AlphaTec®

NFPA 1991

Chemical Protective Suits
Instructions for Use
AlphaTec® EVO

This manual may only be removed from the suit by the end user.

Ansell

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1. Safety considerations

- These instructions for use (IFU) are valid only for AlphaTec® EVO*, totally encapsulating/Level A version.
- The suit may only be used by trained personnel who are familiar with the contents of this IFU.
- Use the suit only for the purposes specified herein.
- Do not use a damaged or incomplete suit, and do not modify the suit.
- For repair and maintenance, only use genuine AlphaTec® (TRELLCHEM®) spare parts, or the function may be impaired.

1.1 Definitions of icons

The following icons are used in this IFU to highlight the user on situations or actions that need special attention not to risk the safety of user, suit or environment.

WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially hazardous situation which, if not avoided, could result in physical injury, or damage to product or environment.

NOTICE
Indicates additional information on how to use the suit.

* Formerly known as TRELLCHEM® EVO.

2. Description of suit

AlphaTec® EVO is
- A totally encapsulating/Level A, gastight chemical protective suit
- Intended for use with a self-contained breathing apparatus (SCBA) and a full-face mask*
- Single-skin, i.e. no overcover is needed
- Re-usable

The suit is fitted with:
- Booties/sewn-in socks
- Replaceable gloves
- Visor which is available in two optional sizes; CV (standard) or VP1 (larger)
- Suit ventilation upon request

The following accessories are delivered with every suit:
- Cotton comfort inner gloves
- Silicone coated oversocks
- Maintenance kit for zipper and Bayonet ring system
- Extra safety locking pins for the Bayonet ring system
- Suit hanger
- Black plastic bag
- AlphaTec® Bag
- Instructions for use

* The suit will accommodate the major brands of SCBAs, such as Interspiro, Survivair, Scott, ISI, Dräger and MSA.

The suit has to be worn with overboots which are certified to NFPA 1991:2016 and a protective safety helmet meeting the requirements for type 1, class G helmets of ANSI Z89.1.

For more information about materials, components & accessories, see chapter 11.

3. Approvals

3.1 NFPA

AlphaTec® EVO is certified to NFPA 1991:2016, “Standard on vapor-protective ensembles for hazardous materials emergencies”, including the Optional Chemical Flash Fire protection requirements and the Optional Liquefied Gas protective requirements.

AlphaTec® EVO is certified by SEI (Safety Equipment Institute, USA).

Cert. Mod. (NFPA 1991, 2016 edition)

Upon certification, an SCBA type Scott AV3000 and an MSA Ultra Elite mask were used, but other SCBAs may also be used with the suit.

3.1.1 Approved accessories

Boots:
- Onguard Hazmax #87015 or #87012 boot
- Tingley Hazproof #82330 or #82331 boot

Passthroughs:
- AlphaTec® (TRELLCHEM®) combined Regulating valve & Passthrough
- Interspiro
- Survivair
- Scott
- Dräger
- MSA

3.2 European EC Type approval

AlphaTec® EVO is certified to the following European standards:
- EN 943-1:2015 and EN 943-1/FprA1:2018
- EN 943-2:2002 / FprEN943-2:2018
- EN 14126:2003 infective agent protection
- EN 1073-2:2002 radioactive particle protection
- EN 1149-5:2008 antistatic suit material

AlphaTec® EVO has been tested and approved by notified body no 0200;
FORCE Certification A/S, Park Allé 345, DK-2605 Bröndby, Denmark.

4. Proper use

Proper use within the USA is consistent with NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, and 29 CFR 1910.132, Personal Protective Equipment.

Users in other countries are advised to consult national or other applicable personal protective equipment regulations.

4.1 Intended use

The suit protects against chemicals in gaseous, liquid, aerosol and solid form. It also protects against infectious agents, i.e. bacteria, virus and fungi, and against radioactive particles.

4.2 Limitations of use

- Avoid extensive heat and open flames.
- The suit is not intended for firefighting.
- The suit does not protect against radiation i.e. alfa, beta, gamma or X-ray radiation.
- Avoid explosive environments

4.3 Temperature of use

- 40°F/ - 40°C to 150°F/ 65°C

Short-term use in higher or lower temperatures is possible (ref. NFPA 1991 optional Flash Fire and Liquefied gas tests) but great caution must be taken with regards to heat stress/ burn injuries and frost bite for the user.

Most performance properties of the vapour protective suit or individual element cannot be tested by the user in the field.

The closure has not been tested for permeation resistance. NFPA 1991 specifies penetration testing for closures. This data is given in chapter 11.7.

5. Pre-use

Before use, make sure:
- The suit is pressure tested/leak tight and undamaged, see chapter 9
- The suit and gloves have the correct size, see chapter 11.1
- Anti-fog visor or anti-fog gel is applied to the inside of the suit visor, see chapter 11.6
- Anti-fog gel is applied to the outside of the mask visor
- To wear undergarments suited for the situation, e.g. station wear or fire turn-out gear. If cold weather or risk of contact with cold chemicals, wear insulating underwear.

Never use a suit which is not passing the pressure test or is damaged.

5.1 Donning

Always have an assistant to help you while donning and try to find a clean area to stand on.

1) (Sit on the chair) Place both legs into the suit and into the booties/sewn-in socks.
2) Put on the silicone oversocks and then put on the safety boots.
3) (Stand up) Put on the breathing apparatus (SCBA) and the mask and open the air flow.
4) Put on the helmet.
5) Put on the comfort gloves. Insert the right arm into the right sleeve and glove.
6) Pull the hood over your head and the hump over the cylinder.
7) Insert the left arm into the left sleeve and glove.

8) *If the suit is fitted with ventilation: Connect the ventilation hose to the inlet of the valve (see picture).*

9) Close the zipper and fold the splash guard over it. Pull the zipper straight, using two hands. Never force it! If it jams, gently pull it back and try again. Make sure the zipper is fully closed.

Handle the zipper with care. A damaged zipper can cause serious injury or death.

6. In use

During the intervention, make sure to:
• Minimize the exposure to chemicals
• Avoid direct contact with the chemicals as far as possible

6.1 Removal and reinsertion of hand from glove

To check the manometer/pressure gauge, the hand has to be retracted from the glove:
1) Grab the right glove with your left hand
2) Pull the right hand into the suit
3) Check the manometer/radio/other
4) Put the right hand back into the glove again
5) To pull the left hand into the suit, instead grab the left glove with your right hand

6.2 Regulating the suit ventilation

For suits fitted with a AlphaTec® (TRELLCHEM®) Regulating valve and/or AlphaTec® (TRELLCHEM®) Passthrough.

Suit ventilation is not required according to the product standard, and hence it is optional to use.

• 2 litres/minute: The standard ventilation rate, which gives an overpressure in the suit and thereby protects against chemicals coming into the suit in case of a puncture.

• 30 litres/minute: When the air inside the suit gets moist and warm, the user can choose to temporarily adjust the ventilation rate to 30 litres/minute while at the same time compressing the suit. This exercise empties the suit of moist and warm air, which will provide a slightly more comfortable inside environment in the suit.

• 100 litres/minute: Increases the comfort for the user, but shall be used only if the suit is fitted with an airline passthrough with external air-supply.

Never use 100 litres/minute ventilation rate if only the SCBA cylinder is used, as this will empty the air quickly, leaving the user without breathing air and risk of suffocation.

To use suit ventilation, a separate connection hose is required to connect the regulating valve on the suit to the SCBA air cylinders. The connection hose requires a CEJN 221 female coupling in one end, to connect to the suit's regulating valve.

7. After use

7.1 Initial decontamination

After a response in hazardous environment, the suit must be decontaminated before taking it off, to protect the wearer from contamination.

- Make sure to have an assistant for the decontamination.
- The assistant also needs to wear suitable protective and possibly respiratory protection.
- Rinse the suit with plenty of water, preferably with added detergent.

7.2 Taking off the suit

After decontamination, take off the suit in reverse order of that described for donning above, and have someone assist you.

7.3 Final decontamination

If the initial decontamination is not enough, a second decontamination is necessary.

- Use protective clothing/equipment when handling the contaminated suit.
- Acids and Alkaline chemicals can be decontaminated using large amount of water. When the rinsing water has pH 7 the suit is clean.
- Inorganic chemicals can often be decontaminated using large amount of water and detergent.
- Volatile chemicals can be aired out of the suit. Hang the suit outdoors or in a well-ventilated area with the zipper fully open. Check the air for residual chemicals by using simple gas detecting tubes.
- Chemical Warfare Agents (CWA) can be decontaminated using e.g. 30% calcium hypochlorite water solution.
- For chemicals such as oil/petroleum and other organic chemicals, special decontamination agents may be needed. The type of agents available differ between countries and regions. Contact a local supplier.
- Biological agents (i.e. bacteria, viruses) can be decontaminated using e.g. 3% hydrogen peroxide water solution or other similar disinfectants.

8. Storage

When stored the suit should be unfolded and inspected once a year, see chapter 9.

8.1 Storage conditions

- Dry, humidity 50 ± 30%
- Room temperature, 20 ± 5 °C
- Away from direct sunlight
- Away from ozone-generating sources, for example electrical engines, fluorescent lamps and air-conditioners

8.2 Storage methods

The suit should be stored:

- Folded as upon delivery or hanging
- In the plastic bag delivered with it or in another tight bag or box
- If stored in a soft bag, never store suits on top of each other, as too much weight or high pressure may damage the visor
- If stored in a box, make sure the box is large enough to easily accommodate the suit without pushing, pressing or squeezing it. Please refer to the boxes listed in the AlphaTec® Gross Price List.
- The zipper should be almost closed with approximately 10 cm open

If storing the suit on vehicles or containers, abrasion through permanent friction with the contact surface has to be avoided.

8.3 Shelf life

Shelf life refers to suits in storage, without being used. The storage/shelf life applies under optimal storage conditions (see above) and does not form a guarantee. The recommended Shelf life is 10 years from date of manufacture but this may be exceeded or be less, however maximum 15 years. Therefore the condition of the suit needs to be checked regularly to evaluate whether it is in good condition or not (see chapter 9).

9. Maintenance

9.1 Maintenance schedule

The specified intervals below are Ansell recommendations. Differing national guidelines must be complied with. For auxiliary equipment (SCBA, full-face mask, helmet etc.), refer to the respective Instructions for Use.

For a list of spare parts & accessories, see chapter 11.6.

Area (chapter)	**Upon Delivery**	**After Use**	**After Repair**	**Annu-ally**	**Every 5 years**	**If Broken**
Visual inspection (9.2)	X	X	X	X		
Test of gas-tightness (9.3)	X	X	X	X		
Cleaning (9.4)		X				
Lubricate zipper (9.5)		X		X		
Lubricate Bayonet O-Rings (9.6)		X		X		
Repair & Replacements						
Patching suit material (9.11)						X
Barrier inner gloves (9.7)		X				X
Rubber gloves (9.7)		X (*)				X
Bayonet O-rings (9.6)					X	X
Bayonet locking pins (9.6)					X	X
Diaphragm in AlphaTec® Exhaust valve (9.8)					X	X
Service of Regulating valve & Passthrough (if fitted) (9.9)					X	X

(*) Rubber gloves to be replaced after use, if chemically contaminated.

For repair or replacement of visor, boots and zipper, contact an Ansell Service Center, or take a Training course provided by Ansell.

9.2 Visual inspection of suit

The inspection shall consist of the following steps, see also chapter 9.1:

- Visual inspection of both inside and outside.
- Look for surface damages on material, seams, visor, inner and outer gloves.
- Look for changes in the material properties such as brittleness, stiffness, swelling, stickiness or other phenomena which could be evidence of chemical degradation or aging.
- Check function of zipper and zipper fitting.
- Check function of the Bayonet glove ring system
- Check the function of the exhaust valves and, if fitted, suit ventilation regulating valve/ passthrough. Make certain that they are firmly mounted and not damaged.

If any defect/malfunction is found, the suit must be taken out of service.

Note any remarks, found during the inspection, in the inspection log.

9.3 Test of gas-tightness according to ASTM F 1052

Test equipment: See chapter 11.6

Procedure:

1) Place the suit on a clean surface, preferably a table.
2) Exhaust valve no 1: Remove the outer exhaust valve cover (see chapter 9.9) and insert the sealing plug.
3) Add the retaining collar (1 pce) on the sealing plug and tighten clockwise.
4) Exhaust valve no 2: Remove the outer exhaust valve cover and the diaphragm (see chapter 9.8).
5) Put the retaining collar (1 pce) on the black adapter.
6) Screw the black adapter onto the grey test adapter, ensuring a tight connection.
7) Push the black adapter into the exhaust valve, then tighten the retaining collar.
8) Close the zipper.
9) Connect the pressure gauge via the nipple on the test adapter.
10) Inflate the suit with an air pistol to 5.0 inch/125 mm water gauge (1245 Pa/12.5 mbar). This is the pre-test expansion pressure.
11) Maintain this pressure for at least 1 minute in order to fill out wrinkles and allow the material to settle. Extend the time if air temperatures inside and outside the suit are not equal.
12) Adjust the pressure to 4 inch/100 mm water gauge (996 Pa/9.96 mbar). This is the test pressure. Set and start the timer and wait for 4 minutes.

Do not touch the suit during the test period of time.

13) Note the pressure after 4 minutes. If this pressure is 3.1 inch/80 mm water gauge (797 Pa/7.97 mbar) or more, the suit has passed the test. Note the final pressure in the suit log.
14) After the pressure test is completed, disconnect the pressure gauge from the test adapter and remove the test adapter and the sealing plug from the exhaust valves.
15) Before re-fitting the diaphragm, ensure it is free from dust.
16) Re-fit the covers of both exhaust valves.

If the suit does not pass this test, the suit shall be removed from service.

9.4 Cleaning

For decontamination guidelines, see chapter 7.

9.4.1 Hand wash

Ansell recommends hand washing the suit:

- Hand wash in warm water (40 °C) with added mild detergent.
- Use a piece of soft rag or a smooth brush to clean the suit.

Care should be taken not to scratch or damage the material.

- Let the suit air-dry or use a fan (alternatively a cleaning system such as the TopTrock® may be used).
- Stains of oil or other substances may be washed off carefully with white spirit, after which the suit should be rinsed with lukewarm water with a mild detergent followed by water.

Do not use garments that are not thoroughly cleaned and dried.

The suit material will withstand most commercial disinfectants. Your AlphaTec® dealer or Ansell Protective Solutions AB may be contacted for advice.

9.4.2 Machine wash

If the customer uses washing machine, the machine should be specially designed for washing chemical protective suits:

- Large diameter of the drum
- Using extra amounts of water
- No rotating drum but only oscillating drum
- Mild washing powder

Machine washing the suit is the customer's choice and responsibility. AlphaTec® dealer or Ansell Protective Solutions AB may be contacted for advice.

9.5 Zipper

9.5.1 Function

The zipper is an important part of the suit and also a delicate piece of equipment, that has to be handled carefully.

A damaged zipper can cause serious injury or death.

- Pull the slide using two fingers in the loop attached to the slide.
- Always pull the slide parallel and straight along the zipper. A pull sideways may seriously damage the zipper.
- When closing, make sure that neither suit material nor undergarment material is caught in the zipper.
- If the slide gets jammed or is hard to pull, then pull it back, trace the reason (e.g. dirt or clothing material caught in the chain) and solve the problem. Then slowly try to pull it again.
- Never try to overcome a problem by pulling harder as this will damage the zipper.

9.5.2 Maintenance

Lubricate the sealing areas and metal elements, inside and outside, with the wax stick supplied with the suit.

Make sure the surfaces are clean before lubricating.

9.6 Bayonet ring

9.6.1 Function

The AlphaTec® (TRELLCHEM®) Bayonet ring system consists of the following parts:

Sleeve ring – glued to the suit sleeve
Glove ring – where the glove is mounted
Inner ring* – goes inside the shaft of the rubber glove
Viton® rubber O-rings – one in the sleeve ring and one in the glove ring. Together with the rubber glove they provide a triple sealing of the system.
Safety locking pin – prevents the system from unintentional opening

Closed position
Green marks opposite white marks.
To open the system and detach the glove assembly, remove the red locking pin, push the two rings together and twist counter-clockwise until the white marks meet.

Open (detach/attach) position
White marks opposite white marks.
To attach the glove ring, match the white marks, push the two rings together and twist clockwise until the white marks meet the green marks. Insert the red locking pin.

* The inner ring is welded to the inner barrier glove, if the suit is fitted with a 2 or 3-part glove assembly

9.6.2 Maintenance

Procedure:

1) Open the Bayonet ring and take out the two O-rings.

2) Apply Molycote all around the groove.

3) If replacing the O-rings: Put the two new O-rings into place.

4) Use a small paintbrush to spread the grease evenly.

The two O-rings are different size: The one with larger diameter goes into the glove ring and the smaller diameter into the sleeve ring.

The suit must be pressure tested before it is used again.

When functioning properly, the safety locking pin "snaps" into place when pushing it with a finger. The pin may after repeated use become too easy to push into place, i.e. it gets worn out, and must then be replaced.

9.7 Replacing gloves

The suit can be fitted with either a single rubber glove or a 2-part glove system consisting of inner barrier glove and outer rubber glove.

Procedure:

1) Take out the Safety locking pin.
2) Push the rings towards each other, then turn clockwise, to open the ring system.

3) Pull the gloves out of the ring. *If double glove system, pull the inner barrier glove out of the rubber glove.*

If only rubber glove, continue with step 8.

4) Only barrier inner gloves that are welded to an inner ring can be used.

5) Remove the white protective film on each finger of the inner glove. This will uncover a sticky area that holds the inner glove in place and keeps it inside the outer glove when the hand is retracted.

6) Push the inner glove into the outer rubber glove. Make sure all fingers of the inner glove come into position all the way inside the fingers of the outer glove.

7) Press the fingers of the outer and inner gloves together so that they stick together.

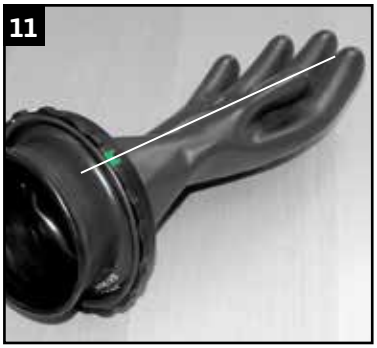
8a) If only rubber gloves, place the black inner ring approximately 5 cm/2 inches into the rubber glove.

8b) If double glove system, push the ring of the inner glove approximately 5 cm/2 inches into the rubber glove.

9) If double glove system, put one hand inside the gloves and curl a fist. At the same time, put a finger of the other hand between the ring and the outer glove to release air that is trapped between the gloves.

10) Lubricate the O-rings with Molycote.

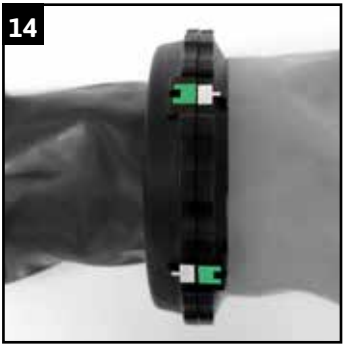
11) Push the glove through the glove ring and align the thumb of the glove with the green mark on the glove ring. Push it firmly into place using your thumbs.



12) Fold the glove shaft into the glove ring.

13) Position the glove ring and the sleeve ring so that the two white marks are opposite each other.

14) Now push the two rings towards each other and turn counter-clockwise, so that the white and the green marks meet.



15) Attach the safety locking pin.

The suit must be pressure tested before it is used again.

9.8 Replacing rubber diaphragm in AlphaTec Exhaust valve

Follow these instructions to remove the cover from the AlphaTec® exhaust valve.

Lay the suit out on a flat surface and locate the exhaust valve on the chest.

When removing the valve cover, do not hold the inner valve retaining collars, as this may loosen the valve from the suit.

Procedure:

1) To remove outer valve cover, first rotate cover clockwise so the cover lug is 6-8 mm past the valve body stop.

2) Carefully insert a thin blade (do not use a knife) between the "cover lug and the body stop.

Do not try to lever the lug and valve body stop apart, as this could damage the exhaust valve.

3) Slowly turn valve cover anti-clockwise over the blade, this allows the cover lug to move past the body stop.
Repeat this action until the valve cover is unscrewed from the valve body

4) Remove the old diaphragm and scrap it.

5) Check that the new diaphragm is clean before mounting it.

6) To refit the exhaust valve cover, screw the cover clockwise onto the valve body, turning the cover until there has been 3 clicks on the cover lug and valve body stop.

   Take care not to cross thread.

The suit must be pressure tested before it is used again.

9.9 Service of Regulating valve & passthrough

Only applicable to the AlphaTec® (TRELLCHEM®) Regulating valve and passthrough. Instructions are enclosed with the AlphaTec® (TRELLCHEM®) Service Kit (see chapter 11.6).

The maintenance interval described in the maintenance schedule above applies only if the fitted valve/passthrough is of AlphaTec® (TRELLCHEM®) brand. For passthroughs of other brands, please see the manufacturer's instructions.

9.10 Patching

Minor damage, e.g. tears, punctures, scratches, can be patched using the AlphaTec® (TRELLCHEM®) Repair Kit, which also contains instructions (see chapter 11.6).

9.11 Major repair/replacements

Major repair such as replacing visor or zipper shall be done by a Ansell certified repair center or by Ansell Protective Solutions AB.

9.12 Marking on the suit

Marking on the suit can be made by a "permanent marker" type of pen.

Make sure the ink has dried before folding/packing the suit for storage.

Special labels for marking of the suit are available as an option.

10. Disposal

Worn out suits should be disposed of according to local regulations for rubber/plastic waste. Incineration is recommended.

Suits that are not completely decontaminated must be disposed of in a safe manner, taking local regulations for the specific chemical into account.

10.1. Retirement consideration

A suit should be retired when fulfilling one or more of the below criteria:

Criteria for retirement:	**Explanation**
Age	Regardless of how the suit has been used, and although it may still pass inspection and pressure test, it must be retired when reaching 15 years of age.
Beyond repair	The damage is too big and therefore not possible/not safe to repair.
	The suit has already been patched 10 times.
	The cost for repair is higher than to buy a new suit.
Chemically degraded	Chemical degradation cannot be stopped or repaired.

A suit that is being retired due to age, or beyond repair, can still be used for training.

Clearly mark the training suit “TRAINING”, so it is not mistaken for a real/active suit.

11. Technical Data Package

11.1 Suit sizes

SUIT SIZE	HEIGHT (in/cm)	WEIGHT (lbs/kg)	SOCK SIZE
S	67-72/170-182	121-165/55-75	7
M	69-74/176-188	143-187/65-85	9
L	72-76/182-194	165-209/75-95	10.5
XL	74-79/188-200	187-231/85-105	11
XXL	79-83/200-212	209-253/95-115	13
XXXL	83-88/212-224	231-276/105-125	13
NOTE: The data refers to a wearer without SCBA or any other equipment.			

No specific adjustment procedures are required. Follow the donning procedure described under “Donning of suit” above.

11.2 Suit weight

Approx. 6.0 kg / 13 lbs for a suit size L with booties/sewn-in socks.
Safety overboots add approx. 2 kg / 4.5 lbs.

11.3 Suit color

Red with white inside. Optional color is olive green with white inside.

11.4 Materials

Suit part/Component	Description
Garment material:	Aramid fabric coated on the outside with Viton®/ butyl rubber and on inside a polymer barrier laminate. Proprietary to Ansell Protective Solutions AB.
Visor material:	2 mm high impact resistant PVC
Glove materials:	3-part glove system:
Inner glove:	AlphaTec® #02-100 made from a barrier laminate
Rubber glove:	AlphaTec® #38-628 made from Viton®/ butyl rubber
Outer glove:	AlphaTec® #58-800 overglove made from knitted aramid
Footwear material:	Integrated bootie/Sewn-in sock made of the primary garment material.
Zipper/Closure material:	Heavy-duty zipper protected by an outside splash guard, closing with Velcro. 1350 mm long **Construction**:
Tape:	Polyester fabric coated with chloroprene rubber on the outside and inside and with a built-in barrier film coated
Chain:	White copper alloy
Slide:	Bronze (copper/tin alloy)
Exhaust valves:	2 pcs/suit place in the back of the hood, protected by a splash protective pocket made of the primary garment material **Construction**:
Valve seat/washer/ nut/cover:	Glass-fibre reinforced polypropylene
Valve/Suit gasket:	Chloroprene rubber
Diaphragm (membrane):	Silicone

11.5 Seam types & attachments

Seam/Attachment	Description
Garment material/ garment material seam:	Aramid fabric coated on the outside with Viton®/ butyl rubber and on inside a polymer barrier laminate. Proprietary to Ansell Protective Solutions AB.
Thread:	Aramid
Inner tape:	Barrier laminate tape, heat welded on the seam
Outer tape:	Viton® rubber tape, glued on the seam
Garment material/ visor seam:	The visor is glued to the suit and sealed both inside and outside.
Inner tape:	Textile reinforced rubber coated tape, glued on the seam
Outer tape:	Viton® rubber tape, glued on the seam
Garment material/ glove seam:	Gloves are attached with a Bayonet ring system (see chapter 9.6). The ring is glued onto the suit.
Garment material/ suit closure seam:	The zipper is stitched to the suit and sealed both inside and outside:
Thread:	Aramid
Inner tape:	Textile reinforced rubber coated tape, glued on the seam
Outer tape:	Viton® rubber tape, glued on the seam
Exhaust valves:	Attached to the suit with a screw and nut
Regulation valve & Passthroughs:	Attached to the suit with a screw and nut

11.6 List of spare parts & accessories

Description & Name	**Sizes**	**Article no**
Gloves:		
AlphaTec® #02-100 inner glove	10 11	K72 251 365 K72 251 465
AlphaTec® #38-628 Viton®/butyl rubber glove	8 9 10 10.5 11	K72 818 339 K72 818 340 K72 818 341 K72 818 342 K72 818 343
AlphaTec® #58-800 Overglove	11	K72 252 115
Cotton comfort glove, 5 pairs	10	K72 240 201
Footwear:		
Onguard Hazmax #87015 boots (minimum order quantity 6 pairs)	S / US 6-8 M / US 9-10 L / US 11-12 XL / US 13-15	V012_87015_S V012_87015_M V012_87015_L V012_87015_XL
Visor accessories:		
Anti-fog lens	CV VP1	K72 270 400 K72 270 300
Anti-fog gel		K69 000 710
Tear-off (anti-scratch) lens, 10 pcs	CV VP1	487 030 050 487 030 040
Hands-Free Visor Light*	CV VP1	487 030 101 487 030 100
Suit ventilation & Airline Passthrough:		
AlphaTec® (TRELLCHEM®) Regulating valve*	CV/VP1	K72 141 600
AlphaTec® (TRELLCHEM®) combined Regulating valve & Passthrough*	CV/VP1	Contact your supplier or Ansell
Other Passthrough brands: Interspiro, Survivair, Scott, Dräger, MSA	CV/VP1	Contact your supplier or Ansell
Storage:		
AlphaTec® Bag		487 100 600
Hanger, T-shaped	CV/VP1	K72 400 200
Storage box, plastic	CV/VP1	K78 700 130

*Instructions included

Description & Name	Sizes	Article no
Test equipment:		
AlphaTec® (Trelltest) Test Equipment*	CV/VP1	487 090 077
AlphaTec® Exhaust valve sealing plug		487 090 191
AlphaTec® Exhaust valve test adapter		487 090 192
Maintenance & Repair:		
Zipper wax kit		K70 000 410
Lubrication for Bayonet ring system, 5 pcs		K69 095 006
Viton O-rings for Sleeve ring, 10 pcs		K72 000 606
Viton O-rings for Glove ring, 10 pcs		K72 000 611
Safety locking pin for Bayonet ring, 10 pcs		K73 103 586
AlphaTec® Exhaust valve, complete		K73 103 000
AlphaTec® Exhaust valve membrane		K73 102 051
Service-kit AlphaTec® (TRELLCHEM®) Regulating valve & Passthrough*		K72 141 100
Repair-kit for AlphaTec® EVO, red*		487 080 325
Repair-kit for AlphaTec® EVO, olive green*		487 080 330

*Instructions included

11.7 Chemical permeation data

The NFPA 1991 approval data was derived from permeation tests performed by Intertek Testing Services, USA, in accordance with ASTM F739 with modifications as specified in NFPA 1991 to provide cumulative permeation data.

NFPA 1991 requires the primary suit materials not to exhibit cumulative permeation in excess of 6.0 µg/cm^2 during 1 hour after the material is conditioned (flexed and abraded).

It should be noted that all chemical testing was performed on swatches of suit material under laboratory conditions, not under actual workplace environments. The user must determine the applicability of the results obtained under laboratory conditions to the actual conditions of use. Information presented is subject to change without notice.

MATERIAL OR SEAM TESTED: GARMENT MATERIAL (AlphaTec® EVO)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical/Requirement	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 6.0
Acetone	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acetonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrolein	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrylonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Anhydrous ammonia (gas)	< 0.22	< 0.20	< 0.31	< 0.20	< 0.93
1,3-Butadiene (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Carbon disulfide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Chlorine (gas)	0.55	< 0.20	< 0.21	0.22	1.18
Dichloromethane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Diethyl amine	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl formamide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl sulfate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethyl acetate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethylene oxide (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hexane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hydrogen chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methanol	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80

MATERIAL OR SEAM TESTED: GARMENT MATERIAL (AlphaTec® EVO)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical/Requirement	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 6.0
Methyl chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Nitrobenzene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Sodium hydroxide, 50% w/w	< 0.30	< 0.20	< 0.32	< 0.39	< 1.21
Sulfuric acid, 96.1% w/w	< 0.20	< 0.79	< 0.26	< 0.20	< 1.46
Tetrachloroethylene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Tetrahydrofuran	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Toluene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Chemical Warfare Agents					
Blister Agent Requirements					≤ 4.00
Distilled Mustard					< 0.1
Nerve Agent Requirements					≤ 1.25
Soman					< 0.05
Optional Liquefied Gases*	≤ 6.0				
Ammonia (liquefied)	< 0.20				
Chlorine (liquefied)	< 0.20				
Ethylene oxide (liquefied)	< 0.20				

*Liquefied chemical gases are only evaluated over 15-minute exposure period.

MATERIAL OR SEAM TESTED: GARMENT SEAM (AlphaTec® EVO)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical/Requirement	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 6.0
Acetone	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acetonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrolein	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrylonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Anhydrous ammonia (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
1,3-Butadiene (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Carbon disulfide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Chlorine (gas)	< 0.22	< 0.20	< 0.20	< 0.20	< 0.82
Dichloromethane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Diethyl amine	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl formamide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl sulfate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethyl acetate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethylene oxide (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hexane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hydrogen chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methanol	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methyl chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Nitrobenzene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Sodium hydroxide, 50% w/w	< 0.29	< 0.20	< 0.20	< 0.20	< 0.89
Sulfuric acid, 96.1% w/w	< 0.32	< 0.20	< 0.20	< 0.20	< 0.92
Tetrachloroethylene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Tetrahydrofuran	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Toluene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80

MATERIAL OR SEAM TESTED: GARMENT SEAM (AlphaTec® EVO)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical Warfare Agents					
Blister Agent Requirements					≤ 4.00
Distilled Mustard					< 0.1
Nerve Agent Requirements					≤ 1.25
Soman					< 0.05

GLOVE MATERIAL (AlphaTec® #58-800 / AlphaTec® #38-628 / AlphaTec® #02-100)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical/Requirement	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 6.0
Acetone	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acetonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrolein	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrylonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Anhydrous ammonia (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
1,3-Butadiene (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Carbon disulfide	< 0.24	< 0.24	< 0.23	< 0.23	< 0.93
Chlorine (gas)	< 0.88	< 0.29	< 0.23	< 0.23	< 1.63
Dichloromethane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Diethyl amine	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl formamide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl sulfate	< 0.45	< 0.28	< 0.26	< 0.20	< 1.19
Ethyl acetate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethylene oxide (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hexane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hydrogen chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methanol	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methyl chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Nitrobenzene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Sodium hydroxide, 50% w/w	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Sulfuric acid, 96.1% w/w	< 0.23	< 0.31	< 0.29	< 0.41	< 1.24
Tetrachloroethylene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Tetrahydrofuran	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Toluene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80

GLOVE MATERIAL (AlphaTec® #58-800 / AlphaTec® #38-628 / AlphaTec® #02-100)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical Warfare Agents					
Blister Agent Requirements					≤ 4.00
Distilled Mustard					< 0.1
Nerve Agent Requirements					≤ 1.25
Soman					< 0.05
Optional Liquefied Gases*	≤ 6.0				
Ammonia (liquefied)	< 0.20				
Chlorine (liquefied)	0.33				
Ethylene oxide (liquefied)	< 0.79				

*Liquefied chemical gases are only evaluated over 15-minute exposure period.

VISOR MATERIAL (AlphaTec® VISOR MATERIAL)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical/Requirement	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 6.0
Acetone	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acetonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrolein	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrylonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Anhydrous ammonia (gas)	< 0.33	< 0.30	< 0.27	< 0.24	< 1.13
1,3-Butadiene (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Carbon disulfide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Chlorine (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dichloromethane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Diethyl amine	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl formamide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl sulfate	< 0.31	< 0.22	< 0.20	< 0.20	< 0.94
Ethyl acetate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethylene oxide (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hexane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hydrogen chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methanol	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methyl chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Nitrobenzene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Sodium hydroxide, 50% w/w	< 0.22	< 0.20	< 0.20	< 0.20	< 0.82
Sulfuric acid, 96.1% w/w	< 0.20	< 0.24	< 0.20	< 0.20	< 0.84
Tetrachloroethylene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Tetrahydrofuran	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Toluene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80

VISOR MATERIAL (AlphaTec® VISOR MATERIAL)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical Warfare Agents					
Blister Agent Requirements					≤ 4.00
Distilled Mustard					< 0.1
Nerve Agent Requirements					≤ 1.25
Soman					< 0.05
Optional Liquefied Gases*	≤ 6.0				
Ammonia (liquefied)	< 0.20				
Chlorine (liquefied)	< 0.20				
Ethylene oxide (liquefied)	< 0.20				

*Liquefied chemical gases are only evaluated over 15-minute exposure period.

VISOR SEAM (AlphaTec® VISOR SEAM)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical/Requirement	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 6.0
Acetone	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acetonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrolein	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Acrylonitrile	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Anhydrous ammonia (gas)	0.58	< 0.91	< 0.36	< 0.20	2.04
1,3-Butadiene (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Carbon disulfide	< 0.22	< 0.20	< 0.22	< 0.20	< 0.84
Chlorine (gas)	< 0.25	< 0.30	< 0.20	< 0.20	< 0.95
Dichloromethane	< 0.20	< 0.21	< 0.22	< 0.20	< 0.83
Diethyl amine	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl formamide	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Dimethyl sulfate	< 1.09	< 0.95	< 1.36	< 1.16	< 4.56
Ethyl acetate	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Ethylene oxide (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hexane	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Hydrogen chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methanol	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Methyl chloride (gas)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Nitrobenzene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Sodium hydroxide, 50% w/w	0.77	< 0.20	< 0.20	< 0.20	1.37
Sulfuric acid, 96.1% w/w	< 0.40	< 0.20	< 0.20	< 0.20	< 1.0
Tetrachloroethylene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Tetrahydrofuran	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80
Toluene	< 0.20	< 0.20	< 0.20	< 0.20	< 0.80

VISOR SEAM (AlphaTec® VISOR SEAM)					
	Cumulative Permeation (µg/cm²) over Test Period Interval				
Test Period Interval	0-15 min	15-30 min	30-45 min	45-60 min	1-hour total
Chemical Warfare Agents					
Blister Agent Requirements					≤ 4.00
Distilled Mustard					< 0.1
Nerve Agent Requirements					≤ 1.25
Soman					< 0.05

11.8 NFPA 1991 Approval data

Ensemble or Element	Performance Requirement	Test Method	Requirement	Result
Base Requirements				
Ensemble	Liquidtight integrity	ASTM F1359 (Section 8.3)	No liquid penetration	Pass
			No liquid accumulation in outer gloves	Pass
			No liquid accumulation in outer boots	Pass
	Overall ensemble function and integrity	ASTM F1154/ ASTM F1052 (Section 8.4)	Ending suit pressure ≥80 mm water gauge	102 mm
			Test subject completes task	Pass
			Test subject has visual acuity of 20/35 or better through face piece lens and visor	20/20
			Time to remove and reinsert hands in gloves 5 times ≤2 min	Right 94 sec Left 90 sec
	Airflow capacity	Section 8.5	Internal suit pressure ≤150 mm water gauge	Pass
			Ending suit pressure ≥80 mm water gauge	102 mm
	Overall inward leakage	Section 8.8	$PPDF_{sys}$ ≥488	1618
			PPDFi (local) ≥1071	1746 (crotch)
Exhaust valve	Exhaust valve mounting strength	Section 8.9	Strength >135 N	2041 N
	Exhaust valve inward leakage	Section 8.24	Leakage rate ≤30ml/min	13.3 ml/min

Ensemble or Element	Performance Requirement	Test Method	Requirement	Result
External fitting	External fitting installation effect on integrity	ASTM F1052 (Section 8.2)	Ending suit pressure ≥80 mm water gauge	102 mm
	External fitting pullout strength	Section 8.13	Strength >1000 N	Scott 3644 N
				Dräger 4993 N
				Interspiro 2106 N
				Survivair 3270 N
				MSA Dual Purpose 3792 N
				AlphaTec (TRELLCHEM) Ventilation 5245 N
Suit material	Flame resistance	ASTM F1358 (Section 8.7)	Afterflame ≤2 seconds	N/A
			No melting or dripping	Pass
	Burst strength	ASTM D751 (Section 8.10)	Strength >200 N	1156 N
	Puncture propagation tear resistance	ASTM D2582 (Section 8.11)	Tear resistance ≥49 N	M 57.2 N XM 84.9 N
	Cold temperature performance	ASTM D747 (Section 8.12)	Bend moment ≤0.057 Nm	M 0.040 Nm XM 0.039 Nm
Suit seam	Breaking strength	ASTM D751 (Section 8.22)	Strength >67 N/25 mm	464 N/25 mm
Suit closure	Chemical penetration resistance	ASTM F903 (Section 8.23)	No penetration of 15 liquid chemicals	Pass
	Breaking strength	ASTM D751 (Section 8.22)	Strength >67 N/25 mm	160 N/25 mm
Visor material	Flame resistance	ASTM F1358 (Section 8.7)	Afterflame time ≤2 sec	N/A
			No melting or dripping	Pass
	Visor high-mass impact resistance	Section 8.29	No full-thickness cracks, holes, or fractures	Pass

Ensemble or Element	Performance Requirement	Test Method	Requirement	Result
Visor seam	Breaking strength	ASTM D751 (Section 8.22)	Strength >67 N/25 mm	603 N/25 mm
Glove material	Flame resistance	ASTM F1358 (Section 8.7)	Afterflame time ≤2 sec	N/A
			No melting	Pass
	Cut resistance	ASTM F1790 (Section 8.15)	Blade travel distance ≥20 mm at 150 grams	> 50 mm
	Puncture resistance	ASTM F1342 (Section 8.16)	Puncture force ≥22 N	99 N
	Cold temperature performance	ASTM D747 (Section 8.12)	Bend moment ≤0.057 Nm	M 0.006 Nm XM 0.004 Nm
Gloves	Dexterity	ASTM F2010 (Section 8.17)	Percent increase in bare handed control <600%	209%
Optional Flash Fire Requirements				
Ensemble	Overall flash fire protection	Section 8.25	Afterflame time ≤2 seconds	0 sec
			Ending suit pressure ≥13 mm water gauge	91 mm 94 mm 91 mm
			Test subject has visual acuity of 20/100 or better through face piece lens and visor	20/20
Garment material	Heat transfer performance	ASTM F2700 (Section 8.18)	HTP Rating ≥12 cal/cm^2	13.6
	Flame resistance	ASTM F1358 (Section 8.7)	Afterflame time <2 sec	M 0.4 sec XM 0.3 sec
			Burn distance ≤100 mm	M 27 mm XM 25 mm
			No melting and dripping	Pass

Ensemble or Element	Performance Requirement	Test Method	Requirement	Result
Visor material	Heat transfer performance	ASTM F2700 (Section 8.18)	HTP Rating ≥12 cal/cm^2	42.8
	Flame resistance	ASTM F1358 (Section 8.7)	Afterflame time <2 sec	0.4 sec
			Burn distance ≤100 mm	15 mm
			No melting and dripping	Pass
Glove material	Heat transfer performance	ASTM F2700 (Section 8.18)	HTP Rating ≥12 cal/cm^2	> 30
	Flame resistance	ASTM F1358 (Section 8.7)	Afterflame time <2 sec	0 sec
			Burn distance ≤100 mm	10 mm
			No melting and dripping	Pass

For Footwear data, please refer to the TDPs (Technical Data Packages) for Onguard Hazmax #87015 or #87012 and Tingley Hazproof #82330 or #82331.

12. Warranty

In case of faults or defects, if any, in the protective suits, including gloves and other accessories, the following is applicable:

If a fault or defect appears in the protective suit as a result or in the course of any use, function or state of the protective suit, the purchaser is requested to contact the company from which the suit was purchased. The terms of sale agreed upon between the purchaser and the said company shall apply in this case. Ansell Protective Solutions AB shall have no liability to purchasers of the protective suits other than when the suit in question was purchased directly from Ansell Protective Solutions AB.

The liability of Ansell Protective Solutions AB for faults or defects of a protective suit shall be subject to the Standard Warranty set forth in its General Conditions of Delivery for Industrial Rubber Products, unless otherwise stated in a separate agreement in writing between Ansell Protective Solutions AB and the purchaser. The General Conditions of Delivery are available on request and for download on http://protective.ansell.com/en/About/Trade-conditions/

This manual does not in any way comprise a guarantee or warranty on the part of Ansell Protective Solutions AB, and Ansell Protective Solutions AB expressly excludes any implied warranty of merchantability or fitness. Ansell Protective Solutions AB is not in any way nor under any conditions liable for compensation to the purchaser or commercial user of a protective suit for injury to (including death of) any person or loss of or damage to property of any kind or for costs, loss of profits or other damage or loss of any nature whatsoever.

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