



SAFETY AND QUALITY STANDARDS

TRELLCHEM VPS

Provides maximum protection against hazardous chemicals in liquid, vapor, gaseous and solid form, including warfare agents. Trelchem® VPS is fully certified in accordance with the American standard NFPA 1991. The suit is also certified to the European standard EN 943-1 and EN 943-2/ET.

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 abrasion, provided by the outer layer of chloroprene rubber. The material fulfils all garment material requirements of the most demanding standards in the world, including the NFPA 1991 without any added protection requirement.

COLOUR

Yellow or graphite/black.

STANDARDS

Tested and certified according to NFPA 1991, EN 943-1 and EN 943-2/ET.

Note: Only encapsulating models fulfil NFPA 1991.



Type CV



Type VP1



Type T

DESIGN

Trelchem® VPS comes in different designs to fit all user preferences:

- Encapsulating design with hump (type CV or VP1), BA worn inside the suit, or
- Non-encapsulating design with face seal and without hump (type T), BA worn outside the suit.

VISOR

On encapsulating suits the visor is made from a rigid 2 mm impact and chemical resistant PVC. Option of two visors; CV or the larger VP1.

FACE SEAL

The non-encapsulating suits have a rubber face seal which is anatomically designed for optimum safety and comfort. It provides users with a tight, yet perfectly comfortable fit around the face.

ZIPPER

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

Note: EN 943-2/ET certified suits are equipped with the Trelchem® HCR zipper.

VENTILATION

A ventilation system is included as standard for Trelchem® suits. For the safety of the wearer it provides a constant level of overpressure inside the suit. The Trelchem® 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.



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



TRELLCHEM EVO/VPS SEAM



Trellechm® Mk II regulating valve for suit ventilation

GLOVES & ATTACHMENTS

The standard glove assembly consists of two layers: Inner 4H Silver Shield barrier glove and outer glove made of flame retardant chloroprene rubber. Alternatively the suit can be delivered with Trellechm® Viton®/butyl rubber gloves. The gloves are attached with the Trellechm® Bayonet glove ring system, which offers quick and simple glove exchange.

Note: Suits certified to NFPA 1991 also have an outer Kevlar® glove.

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.

Note: For suits certified to NFPA 1991 only sock version is allowed.

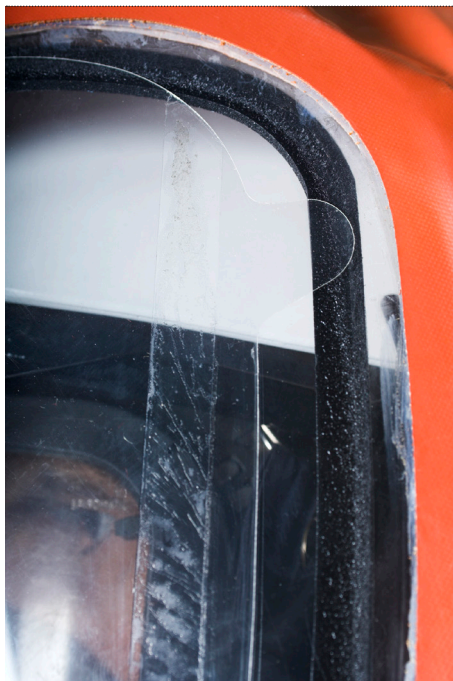
SEAM

Stitched 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.

ACCESSORIES

For the EN 943-1 standard to be fulfilled a TC Hood or a Minihood is required to be worn on top of non-encapsulating suits (type T). A Minihood is always delivered with Trellechm® type T suits.

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.



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!



Trellechem® storage bag

PERMEATION DATA

CHEMICAL	BT TIME (MIN)	CHEMICAL	BT TIME (MIN)
* <u>Acetone</u>	> 480	Lewisite (L)	> 1440
*Acetonitrile	> 480	*Methanol	> 480
* <u>Anhydrous ammonia</u>	> 480	*Methyl chloride	> 480
*1,3 Butadiene	> 480	Mustard gas (HD)	> 1440
* <u>Carbon disulfide 95%</u>	> 480	*Nitrobenzene	> 480
*Chlorine	> 480	Sarin (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
<u>Heptane</u>	> 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	> 100000 cycles	6
Flex cracking res. -30°	ISO 7854, method B	> 200 cycles	2
Tear resistance, warp/weft	ISO 9073-4	107 N	5
Tear resistance, warp/weft	ASTM D 2582	54/81 N	N.A.
Tensile strength, warp/weft	ISO 13934-1	1339/1198 N	6
Burst strength	ASTM D 751	1254 N	N.A.
Puncture resistance	EN 863	86 N	3
Seam strength	ISO 5082	854 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