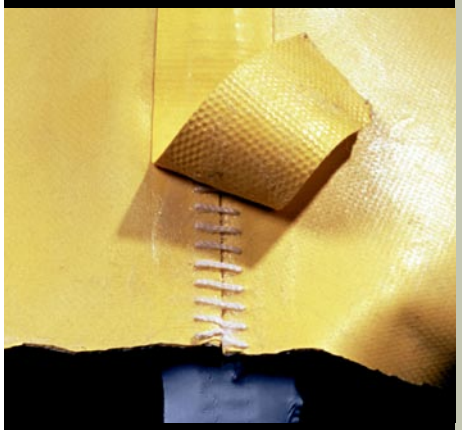
The combination of elastomers and plastics with a woven fabric makes a strong and flexible material that offers an outstanding chemical barrier - more than 8 hours protection against a wide range of chemicals - coupled with an excellent resistance to attack from aggressive chemicals, provided by the outer Viton® layer. The material fulfils all garment material requirements of the most demanding standards in the world, including the NFPA 1991 without any added protection requirement.

STANDARDS

Tested and certified according to NFPA 1991 and EN 943-1.

USERS

Trellchem® HPS suits are used by: Shenzhen Fire Bureau, Tokyo Metropolitan Fire Dept., Singapore Civil Defence Force (SCDF), National Fire & Rescue Administration (BOMBA), SWEDEC (Swedish EOD and Demining Centre), US Air Force, Sumitomo Chemical, Japan Coast Guard.



TRELLCHEM HPS/VPS SEAM Stiched with aramide thread for superior strength and durability. Taped with a rubber strip on the outside and a barrier laminate strip welded to the inside. This provides a continuous barrier layer across the seam.

DESIGN
Encapsulating design with hump, BA worn inside the suit.

VISOR
CV visor for optimal vision and comfort. The visor is made of impact and chemical resistant 2 mm PVC material.

VENTILATION
A ventilation system is included as standard for Trellchem® suits. For the safety of the wearer it provides a constant level of overpressure inside the suit. The Trellchem® regulation valve is made of a chemical resistant material. 3 ventilation rates (2, 30 and 100 l/min) plus zero/off position. Large thumbwheel designed for a good grip. The valve is also available in a passthrough version for use with external air supply. Different types of couplings are available.

TRELLCHEM®

With the Trellchem® Bayonet glove ring system it is quick and easy to exchange both inner barrier gloves and outer rubber gloves.

BOOT ATTACHMENT An ergonomically designed ring attachment simplifying boot exchange and providing a smooth yet tight fit of suit material around the boot shaft.

GLOVES & ATTACHMENTS

The standard glove assembly consists of two layers: Inner 4H SilverShield® barrier glove and outer glove made of flame retardant chloroprene rubber. Alternatively the suit can be delivered with Trellchem® Viton®/butyl rubber gloves in combination with wrist cuffs for added safety. The gloves are attached with the Trellchem® Bayonet glove ring system, which offers quick and simple glove exchange.

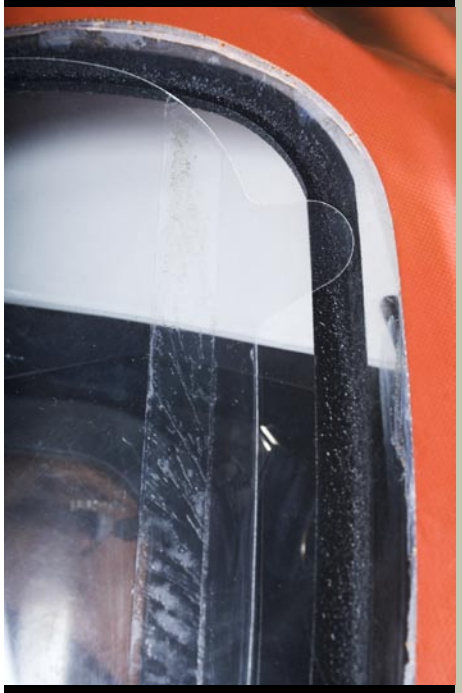
FOOTWEAR & ATTACHMENTS

Black nitrile rubber safety boots with European approval as Firemen's boots. The boots are fixed with an ergonomically designed ring attachment, which simplifies boot exchange and provides a smooth yet tight fit of suit material around the boot shaft. Alternatively the suit is equipped with a sewn-on sock/bootie in the suit material.

ZIPPER

Strong and durable gastight zipper. Closing downwards for added safety. The zipper is protected by a splash guard (flap).

TRELLCHEM®



ANTIFOG LENS & TEAR-OFF LENS
Attached to the inside of the visor, the antifog lens prevents the visor from becoming foggy. Additionally a tear-off lens can be attached to the outside of the visor to prevent scratches and splashes from aggressive chemical substances. Just tear off for a clean and unobstructed visor!

ACCESSORIES

The visor can be equipped with an antifog lens and/or a tear-off lens. A wide range of other accessories is available for maintenance, storage etc.

MADE IN SWEDEN 0806

PERMEATION DATA

CHEMICAL	BT TIME (MIN)	CHEMICAL	BT TIME (MIN)
*Acetone	> 480	Lewisite (L)	> 1440
*Acetonitrile	> 480	*Methanol	> 480
*Anhydrous ammonia	> 480	*Methyl chloride	> 480
*1,3 Butadiene	> 480	Mustard gas (HD)	> 1440
*Carbon disulfide 95%	> 480	*Nitrobenzene	> 480
*Chlorine	> 480	Sarine (GB)	> 1440
*Dichloromethane	> 480	*Sodium hydroxide 40%	> 480
*Diethyl amine	> 480	Soman (GD)	> 1440
*Dimethyl formamide	> 480	*Sulphuric acid 98%	> 480
*Ethyl acetate	> 480	Tabun (GA)	> 1440
*Ethylene oxide	> 480	*Tetrachloroethylene	> 480
Heptane	> 480	*Tetrahydrofuran	> 480
*Hexane	> 480	*Toluene	> 480
*Hydrogen chloride	> 480	VX	> 1440

The test chemicals marked with an asterisk (*) are stipulated (minimum requirement) in the American standard NFPA 1991. The underlined chemicals are stipulated (minimum requirement) in the European standard EN 943-2. The tests are performed in accordance with EN 374-3 and ASTM F 739 with breakthrough criterion 0.1 µg/cm² *min. The chemical warfare agents (HD, GA, GB, GD, L, VX) are tested in accordance with FINABEL Conv. 0.7.C.
BT TIME = Breakthrough time. More data is available on request.

MATERIAL PROPERTIES

PROPERTY	METHOD	RESULT	CLASS*
Abrasion resistance	EN 530, method 2	> 2000 cycles	6
Flex cracking resistance	ISO 7854, method B	> 15000 cycles	4
Flex cracking res. -30°	ISO 7854, method B	> 200 cycles	2
Tear resistance, warp/weft	ISO 9073-4	112 N	5
Tear resistance, warp/weft	ASTM D 2582	64/94 N	N.A.
Tensile strength, warp/weft	ISO 13934-1	1360/1090 N	6
Burst strength	ASTM D 751	1377 N	N.A.
Puncture resistance	EN 863	51 N	3
Seam strength	ISO 5082	532 N	6
Resistance to ignition	EN 13274-4, method 3	5 sec.	3
Flammability resistance	ASTM F 1358	Pass	N.A.

* Classifications according to EN 943-1.
N.A. = Not applicable

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