



RESPIREX™

Living + Breathing Personal Protection



Product Catalogue



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Respirex is a world leading supplier of personal protective solutions, specialising in the design and manufacture of high-performance chemical, particulate and respiratory protective clothing and specialist protective footwear.

Our comprehensive product range includes chemical protective suits for fire and emergency services teams, work-wear for the chemical and petrochemical industries and air-fed suits for nuclear power facilities and pharmaceutical manufacturing.

Our modern, automated footwear factory produces a range of specialist protective boots for working with aggressive chemicals or high voltages, along with industry specific footwear for food processing, mining and construction.

We are unique in offering a complete service that includes standard or tailored equipment solutions supported by unrivalled training, aftercare and support.

Our in-house testing laboratory is UKAS accredited and offers a range of chemical permeation and physical testing services to European, International and American standards. We continually test the fabrics and seams used in our clothing to ensure the performance of our equipment.



Gas-tight suits protect emergency responders and chemical workers from dangerous and toxic chemicals in liquid or gaseous form and are used in areas that are considered immediately dangerous to life and health (IDLH).

Our Type 1A suits are designed for Self-Contained Breathing Apparatus (SCBA) worn inside the suit, which provides the greatest protection to the emergency responder and simplifies decontamination after an incident. Type 1B suits for BA worn externally are also available and can be useful when working in a confined area, as the BA cylinder can be slipped off the shoulders and passed forward.

The Type 1A and B gas-tight suits in this catalogue are all certified to EN 943-2:2002(ET) - "Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles - Part 2: Performance requirements for "gas-tight" (Type 1) chemical protective suits for emergency teams (ET)." All suits are leak-tightness tested to EN464 prior to dispatch.

Through our network of approved service centres Respirex are able to offer our customers repair and testing facilities for our reusable gas-tight suits (as well as our other re-usable clothing ranges). This ensures the longest possible service life for the suit and provides reassurance for users, knowing that suits have been inspected and tested according to the manufacturers instructions for use.

SUIT MATERIALS

Respirex gas-tight suits are available in a number of high-performance chemical barrier fabrics, the choice of fabric will depend on the type and frequency of use.

Chemprotex™ 400

Lightweight, flexible, high-performance chemical barrier fabric for limited life suits that provides over 480 minutes protection against all 15 of the challenge chemicals in EN943-2:2002 (and many more).

Tychem® TK

Seven-layer, nonwoven chemical barrier fabric for limited life suits from DuPont. Excellent chemical resistance with an extensive database of chemical permeation test data (see page 36).

Viton Laminate

An exterior Viton skin bonded to a multi-layer chemical barrier film with a thermoplastic inner. Provides excellent chemical resistance in a light weight reusable fabric.

Viton/Butyl/Viton

A heavy-duty, flexible, reusable fabric with excellent chemical resistance against a wide range of tested chemicals (see page 36).

GTL LIGHTWEIGHT SUIT

A lightweight, fully encapsulating, Type 1A - ET gas-tight suit, designed to protect the emergency responder against toxic, corrosive gases, liquids and solid chemicals.

- Five year, maintenance free shelf-life
- Fully encapsulating design to allow breathing apparatus to be worn inside the suit
- Manufactured in yellow Chemprotex™ 400 a light weight high performance chemical barrier, multi-layer nonwoven fabric
- Heavy-duty 122cm (48") long gas-tight zip, fitted to the right hand side of the suit; a flap with a Velcro closure is fitted to cover the teeth of the zip
- Adjustable internal support belt and bat-wing sleeves for optimum wearer comfort
- Flexible, multi-laminated, anti-mist visor giving clear undistorted vision
- Chemically protective, laminated glove welded to the suit material with an elasticated over-sleeve to prevent splash entering the supplied Neoprene outer gloves
- Integral socks with outer splash guards
- Suit material tested for resistance to permeation by chemical warfare agents in accordance with FINABEL O.7.C
- The suit material has passed the requirements of EN14126:2003 for protective clothing against infective agents

Certification:



TYPE 1A-ET

EN943-2:2002(ET)

Gas-Tight chemical protective suits for emergency teams



Integral Sock Foot

LIMITED LIFE SUIT

Fully encapsulating Type 1A - ET limited life gas-tight suit manufactured in Tychem TK a high performance, seven layer, nonwoven, chemical barrier fabric from DuPont.

- Maintenance free for the first five years unless used (see below)
- Ten year shelf-life
- Fully encapsulating design to allow breathing apparatus to be worn inside the suit
- Heavy duty 122cm (48") long gas-tight zip, fitted to the right hand side of the suit - flap with a Velcro closure fitted to cover the teeth of the zip
- Adjustable internal support belt and bat-wing sleeves for optimal wearer comfort
- Flexible, multi-laminated, anti-mist visor giving clear undistorted vision
- Dual glove system for chemical and mechanical protection
- Gloves fitted using the Respirix locking cuff or Sure-Loc cuff
- Choice of detachable Hazmax™ FPA safety boots (a heat resistant version of the Hazmax boot that complies with EN 943-2), or integral socks with outer splash guards
- Pressure test required annually from year five or after each use

Options:

- Air line pass-through for supplementary air (page 7)
- Equipment attachment points

Certification:



TYPE 1A-ET

EN943-2:2002(ET)

Gas-Tight chemical protective suits for emergency teams



Dual Gloves

GTB REUSABLE SUIT

The fully encapsulating GTB is a Type 1A - ET reusable gas-tight suit suitable for emergency responders and in industrial applications such as HF alkylation facilities.

- Ten year shelf-life
- Manufactured in either Viton/Butyl/Viton, our hardest wearing material, or Viton Laminate, our lightest weight reusable ET suit fabric, with excellent chemical permeation resistance
- Heavy-duty 122cm (48") long gas-tight zip, fitted to the right hand side of the suit; double flaps with a Velcro closure are fitted to cover the teeth of the zip
- Rigid, double layer visor, permitting clear undistorted vision
- Gloves fitted using the Respirex locking cuff or Sure-Loc cuff
- Dual glove system for chemical and mechanical protection
- Choice of detachable Hazmax™ FPA safety boots (a heat resistant version of the Hazmax boot that complies with EN 943-2), or integral socks with outer splash guards
- Adjustable internal support belt enables wearers of varying sizes to use the suit comfortably
- Annual pressure test required (or after each use)

Options:

- Air line pass-through for supplementary air (page 7)
- Equipment attachment points
- Suit ventilation (GTVB model number)
- Fall arrest system

Certification:



TYPE 1A-ET
EN943-2:2002(ET)

Gas-Tight chemical protective suits for emergency teams



TYPE 1A
EN943-1:2002

Gas-Tight chemical protective suits



TRAINING SUIT

A training version of the our encapsulating gas-tight suits. Manufactured in green PVC and clearly marked training suit to avoid confusion in an emergency.

- Reproduces the design of the operational suit
- Designed for multiple re-use with no testing required
- Fully encapsulating design to allow breathing apparatus to be worn inside the suit
- Heavy-duty 122cm (48") long gas-tight zip, fitted to the right hand side of the suit; a flap with a Velcro closure is fitted to cover the teeth of the zip
- Adjustable internal support belt and bat-wing sleeves for optimum wearer comfort
- Rigid or flexible visor, depending on model
- Dual glove system for chemical and mechanical protection
- Gloves fitted using the Respirex locking cuff
- Detachable Hazmax™ safety boots
- Exhalation valves ensure that the pressure change within the suit does not exceed 400 pascals in one minute



GTIM REUSABLE SUIT

A Type 1B-ET reusable gas-tight suit designed to be used with self contained breathing apparatus worn externally. Manufactured in Viton/Butyl/Viton, the suit provides excellent chemical and mechanical protection.

- A full facemask complying with clause 2 or 3 of EN136:1998 is permanently bonded with a gas-tight seal to the hood of the suit. The choice of facemask is dependant on the breathing apparatus to be used - contact Respirix for guidance on compatible facemasks.
- Heavy duty 122cm (48") long gas-tight zip, fitted diagonally from left shoulder to right thigh, complete with storm flap.
- Gloves fitted using the Respirix locking cuff
- Dual glove system for chemical and mechanical protection
- Choice of detachable Hazmax™ FPA safety boots (a heat resistant version of the Hazmax boot that complies with EN 943-2), or integral socks with outer splash guards
- Seams are stitched and double taped
- Exhalation valves ensure that the pressure change within the suit does not exceed 400 pascals in one minute
- Annual pressure test required (or after each use)
- The separate Protex hood must be worn over the breathing apparatus for the suit to comply with the requirements of EN943-2:2002

Certification:



TYPE 1B

EN943-2:2002(ET)*

* When used with Protex Hood



Protex Hood

GTA REUSABLE AIRLINE SUIT

The GTA is a Type 1C reusable gas-tight suit designed to be used with an external compressed air source and is manufactured in a range of chemically resistant fabrics.

- Designed for long duration usage in harmful atmospheres
- Breathing air and ventilation system completely contained within the suit
- An audible warning device designed to activate if the airflow drops below the minimum level required to maintain CO₂ below 1%
- Heavy duty 122cm (48") long gas-tight zip, fitted vertically down the right hand side of the suit
- Choice of detachable Hazmax™ safety boots, or integral socks with outer splash guards
- Gloves compatible with the choice of suit material are fitted using the Respirix locking cuff mechanism or new Sure-Loc cuff mechanism, allowing the user to easily change the gloves when necessary
- Seams are stitched and double taped
- Adjustable internal support belt enables wearers of varying sizes to use the suit comfortably
- Exhalation valves ensure that the pressure change within the suit does not exceed 400 pascals in one minute
- Three-point hanging system to prevent damage during storage
- Pressure test required after each use
- Required Airflow: 360(min) to 440(max) L/min

Certification:



TYPE 1C

prEN943-1:1995



Shown in white Butyl, as used by NASA and EADS Astrium

SUIT OPTIONS

N.B. Options not available on all models - check suit descriptions.

Dual Gloves

Our gas-tight suits are supplied with two pairs of gloves, an internal chemical barrier glove and a durable Neoprene external glove for mechanical protection. Gloves are bonded together at the tips of the fingers for easier donning & doffing (Neoprene gloves are supplied separately with GTL suit).



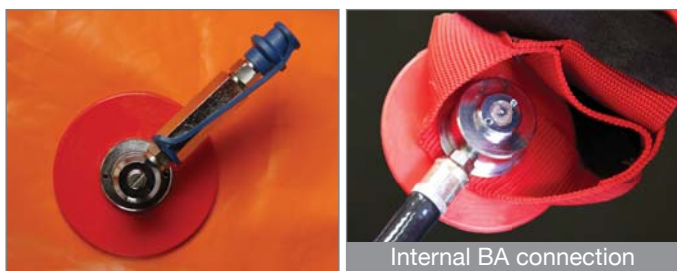
Locking Cuff

The Respirix locking cuff securely fixes the dual-layer gloves to the suit, allowing the suit to be donned quickly when needed. Gloves can be replaced easily after use if required.



Air-line Pass-through

The air-line pass-through on the outside of the suit allows the connection of a second cylinder or an air-line to the second man attachment on the breathing apparatus during decontamination.



Internal BA connection

Suit Ventilation (GTVB)

Adjustable ventilation system for the arms and legs of the GTB suit, fed from the wearers BA set. Ventilation is adjustable in steps from 0 to 100 litres per minute (L/min) from a control valve mounted to the chest of the suit.



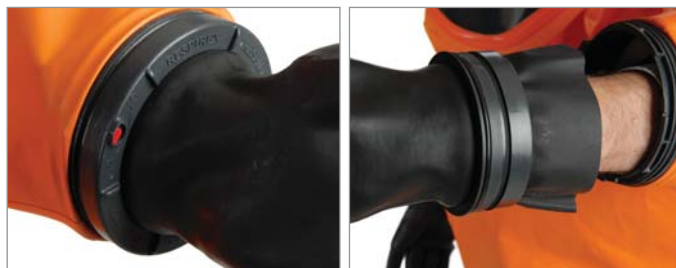
Detachable Boots

Detachable Hazmax boots provide excellent user comfort and protection (see page 27) and allow the boots to be easily replaced if they become damaged.



Sure-Loc Cuff

The Respirix Sure-Loc cuff offers the benefits of the standard locking cuff, but is fixed from the front allowing for quicker glove changes.



Equipment Attachments

All suits apart from the GTL can be specified with optional attachment points for a torch, life-line, anchor point, and Diktron or Firefly DSU's.



Fall Arrest

The fall arrest version of the GTB suit incorporates a gas-tight connector that links the customers internal safety harness to a carabiner on the outside of the suit.



Internal carabiner

Chemical Splash Suits



LIMITED LIFE SPLASH SUITS

Limited life liquid-tight splash suits provide a cost effective solution for dealing with a wide range of chemical and CBRN hazards. Particularly suitable for applications where suits are needed infrequently, where the type of hazard is unknown, or where decontamination facilities are limited - they are widely used by fire brigades, police, civil defence, transport and shipping companies.

With a storage life of ten years (when stored according to the guidelines in the user instructions), our light-weight splash suits provide an extremely cost effective way of providing protection for workers or emergency responders.

Material

Our range of limited life suits is manufactured from blue Chemprotex™ 300 (see page 37), a high performance chemical barrier material that is lightweight and extremely flexible.

REUSABLE SPLASH SUITS

Reusable chemical splash suits provide a durable, lower cost solution for applications where the chemical hazard is known (e.g. industrial applications) and where decontamination facilities are readily available.

The increased strength of material and options for reinforcement make reusable splash suits suitable for situations with a greater risk of abrasion or puncture. The locking cuffs fitted to the suit allow gloves to be selected (and changed) based on the application and chemicals being used.

Materials

Reusable splash suits are available in either Butyl, Neoprene or PVC C2 - the best fabric for your application will depend on the exact application and chemical hazard (see pages 35 & 36 for materials mechanical properties and chemical permeation).

LIMITED LIFE SC1 SPLASH SUIT

Lightweight, Type 3 liquid-tight chemical splash contamination suit, designed for use with breathing apparatus worn outside the suit, or with a face mask and filter.

- One-piece construction in Chemprotex™ 300
- Integral hood, with Neoprene rubber face grommet, to seal around the wearer's face mask
- 91cm (36") Nylon zip, fitted across the shoulders in the rear of the suit, with double external zip-flaps sealed with double-sided tape
- Chemically protective laminated glove, welded to the suit material
- Integral socks, with plain outer leg, allowing the wearing of customer's own boots (boots not included)

Certification:



TYPE 3
EN14605:2005
Liquid-Tight Chemical
Protective Clothing



TYPE 4
EN14605:2005
Spray-Tight Chemical
Protective Clothing



TYPE 5
EN13982-1
Particulate Protective
Clothing



TYPE 6
EN13034
Limited Spray-Tight
Chemical Protective
Clothing



IL: Class 1
EN 1073-2:2002
Radioactive Particulate
Protective Clothing



EN 1149-5:2008
Antistatic Protective
Clothing



EN 14126:2003
Protective Clothing
Against Infective
Agents



LIMITED LIFE SC4 SPLASH SUIT

Lightweight, Type 3 liquid-tight chemical splash contamination suit, designed for SCBA worn inside the suit.

- Laminated anti-mist visor, giving clear undistorted vision
- 117cm (46") Fine tooth zip, fitted to rear of suit, closing at bottom, complete with single storm flap with double-sided tape
- Chemically protective, laminated glove, welded to the suit material
- Integral socks in Chemprotex™ 300 material, with plain outer leg, allowing the wearing of customer's own boots (boots not included)

Certification:



TYPE 3
EN14605:2005
Liquid-Tight Chemical Protective Clothing

Material Resistance:



EN 14126:2003
Protective Clothing Against Infective Agents



EN 1149-5:2008
Antistatic Protective Clothing



REUSABLE SC1 SPLASH SUIT

A reusable Type 3 splash contamination suit designed for Self Contained Breathing Apparatus (SCBA) worn externally.

- One piece construction with integral hood incorporating a face seal that is both shaped and flexible, which provides a tight seal around the breathing apparatus facemask, preventing liquid penetration
- Horizontal 91cm (36") zip positioned across the rear shoulders of the garment with storm flaps secured by Velcro
- Double layer of material at the rear to prevent wear caused by the breathing apparatus rubbing against the suit
- Elasticated inner legs with stirrups with elasticated outer legs designed to accommodate safety boots of the user's choice
- Safety gloves compatible with the material of the suit, fitted by means of either the Respirex locking cuff or the Sure-Loc cuff
- Available in a range of chemical resistant fabrics

Options:

- Reinforced knees and elbows
- Gas-tight zip
- Self dress version with 122cm (48") gas-tight zip fitted vertically down the right hand side of the suit
- Detachable Hazmax™ boots

Certification:



TYPE 3
EN466:1995



EN463:1994
When worn with appropriate boots and gloves



EN468:1993
When worn with appropriate boots and gloves



REUSABLE SC4 SPLASH SUIT

A fully encapsulating reusable Type 3 splash contamination suit designed for Self Contained Breathing Apparatus (SCBA) worn inside the suit.

- Flexible visor giving wide undistorted field of vision
- Heavy duty 122cm (48") long gas-tight zip, fitted to the right hand side of the suit
- Adjustable internal support belt allows users of varying sizes to wear the suit comfortably
- Elasticated inner legs with stirrups with elasticated outer legs
- Safety gloves compatible with the material of the suit, fitted by means of either the Respirex locking cuff or the Sure-Loc cuff
- Exhalation valves ensure that the pressure change within the suit does not exceed 400 pascals in one minute
- Available in a range of chemical resistant fabrics

Certification:



TYPE 3
EN466:1995



EN463:1994
When worn with appropriate boots and gloves



EN468:1993
When worn with appropriate boots and gloves



Air-Supplied Garments



REUSABLE AIR-FED GARMENTS

These are typically used in petrochemical and chemical applications and in pharmaceutical applications where there is no risk of cross contamination.

Suits are certified to EN 943-1:2002 Type 2 (non-gas-tight chemical protective suits), while hoods are approved to EN 14594 (respiratory protective devices)

Isolator suits are built to individual customer specification and are therefore not certified.

LIMITED LIFE AIR-FED GARMENTS

These are generally used in the nuclear and pharmaceutical industries where the risk of suit contamination prevents the re-use of suits.

Suits are available with a choice of fabrics, depending on the type of hazard - PVC in both 150 and 300µm provides excellent particulate protection and is widely used in the nuclear industry; Chemprotex™ 300 provides particulate and chemical protection and is suitable for pharmaceutical use.

AIR SUPPLY

The compressed air used in these garments must conform to EN 12021:1999 Annex A. If there is a risk of partial contamination in the factory compressed air ring main, a Respirex in-line filter unit should be fitted to the air system; this will prevent the ingress of contamination down to 5 microns in size from entering the garment.

Respirex manufacture a range of portable filter cabinets to ensure air supplies meet EN 12021:1999, along with a range of other air-line equipment and accessories. For details see pages 32 and 33.

SIMPLAIR REUSABLE TANK SUIT

Type 2 non-gas-tight reusable tank suit available in a range of chemically resistant materials with rigid visor and outer disposable visor.

- 122cm (48") Heavy-duty gas-tight zip, positioned down the right hand side of the suit, closing at the top
- Respirex locking cuff system with reinforced cuffs
- Leg options: elasticated inner and outer legs with elasticated stirrups, sock foot or detachable Hazmaz boots
- Audible warning device designed to activate if the airflow drops below the minimum required to maintain CO₂ below 1%
- Adjustable waist-belt supports the air system and is fitted with a foam back pad for increased comfort
- Air distribution block with twin breathing hoses to either side of the hood and cooling hoses to wearer's arms and legs
- Three-point hanging attachments
- Pigtail yellow PVC 3/8" bore air-hose, terminating in a 1/4" BSP male thread
- Exhalation valves ensure that the pressure change within the suit does not exceed 400 pascals in one minute
- Available in Butyl, Neoprene or C2 PVC materials
- Required airflow: 360(min) to 440(max) L/min

Certification:



TYPE 2

EN943-1:2002

"Non-Gas-Tight" Chemical Protective Suits



SIMPLAIR REUSABLE SUIT

Type 2 non-gas-tight reusable suit available in a range of chemically resistant materials.

- Air system completely contained within the suit that provides breathable and cooling air to the user
- Audible warning device designed to activate if the airflow drops below the minimum required to maintain CO₂ below 1%
- Adjustable waist-belt supports the air system and is fitted with a foam back pad for increased comfort
- Exhalation valves ensure that the pressure change within the suit does not exceed 400 pascals in one minute
- Flexible PVC visor giving a 360° field of vision, or durable rigid PVC visor (with optional removable outer visor) for undistorted vision
- Three-point hanging system which helps prevent distortion during storage
- 91cm (36") Water-tight zip or double-slided Nylon zip, fitted across the chest
- 15cm (6") Zip flap - plain or velcro fastening
- Respirex locking cuff system
- Leg options: elasticated inner and outer legs with elasticated stirrups, sock foot or detachable Hazmaz boots
- A wide range of approved airline couplings can be fitted to the suit, however it is recommended that large bore couplings are used
- Available in Butyl, Neoprene or C2 PVC materials
- Required airflow: 360(min) to 440(max) L/min

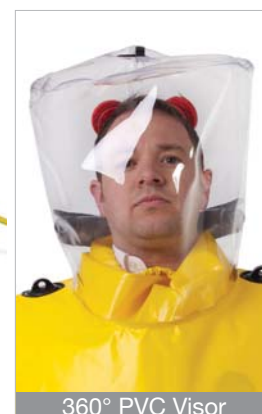
Certification:



TYPE 2

EN943-1:2002

"Non-Gas-Tight" Chemical Protective Suits



360° PVC Visor

AIRPROTEX AF

Type 2 non-gas-tight one-piece suit is a single use garment with a reusable, removable air system that provides the highest level of protection against particulate contamination.

- Manufactured in flame retardant, blue tinted, anti-static 300µm PVC or blue Chemprotex™ 300, a highly chemically resistant barrier laminate
- For use with AF-429 regulator and breathing pack (see below) which are easily removable for re-use
- For use with breathable air-supplied from an external compressed air source providing positive pressure
- Cooling system, completely contained within the garment, provides cooling air to the user after connection to AF-429
- Short air-line 'tail' for taping to hose
- Noise level within the suit <80dB
- Welded, chemically protective, laminated glove on Chemprotex™ 300 suits, O-ring cuff on PVC suits
- Sock feet with outer leg for use with external boots or anti-slip feet with ankle ties for internal footwear
- Front entry with zip flap
- Clear visor with horizontal and vertical fields of vision
- Four exhalation valves fitted with covers

Certification:



TYPE 2

EN943-1:2002

"Non-Gas-Tight" Chemical Protective Suits

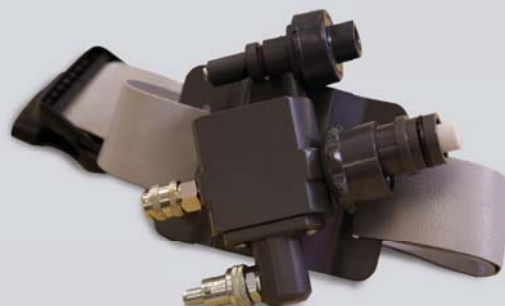


Chemprotex™ 300

AF-429 REGULATOR

The AF-429 is a reusable automatic flow control regulator for breathable air and suit ventilation.

- Self adjusting when used with a breathable compressed air-line system operating between 4 and 9 bar
- Low-flow warning whistle
- Compact, lightweight design
- Supplied with waist-belt
- Use with Respirex breather pack



BREATHER PACK

The breather pack is a flexible air connector that buttons into a compatible suit (e.g. Airprotex AF), bringing breathable air from the waist mounted regulator up to the front of the visor of the suit.



AIRPROTEX FM CONVERTIBLE SUIT

A versatile single use facemask suit developed for use in the nuclear industry to provide protection against particulate radioactive contamination.

- One piece air cooled suit designed for use with airline breathing apparatus
- For lower risk areas the suit can be easily converted with the Respirix breather pack for use without a facemask
- Built-in ventilation to arms and legs provides cooling for user
- Rear entry with double zip flap
- Choice of integral socks and outer legs, or anti-slip feet with ankle ties for internal footwear
- Removable gloves with O-ring cuff and sealing ring, or plain sleeves for taping
- CE marked to EN1073-1:1998

Type approved for use in the following configurations:

- Positive pressure demand airline respiratory system using Scott Respiratory Airline System (RAS) and Promask PP
- Constant airflow system using Scott Air Control waist-belt and Promask Combi
- Air fed suit system using Respirix breather pack and Scott air control waist-belt
- Please refer to Scott literature for required air flow/pressure

N.B. An emergency breather facility is provided in each combination

Specifications:

Available in anti-static 150 µm or 300 µm unsupported PVC, or thermoplastic polyether based polyurethane film (TPU). Anti-static properties are in accordance with EN1149-1:1996.

Options:

- Optional Welders version (300 µm PVC suits only)
- Optional Fall Arrest version (300 µm PVC suits only)

Certification:



EN1073-1:1998

Class 5 (50,000) Nominal Protection Factor (NPF)
Protective Clothing Against Particulate Radioactive Contamination



Hood Air Supply

FRONTAIR 2 PARTICULATE SUIT

The Frontair 2 one-piece suit is a single use garment that provides the highest level of protection against particulate contamination.

- Manufactured in flame retardant, blue tinted, 150 µm or 300 µm unsupported anti-static PVC
- Designed for use with breathable air supplied from an external compressed air source, providing positive pressure
- Air-dissipation system completely contained within the garment, that provides breathing and cooling air to the user
- User adjustable variable airflow control valve
- 360° swivelling airline system
- Adjustable, internal waist-belt
- Welded PVC gloves
- Anti-slip feet, with ankle ties
- Rear-entry, with double zip flap
- Clear visor, with horizontal and vertical fields of vision
- Six exhalation valves, fitted with covers
- Evacuation tear off strip across the chest of the suit
- Reinforced knee and elbow pads
- Clear dosimeter window
- Required airflow: 260(min) to 600(max) L/min

Certification:



EN1073-1:1998

Class 5 (50,000) Nominal Protection Factor (NPF)
Protective Clothing Against Particulate Radioactive Contamination



Flow Control Valve

FRONTAIR 2 PARTICULATE & CHEMICAL SUIT

The Frontair 2 one-piece suit is a single use garment that provides excellent protection against chemical and particulate contamination.

- Manufactured in blue Chemprotex™ 300, a highly chemically resistant barrier laminate (see page 37)
- Designed for use with breathable air, supplied from an external compressed air source providing positive pressure
- Air-dissipation system completely contained within the garment, that provides breathing and cooling air to the user
- User adjustable variable airflow control valve
- 360° swivelling airline system
- Adjustable, internal waist-belt
- Welded chemically protective laminated gloves
- Anti-slip feet, with ankle ties
- Rear-entry, with double zip flap, or self dress front entry version available as an option
- Clear visor, with horizontal and vertical fields of vision
- Six exhalation valves, fitted with covers
- Required airflow: 260(min) to 600(max) L/min

Certification:



EN1073-1:1998

Class 5 (50,000) Nominal Protection Factor (NPF)

Protective Clothing Against Particulate Radioactive Contamination



Anti-Slip Foot



Self Dress Suit



ISOLATOR SUIT

Developed in conjunction with a leading pharmaceutical manufacturer for use within a positive or negative pressure chamber, the suit incorporates features which allow the wearer to easily access or remove themselves from the garment and which also prevent the suit from collapsing against the wearer during use.

- Manufactured from a tough, lightweight material which is resistant to most workplace chemicals and sterilising agents
- Clear, flexible 360° hood with a replaceable inner visor maintains full wearer headspace at all times
- Hood will not collapse when used in a positive pressure chamber
- Twin layer body and upper arms provide comfort and flexibility and prevent the suit from collapsing against the wearer in a positive pressure chamber
- Stiffened lower arm for ease of wrist and arm movement
- Twin recessed glove connectors allowing easy initial glove fitting and in-use glove replacement during work activity
- Low pressure air inlet supplying ventilation to the suit, particularly to the breathing zone (head and face)
- Low noise suit ventilation
- Excellent freedom of movement
- Internal padded neck and shoulder support to reduce garment cling whilst balancing the hood
- Robust hood and arm hanging support system for ease of donning and doffing
- All surfaces are smooth for ease of decontamination



SIMPLAIR REUSABLE HOOD

Air-supplied hood available in yellow Neoprene material, with rigid visor and outer disposable visor or in PVC with a soft 360° visor.

- Drawstring neck-seal
- PVC Hoods feature 360° soft visor; Neoprene hoods incorporate a rigid wraparound visor
- Three-point hanging attachments
- Adjustable waist-belt with back pad
- Simplair air system mounted in cape incorporating low flow warning whistle
- Air distribution block with twin breathing hoses to either side of the hood.
- Pigtail yellow PVC 3/8" bore air-hose, terminating in a 1/4" BSP male thread
- Required airflow: 220(min) to 280(max) L/min

Certification:

CLASS 4A (Headtop)

CLASS 4B (Belt Assembly)

EN 14594:2005, Respiratory protective devices

TYPE PB [4]

EN 14605:2005+A1:2009

Part Body Chemical Protective Clothing



Neoprene



PVC

NIOSH REUSABLE BLOUSE

A reusable blouse with Type C Continuous Flow Class NIOSH Approval (No: TC-19C-378). The blouse is manufactured from fluorescent red Neoprene and fitted with a double layer rigid visor with a removable outer visor.

- Three-point hanging system
- An air system contained within the hood that provides breathing air to the wearer. An internal, adjustable waist-belt supports the air system.
- Twin exhalation valves.
- Can be used at between 12psi and 39psi (dependent on air supply hose length).
- Externally taped seams
- Open ended gas-tight zip fitted from the neck to waist
- Respirex locking cuff system
- External waist-belt provides a seal to the bottom of the blouse
- Required airflow: 170(min) to 280(max) L/min (6 to 10 CFM)



FRONTAIR 2 HOOD

An air-fed hood designed for use in atmospheres where particulate contamination may be a hazard.

- An air dissipation system completely contained within the hood that provides breathing air to the user
- Removable 360° swivelling airline system with adjustable waist-belt and hose restraint
- Elasticated neck seal that is designed to allow the removal of a contaminated hood without touching the inner surfaces
- Audible low airflow warning device
- Optional emergency breather attachment
- Available in anti-static 150 µm or 300 µm unsupported PVC
- Required airflow: 160(min) to 320(max) L/min

Certification:

CLASS 4A (Headtop)

CLASS 4B (Belt Assembly)

EN 14594:2005, Respiratory protective devices





BENEFITS OF POWERED RESPIRATORS

Powered respirators use a motor to pull air through a filter, as opposed to conventional respirators and facemasks where the user draws air through the filter when they inhale. This arrangement has a number of advantages over a conventional respirator:

- The constant filtered air supply significantly reduces the strain on the lungs (as there is no breathing resistance) extending working time
- Greater wearer comfort, as there is no mask pressing on the face
- Powered respirator suits and hoods can be worn by people with facial hair or glasses
- No requirement for fit-testing
- Air circulation in the hood increases comfort and reduces perspiration

In addition powered respirators also have advantages over air-line equipment in certain applications, due to their ability to work anywhere on site without the need for an air-line point, the greater freedom of movement offered and removal of the trip and snagging hazard of the air hose.

THE RESPIREX FLO-POD™

Dissatisfied with the complex set-up and testing requirements of powered respirators currently available, Respirex have spent a considerable amount of time and resource to develop an entirely new concept, the Flo-Pod™. Designed from the outset to be simple to use, the Flo-Pod has a single on/off button, with no need to calibrate or test the unit before using it - the Flo-Pod performs these tests itself, every time you turn it on.

This automatic testing ensures that a user never has to worry about performing flow checks or correctly calibrating the respirator - simply turn the Flo-Pod on, leave it for 90 seconds to conduct its start-up test routine, and if the light on the front turns green and the warning buzzer stops, it is safe to use.

Note: This section contains details of products with particulate filters, for details of the PRPS suit which incorporates twin gas and particulate filters, please see page 24.

FLO-POD™

The Flo-Pod™ is a simple to use powered air respirator for use against fine dust or particulate spray. Powered by a belt mounted rechargeable battery pack the Flo-Pod™ is designed to fit directly into the visor of compatible suits and hoods, allowing the user full operational freedom.

Designed from the outset to be comfortable and simple to use, the Flo-Pod™ requires little familiarisation prior to use and is lightweight and quiet in operation.

- Low energy, low-noise turbo, designed for optimum flow with maximum comfort
- Performs a full self-test on startup - no calibration required
- Four- or eight-hour rechargeable battery pack with fast charger
- Uses single P3 screw on filter
- Low-flow warning if airflow drops below the Manufacturer's Minimum Design Flow (MMDF) of 130 L/min
- Noise level at the ear 68dBA with a clean filter
- EMC tested for compatibility with other electrical equipment
- Intelligent fast charger prevents battery overcharging or damage (charging in up to three or six hours depending on battery model)
- Low battery warning

Highly effective particulate filtration

- P3 Particle filter traps solid and liquid particles, e.g. dusts, smoke, mists, micro-organisms and radioactive particles
- Uses microfibre 'paper' media without any electrostatic filtering method. Marked 'R' for "reusable" (EN 143/A1:2006)
- High capacity filter element removes even the smallest particles with >99.99 % efficiency
- Water-repellent (hydrophobic) filter element



Flo-Pod™ Starter Kits:

Starter kits contain the turbo unit, rechargeable battery pack, filter (x1), fast charger, belt and fixing spanner. Available with either a four or eight hour rechargeable battery and a UK (3 pin) or EU (2 pin) plug. Spare battery packs and replacement filters are also available.

FLO-POD™ HOOD

A lightweight PVC hood combining excellent particulate protection, all-round visibility and a high degree of user comfort.

- Manufactured in 150 µm PVC
- Balanced single sized design for performance and comfort
- Elasticated draw-string neck seal
- Adjustable chest strap with quick release buckle
- Low pressure balanced exhalation valves developed for maximum protection
- More comfortable than a facemask and filter
- Can be worn by users with glasses or facial hair
- Wide field of vision
- With the Flo-Pod™ turbo unit removed the hood can be washed and re-used

Certification:

EN 12941:1998 +A2:2008
Respiratory protective devices
APF 40 , NPF 500



FLO-POD™ SUIT

A range of full body suits incorporating a large visor for excellent all-round visibility.

- Manufactured in either lightweight 150 µm PVC, heavy-duty 300 µm PVC or blue Chemprotex™ 300 (for chemical protection)
- Available in Small, Medium, Large and X-Large sizes
- Elasticated draw-string neck seal
- Horizontal zip on chest, with cover-flap
- Low pressure, balanced exhalation valves, developed for maximum protection
- Range of cuff and foot options:
 1. Suit with elasticated arms and legs
 2. Suit with welded gloves and anti-slip foot
 3. Suit with welded gloves and sock foot

Certification:

EN 12941:1998 +A2:2008

Respiratory protective devices

APF 40, NPF 500



AIRPROTEX BS RESPIRATOR SUIT

Single use powered respirator suit developed for use in the nuclear industry to provide protection against particulate radioactive contamination.

- Breathing air is supplied to the suit via a reusable rear mounted Scott Proflow 2 SC120 Powered Air Purifying Respirator (120 ltrs/min) and Scott Promask full face mask
- Complete freedom of movement without umbilical connections
- Rear entry with double zip flap
- Plain cuffs for tape sealing to safety gloves or optional 'O'-ring cuff system
- Integral sock booties with outer legs providing sealed protection
- Lightweight totally transparent PVC visor for unobstructed vision
- Unique security collar supplied with suit to maintain connection between Scott PAPR and suit at all times
- Uses standard approved Scott equipment (no modifications are required to the Scott apparatus when used with the suit.)

Specifications:

Blower: Scott ProFlow 2 SC120

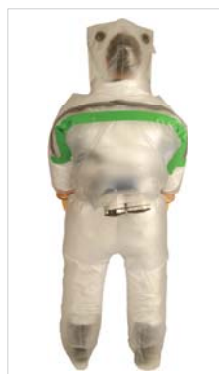
Facemask: Scott Promask

Filter: Scott PFR10 (x2)

Available in either anti-static 150 µm or 300 µm unsupported PVC. Anti-static properties are in accordance with EN1149-1:1996.

Options:

- Optional Welders version (300 µm PVC suits only)
- Optional Fall Arrest version (300 µm PVC suits only)



Certification:



EN1073-1:1998

Class 5 (50,000) Nominal Protection Factor (NPF)



THE BENEFITS OF REUSABLE WORKWEAR

Respirex only recommend limited life suits for applications where garments are used rarely and decontamination of a suit after use may not always be practicable. Where the chemical hazard is known and suits are used frequently, we recommend the use of reusable workwear for its greater mechanical protection, lower life-time cost and environmental benefits. Our workwear is designed to be laundered and re-used, providing a lower lifetime cost of ownership than the equivalent number of disposable garments, but there are a number of other advantages:

Reusable Garments	Disposable Garments
Greater initial purchase cost, but offer a long shelf and service life	Lower purchase cost, but single use only and must be safely disposed of after use.
Can be repaired to further extend their useful service life	Single use, not suitable for repair
Strong fabrics which are tear resistant and do not puncture easily	Fabrics which tear and puncture more easily
Rubber cuff and cone system or locking cuffs prevent any chemical ingress up the sleeve	Lower specification elasticated or taped sleeves with greater risk of chemical ingress
Glove changing quick and easy with rubber cuff and cones	Glove changing more hazardous with elasticated sleeve and more complicated with taped option
Heavy-duty Nylon zip, with wide internal and external flaps and Velcro closure externally	Lightweight Nylon zip, simple flap requiring taping for seal

Zip and Zip-flap

Respirex Suits and jackets include a durable heavy duty zip with a wide external flap secured with Velcro that covers the teeth of the zip. A second wide internal flap provides an additional layer of protection. This combination provides a liquid-tight seal without the inconvenience of having to tape the external flap shut.



Soft cuff and cone

This sleeve cuff features a rigid retaining ring with an internal O-ring seal and a soft rubber external seal. The glove is stretched over a cone and is then pushed firmly into the cuff from inside the sleeve, providing a liquid-tight seal.



REUSABLE ONE-PIECE SUITS

Siren Suit

Type 4 one-piece siren suit in Butyl, Neoprene or PVC, with a choice of collar. Nylon zip fitted from throat centre to right hand thigh, plain inner zip flap and single outer zip flap with Velcro closure. Available with a range of cuff and leg options (see below).

Collar Options: Mandarin, 2" collar, squared collar

Certification:



TYPE 4

EN14605:2005

Spray-Tight Chemical Protective Clothing

N.B. Certified to Type 3 when used with a Simplair Hood

Cowl Suit

Type 3 one-piece cowl suit in yellow Neoprene with hood, Nylon zip fitted from throat centre to right hand thigh, plain inner zip flap and single outer zip flap with Velcro closure. Available with a range of cuff and leg options (see below).

Hood Options: Elasticated or draw string

Certification:



TYPE 3*

EN14605:2005

Liquid-Tight Chemical Protective Clothing

* Requires taping at ankles and zip



Cowl Suit



Siren Suit

Cuff Options: Single elasticated, double elasticated, Soft cuffs and cones, locking cuff.

Leg Options: Plain leg with Velcro, elasticated inner with plain outer, double elasticated, detachable Hazmax boots.

REUSABLE JACKET

Type 4* jacket in Butyl, Neoprene or PVC and available with a choice of collar or hood. Nylon zip, fitted from throat centre to waist with plain inner zip flap and single outer zip flap with Velcro closure. For full protection, wear with an appropriate helmet with a Neoprene neck flap.

Collar Options: Mandarin, 2" collar, squared collar

Hood Options: Elasticated or draw string

Cuff Options: Single elasticated, double elasticated, Soft cuffs and cones, locking cuff.

REUSABLE TROUSERS

Type 4* bib-trousers in yellow Neoprene with red webbing braces and buckles at the front.

Leg Options: Plain leg with Velcro, elasticated inner with plain outer, double elasticated, detachable Hazmax boots.

*Note: Jacket and trousers individually meet Type PB[4], but meet Type 4 when worn in combination

Certification:



TYPE 4

EN14605:2005

Spray-Tight Chemical Protective Clothing



NECK PROTECTION

Neoprene neck flaps and wraps secure to a safety helmet with Velcro and provide splash protection for a wearers neck and prevent liquid spray entering a suit or jacket collar.

Neck flaps protect the rear and sides of the head, neck wraps provide full head and face protection in conjunction with a suitable helmet visor.



Neck flap



Neck wrap

ANTI-SPLASH HOOD

Reusable anti-splash hoods are available in a range of materials to provide the best possible protection against numerous potentially hazardous situations

- Designed for short duration work
- Highly chemically resistant visor
- Air vents at the front and rear of the hood
- Large front and rear capes providing protection to the chest area, secured by adjustable straps under the wearer's arms
- Hanging point bonded to the top of the hood to allow proper storage

Important Notes

- Anti-Splash Hoods must not be worn in confined areas where there may be fumes or vapours, or the oxygen content in the air drops below 21%
- Strenuous work that increases the wearer's breathing rate should not be undertaken whilst wearing the hood



LIGHTWEIGHT COWL SUIT

Lightweight, Type 3 liquid-tight, limited life cowl suit, designed for use with a with a face mask and filter or appropriate face and head protection.

- One-piece construction in blue Chemprotex™ 300
- Integral elasticated hood
- Nylon zip, fitted vertically from groin to neck with twin flaps and press stud closures to seal
- Elasticated cuffs and legs

Certification:



TYPE 3*
EN14605:2005
Liquid-Tight Chemical
Protective Clothing



TYPE 4*
EN14605:2005
Spray-Tight Chemical
Protective Clothing



TYPE 5*
EN13982-1
Particulate Protective
Clothing



TYPE 6*
EN13034
Limited Spray-Tight
Chemical Protective
Clothing



EN 14126:2003
Protective Clothing
Against Infective
Agents



EN 1149-5:2008
Antistatic Protective
Clothing

* Requires taping at wrists, ankles and zip



WHERE TO USE LIMITED LIFE WORKWEAR

Limited life workwear is useful where access to decontamination facilities or equipment is limited, where the chemical hazard is unknown and or where suits are used infrequently.

The Respirex Lightweight Cowl Suit can be stored for up to ten years in its pack and is ideal for use in industries such as transport and shipping, as part of an emergency clean up kit for spills



BODY BAG

A gas-tight body bag, designed to contain chemically contaminated mortalities and body parts after a Chemical, Biological, Radiological or Nuclear (CBRN) incident.

- Manufactured with a high performance barrier fabric shell, which provides excellent protection against a broad range of chemicals
- Provides a physical barrier to particulate, liquid, vapour and gas materials with a minimum breakthrough of 48 hours
- Lightweight material for ease of storing, transporting and handling
- Durable material with an abrasion resistant reinforced PVC base
- Enhanced CBRN filter (3M JFR-85) allowing gasses produced by the body as part of the decomposition process to pass out of the bag
- Shut off valve over CBRN filter exhausts
- Sturdy carrying straps
- Absorbent pads in the bottom of the bag capable of holding more than five litres of fluid
- Heavy duty gas-tight zip around three sides of the bag for ease of access, fitted with Viton ring on slider for ease of use when wearing CPPE gloves
- Disposal by means of either cremation or burial
- Clear hazard warning signs identifying the type of CBRN hazard within the bag
- Two waterproof A4 pouches for identification paperwork Clear viewing window to allow relatives to view the deceased



PRPS SUIT

The Powered Respirator Protective Suit (PRPS) is a one-piece gas-tight chemical protective suit for use by emergency response personnel after a CBRN incident. The suit was developed in conjunction with the UK National Health Service and is now widely used in the UK and overseas.

- Manufactured from Tychem® TK, a high performance, lightweight, multi-layer chemical barrier material
- Respiratory system comprising a battery powered 3M Jupiter™ air filter unit fitted with a visual display unit mounted inside the suit at the base of the visor, and audible alarm
- Battery pack provides 1 hour operational use, plus 15 minutes for decontamination
- Twin JRF-85 gas & particle filters to provide protection against chemical and biological warfare agents
- Semi-rigid laminated visor
- Heavy duty gas-tight zip fitted across the chest enclosed by double external storm flaps with Velcro closure
- Dual glove system comprising Neoprene outer gloves bonded to inner Silver Shield laminate gloves
- Gas-tight locking cuff mechanism
- Highly chemically resistant Hazmax™ safety boots permanently attached to suit
- Supplied with lightweight disposable Hazbag to quarantine the suit after use
- Available in a range of sizes (see over)



Features and Benefits

- Powered respirator and loose-fitting hood provide cooling air over the head and through the suit, making the wearer more comfortable and better able to focus on tasks
- The loose-fitting hood design provides high protection without the need for a tight-fitting face piece, which means:
 - Many wearers feel less constricted
 - Can be used by wearers with facial hair
 - Training needs are reduced
 - Face-fit testing is not required
- The clear wide-view visor provides reassurance to casualties and victims by allowing easier, friendly 'whole-face' communication
- Compared to a gas-tight suit with SCBA, the PRPS suit and respirator is significantly lighter and more comfortable, with easier breathing and less equipment in body contact
- The lower weight and increased user comfort results in a lower physiological load than a conventional gas-tight suit
- Improved operational duration over gas-tight SCBA suits
- Up to six times the resource efficiency compared with gas-tight SCBA suits thanks to the lower physiological loading and increased duration
- Uncontaminated or 'decontamination-guaranteed' suits can be re-used following gas-tight re-test and re-certification



Options:

- Reusable PVC training suit - PRPS(T)
- Primary (single-use) lithium battery for Immediate operational use, and rechargeable battery for training use
- Optional rehydration system and hard-hat
- Choice of lightweight dexterity gloves for medical tasks or heavy-duty gloves for increased physical protection

CASUALTY TRANSPORTATION BAG

The casualty bag is designed for transporting chemically contaminated and seriously injured patients.

- Designed to prevent chemical contamination of staff, vehicles and facilities from casualties in transit or at medical facilities prior to decontamination or treatment
- Manufactured from blue Chemprotex™ 300 material, a high performance barrier material which is extremely flexible
- Provides outstanding protection against hazardous dusts and powders, organic and inorganic acids and bases, blood and blood borne pathogens, and many chemical mixtures in aerosol or spray form
- Full length Nylon zipper
- Elasticated hood
- Ultrasonically welded or sewn and taped seams
- Facemask supplied separately

Important Note: Suitable chemical protective clothing should be worn by Paramedics, Ambulance and A&E Department personnel when handling patients that need to be transported in the bag



MODESTY PACK, PRE-DECONTAMINATION

Allows contaminated casualties to change from their own garments in as dignified a manner as possible prior to decontamination in a drench shower.

Pack Contains:

- Orange zip-up holdall with instructions
- Pair thick grey socks
- Pair black rubber non-slip footwear
- High-Vis thermal orange hooded cape
- Pair disposable blue gloves
- Disposable 'fish' knife
- Disposable facemask
- Personal cleansing face wipe
- Numbered small clear PVC bag with tie for valuables
- Numbered large clear PVC bag with tie for disposed garments



MODESTY PACK, POST-DECONTAMINATION

For use after casualties have set aside their own garments and have been decontaminated in a drench shower.

Pack Contains:

- Orange zip-up holdall with instructions
- Pair thick grey socks
- Pair black rubber non-slip footwear
- Pair of disposable underwear
- Disposable green blouse and trousers
- Disposable white towel
- Sanitary towel
- Olive green waterproof trousers and jacket



Protective Footwear



The Workmaster™ range of boots and overboots are made in the UK at our state of the art automated boot factory. The injection moulding manufacturing process guarantees a seamless, leak-free construction and all our boots are REACH compliant. Boots and insoles are machine washable at up to 40°C and have a shelf-life in excess of 10 years.

Over 30% of industrial accidents result from slips, trips and falls - as Workmaster boots are used in an environment where there are liquids present, a slip resistant sole is crucial, which is why we fit a high-performance vulcanised rubber sole to our boots. This provides a number of important benefits:

- Slip resistance is twice that required by EN 13287 SRA and SATRA TM144 standards
- Grip is 30% better than with a conventional safety boot sole
- Wear resistance is two to three times that of conventional soles
- The sole is resistant to fuel and oil
- Greater cut resistance than conventional soles
- Resistance to hot contact for 60 seconds at 300°C
- Cold insulation

WORKMASTER BOOT FEATURES



1. 200 Joule steel toe cap
2. Stainless steel midsole (some models only)
3. Vulcanised rubber sole
4. Energy absorbing tunnel system in heel
5. Adjustable height
6. Kick-off lug

HAZMAX™ BOOT

A chemically-protective anti-static boot with an integral steel toe cap and vulcanized rubber sole for superior slip resistance.

- Green Hazmax chemically-resistant compound shaft certified to EN 13832-3
- Conforms to EN 943-1 (chemical protective clothing) and certified to this standard as part of an appropriate Respirax gas-tight suit
- Meets the requirements of NFPA 1991 (chemical vapour protection)
- Stainless steel, penetration resistant mid-sole
- Extra shin protection and ankle guard
- Knitted Nylon lining
- Comfort insole (removable and machine washable)
- Fuel and oil resistant
- CE marked on the shaft with date and year of manufacture

See page 40 for chemical permeation data.

Certification:

Chemical Protective Footwear	EN 13832 pt 3
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20345: 2011

S5 **CI** **HRO** **SRA**

EN 13832
Chemical Protection



CHEMICAL OVERBOOT

A chemically-protective anti-static overboot with a vulcanized rubber sole for superior slip resistance.

- Ingenious rear entry design ensures the boot is quick and easy to fit and remove
- Ideal for personnel who have to continually enter and exit hazardous areas
- Green chemically resistant Hazmax compound shaft certified to EN 13832-3
- Conforms to EN 943-1 (chemical protective clothing)
- Meets the requirements of NFPA 1991 (chemical vapour protection)
- Seamless construction
- Kick-off lug
- CE marked on the shaft with date and year of manufacture

See page 40 for chemical permeation data.

Certification:

Chemical Protective Footwear	EN 13832 pt 3
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20347

A **FO** **HRO** **SRA**

EN 13832
Chemical Protection



DIELECTRIC BOOT

17kV Protection
Max. Working Voltage



An electrically insulating dielectric boot with an integral steel toe cap and vulcanized rubber sole for superior slip resistance. The Workmaster™ Dielectric boot provides protection of up to **20kV** over the complete boot for more than eight hours, and **35kV** over the sole for three minutes.

- Yellow dielectric compound shaft
- Extra shin protection and ankle guard
- Non-wicking knitted Nylon lining
- Comfort insole (removable and machine washable)
- Blue vulcanized rubber sole

Electrical Protection:

Complete boot: 20 kV..... 8 hours, no damage
5 kV..... Less than 5mA Leakage current
Sole: 35 kV..... 3 minutes, no damage

Certification:

Electrically Insulating Footwear	EN 50321 Class 0
Dielectric Footwear	ASTM F1117
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20345:2011

SB E CI HRO SRA FO



DIELECTRIC OVERBOOT

17kV Protection
Max. Working Voltage



An electrically insulating dielectric overboot approved to current European standards with a vulcanized rubber sole for superior slip resistance. The Workmaster™ Dielectric overboot provides protection of up to **20kV** over the complete boot for three minutes.

- Ingenious rear entry design ensures the boot is quick and easy to fit and remove
- Ideal for personnel who need to frequently enter and exit hazardous areas
- Yellow dielectric compound shaft
- Blue vulcanized rubber sole
- Seamless construction
- Kick-off lug

Electrical Protection:

Complete boot: 20 kV..... 3 Minutes, no damage
5 kV..... Less than 5mA Leakage current

Certification:

Electrically Insulating Footwear	EN 50321 Class 0
Dielectric Footwear	ASTM F1117
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20347

I FO HRO SRA



DIGGER BOOTS

Designed to resist cutting and wear of the sole through repetitive use with spades and forks, the Workmaster Digger boot features an integral steel toe cap and midsole together with a vulcanized rubber sole for superior slip resistance.

- Comfortable, durable and lightweight
- 200 Joule epoxy coated steel toe cap
- Stainless steel penetration resistant midsole
- Moisture absorbing insole (removable and machine washable)
- Greater cut resistance than conventional soles - lasts between two and four times longer than PVC boots when digging

Options:

- Antistatic version*
- Comfort insole

Certification:

Personal Protective Equipment PPE DIR 89/686/EEC
Safety Footwear EN ISO 20345:2011

SB **FO** **CI** **HRO** **SRA** **E** **P**

*Antistatic version marked S5, CI, HRO, SRA



MINER BOOTS

A high performance anti-static safety boot with excellent cut resistance and a hard wearing vulcanised rubber sole designed to provide long operational life in surface and underground mines.

- Cut resistant upper to EN388 Class 4 (requirement 2.5)
- Puncture resistance to EN 388: 2003 level 1 (39.6 N)
- Chemically resistant brown compound shaft
- Superb low temperature flexibility down to -40°C
- Stainless steel, penetration resistant mid-sole
- Fuel and oil resistant

See page 39 for chemical permeation data.

Certification:

Chemical Protective Footwear EN 13832 pt 3
Personal Protective Equipment PPE DIR 89/686/EEC
Safety Footwear EN ISO 20345:2011

S5 **CI** **HRO** **SRA** **CR**



SUPERPOLY BOOTS

Designed to be resistant to the chemicals used in the food-processing industry and to maintain its flexibility in temperatures as low as -40°C, the Superpoly boot features a cut resistant construction (upper and sole) an integral steel toe cap and vulcanized rubber sole for superior wear and slip resistance.

- White chemically resistant compound shaft (see page 39 for chemical permeation data)
- Superb low temperature flexibility down to -40°C
- Cold insulation to EN ISO 20345
- Cut resistant shaft to EN388 Class 4 (requirement 2.5)
- Excellent resistance to oil and animal fats
- 200 Joule epoxy coated steel toe cap
- Comfort insole (removable and machine washable)

Certification:

Chemical Protective Footwear	EN 13832 pt 3
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20345:2011

SB CI FO HRO SRA CR E



SUPERPOLY D BOOTS

Designed for abattoir use the Superpoly D combines all the features of the standard Superpoly boot with electrical protection to EN 50321 to protect workers in areas where electrical stunning equipment is used.

Certification:

Chemical Protective Footwear	EN 13832 pt 3
Electrically Insulating Footwear	EN 50321 Class 0
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20345:2011

SB CI FO HRO SRA CR E



SUPERPOLY OVERBOOTS

Designed to be resistant to the chemicals used in the food processing industry, the Superpoly overboot features a vulcanized rubber sole for superior slip resistance.

- Ingenious rear entry design ensures the boot is quick and easy to fit and remove
- Ideal for personnel who have to continually enter and exit processing areas
- White chemically resistant compound shaft (see page 39)
- Cut resistance
- Excellent resistance to oil and animal fats
- Seamless construction
- Kick off lug
- Cold insulation to EN ISO 20345
- Superb low temperature flexibility down to -40°C

Certification:

Chemical Protective Footwear	EN 13832 pt 3
Personal Protective Equipment	PPE DIR 89/686/EEC
Safety Footwear	EN ISO 20347

A FO HRO SRA



POLYFLEX OVERBOOTS

A waterproof overboot with a vulcanized rubber sole for superior slip resistance the Polyflex overboot is designed for ease and speed of fitting and removal.

- Ingenious rear entry design ensures the boot is quick and easy to fit and remove
- Ideal for personnel who continually move back and forth from clean, dry indoor areas to outdoors
- Excellent cut resistance
- Seamless construction
- Kick off lug

Certification:

Personal Protective Equipment
Safety Footwear

PPE DIR 89/686/EEC
EN ISO 20347

A **FO** **HRO** **SRA**



WORKMASTER™ SIZING GUIDE

Boots

UK	3	4	5	6	7	8	9	10	11	12	13	14	15
EU	35	36	37	39	41	42	43	44	45	46	47	49	50
US	4	5	6	7	8	9	10	11	12	13	14	15	16

Overboots

	Medium	Large	Extra-Large
UK	6 - 8	9 - 11	12 - 14
EU	39 - 42	43 - 45	46 - 49
US	7 - 9	10 - 12	13 - 15

EN ISO 20345 MARKINGS

HRO	Outsole - Resistance to hot contact
SRA	Slip resistance on ceramic tile floor with NaLS
FO	Outsole - Resistance to fuel oil
CI	Cold insulation of sole complex
E	Energy absorption of seat (heel) region
P	Penetration resistance
CR	Cut resistance
A	Antistatic

SB Meets the basic requirements of safety footwear in EN20345:2011

S5 As SB, but with the following additional requirements: Closed seat region, Antistatic properties, Energy absorption of seat region, Resistance to fuel oil, Penetration resistance, Cleated outsole.

OVERBOOT DESIGN

Workmaster™ overboots feature a unique rear entry design, that is far quicker and easier to use than conventional overboots.

The large opening of the rear entry boot makes fitting and removing the boot simple. Once you have inserted your foot, pull the fixing strap on the back of the boot and wrap this round the side to the button at the front. Hook the fastening strap over the button and the boot is secure.



GAS-TIGHT SUIT TEST UNIT

Electrically operated testing unit that automatically inflates a suit from a compressed air supply (max 50psi) and performs a pressure test giving a digital result display.

As an option the Automatic Gas-tight Verification Unit is now available with an in-built mini compressor which allows suits to be inflated without the need of an external compressed air supply.

- Designed specifically for determining the leak tightness of gas-tight chemical protection suits (internal pressure test) to the European standard EN464:1994 as required by clause 6.3 of EN943-1:2002.
- Simple to operate with minimal training required
- Reduction in labour costs
- Cannot damage the suit by over inflation
- Avoids spillage of liquid used by 'manometer' style test rigs
- Single connection to the suit
- CE marked
- Available in 110V or 230V versions
- Compliant with the European low voltage and EMC directives
- Optional data collection software

The test cycle can be carried out by the equipment without an operator being present and with the display frozen the operator can return at any time to check on the status of the suit.



Calibration

All test units are individually serial numbered and calibrated using equipment that has been tested and certified by NAMAS (National Measurement & Accreditation Service) prior to leaving the factory. Renewal of the calibration certificate is required every 12 months.

PORTABLE AIR-FILTER CABINET

A three stage filter set, designed to ensure that the air-supply is clean and breathable to EN12021:1999.

- Three stage filtration
 1. Grade AO - High efficiency general purpose protection (1 micron)
 2. Grade AA - High efficiency oil removal filtration (0.01 micron)
 3. Grade ACS - Activated carbon filtration for the removal of oil vapour and hydrocarbon odours
- Adjustable pressure regulator with pressure gauge
- Internal low pressure alarm with external whistle
- Cabinet manufactured in durable, lightweight Polyethylene
- Large bore pipe work and regulator allow maximum airflow
- Weatherproof cabinet with carrying handle
- Air can be supplied from most suitably rated compressors
- Customers choice of couplings



AUTO-REWIND HOSE REEL

Designed to provide a safe, convenient and efficient way to deploy air hose where required. Constructed in high impact UV stabilized polypropylene for durability, the hose reel can be installed indoors or out.

- Average weight of just 10 kg (22 lb) including hose
- Reels are supplied with hose ready for easy installation
- Mounting bracket included for wall or overhead positioning which allows the reel to swing through up to 270° or to be fixed centrally
- Optional bench or floor mount also available
- Brackets feature a padlock facility to secure the reels in place
- Two-position switch provides latching of hose at 0.5m intervals or a free run of hose for maximum convenience.



RESPIREX REINFORCED AIR HOSES

A range of compressed air hoses to EN 270, available in either yellow reinforced PVC or green heavy-duty reinforced PVC.

- Terminated at each end in with customers choice of connector
- Bore size 9.5mm (3/8")
- Outside diameter 16mm for yellow hose, 21mm for green hose
- Working pressure of 10 Bar
- Tested in accordance with EN14594

Common sizes shown opposite, contact Respirex for full range of sizes available.



AIR-LINE SWIVEL

Allows long lengths of airline hose to swivel thus avoiding coiling and snagging. Suitable for use with all Respirex hose lines. Tested in accordance with EN270:1994. Includes Viton 'O'-rings and seals stainless steel hose tails and ferrules.

Can be specified as an addition to any standard hose length and will be fitted 600mm from one end of the hose.



KOOLVEST™

Provides comfortable cooling for users of unventilated chemical protective clothing.

- Manufactured in Proban® flame retardant material
- Absorbs heat generated by the wearer and maintains a comfortable cooling level of 65°F/18°C
- Can be worn directly against the skin
- One size fits all vest with adjustable straps.
- Four internal pockets for the pre-charged KoolPacks
- KoolPacks are simple to recharge in a fridge, portable cooler or even iced water



CAN CARRIERS

Designed to transport sealed canisters of radioactive substances safely. Manufactured in a mechanically strong material with internal padded layer.

- Manufactured in a range of sizes
- Short handles for ease of carrying
- Multiple zips for ease of input and removal of canisters
- Extra padding in the carrier to prevent damage to the sealed cans should an incident occur during the transportation



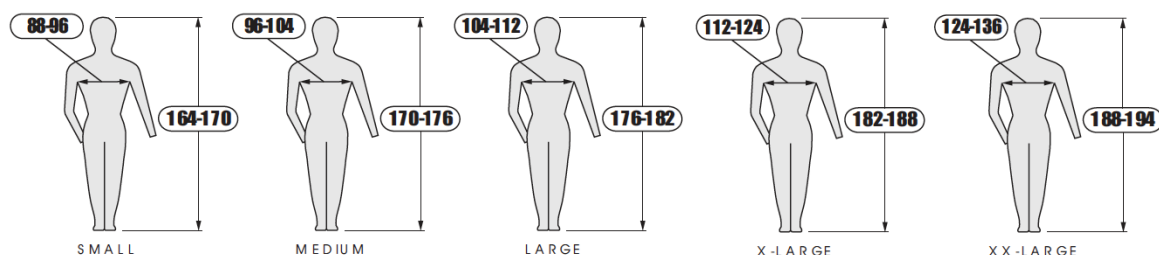
MSM BAG

The Master Slave Manipulator (MSM) bag has been developed to transport contaminated robotic arms for cleaning and maintenance.

- Manufactured in durable PVC
- Gas-tight zip



SIZING GUIDE FOR SUITS



CLASSIFICATION OF SUITS BY TYPE

	Standard	Category	Product	
Type 1	EN 943-1	Gas-Tight Chemical Suits	GTB & GTVB Suit Limited Life Gas-Tight Suit GTL, GTIM, GTA	
Type 2	EN 943-1	Non-Gas-Tight Chemical Suits	Simplair Suits Airprotex AF (Chemprotex™ 300)	
Type 3	EN 14605	Liquid-Tight Chemical Protective Clothing	Ltd. Life SC1 Lightweight Cowl Suit	Reusable SC1 & SC4
Type 4	EN 14605	Spray-Tight Chemical Protective Clothing		Reusable Jacket, Trousers & One-Piece
Type 5	EN 13982-1	Particulate Chemical Protective Clothing		
Type 6	EN 13034	Limited Spray-Tight Chemical Protective Clothing		

MATERIAL TESTING









Respirex thoroughly test all of the materials that we use in our garments and we have our own independent UKAS accredited laboratory for chemical permeation testing and for testing the physical properties of materials.

This allows us to regularly re-test our fabrics and seams to ensure quality. We can also advise customers on fabric selection for their particular chemical hazard and even conduct specific chemical testing if required.

The laboratory has a broad range of commercial customers outside Respirex and is able to offer confidential testing services for chemical permeation, abrasion resistance, flex cracking resistance, puncture resistance, tensile strength, seam tensile strength and trapezoidal tear resistance.

MECHANICAL PROPERTIES OF MATERIALS

		VBV	Viton Laminate	VBV	Tychem® Tk	Chemprotex™ 400	Chemprotex™ 300	Butyl	Neoprene	PVC C2	300µm PVC	150µm PVC
Abrasion Resistance	EN 530 Method 2											
Flex Cracking Resistance	EN ISO 7854 Method B											
Tear Resistance	EN ISO 9073-4											
Tensile Strength	EN ISO 13934-1											
Puncture Resistance	EN 863											
Resistance to liquid permeation	EN ISO 6529 or EN374-3											
Resistance to Ignition	EN 13274-4 Method 3											
Seam Permeation Resistance	EN ISO 6529											
Seam Strength	EN ISO 13935-2											

	Abrasion	Flex Cracking	Tear	Strength	Puncture	Permeation	Ignition*	Seam Strength	Seam Permeation
 Class 6 (Best)	> 2,000	> 100,000	> 150 N	> 1,000 N	> 250 N	> 480 min	Pass	> 500 N	> 480 min
 Class 5	> 1,500	> 40,000	> 100 N	> 500 N	> 150 N	> 240 min	-	> 300 N	> 240 min
 Class 4	> 1,000	> 15,000	> 60 N	> 250 N	> 100 N	> 120 min	-	> 125 N	> 120 min
 Class 3	> 500	> 5,000	> 40 N	> 100 N	> 50 N	> 60 min	-	> 75 N	> 60 min
 Class 2	> 100	> 2,500	> 20 N	> 60 N	> 10 N	> 30 min	-	> 50 N	> 30 min
 Class 1	> 10	> 1,000	> 10 N	> 30 N	> 5 N	> 10 min	Fail	>30 N	> 10 min

* Resistance to Ignition is given purely as pass or fail (not as a class)

White boxes indicate no test results available at time of publication.

CHEMICAL PERMEATION

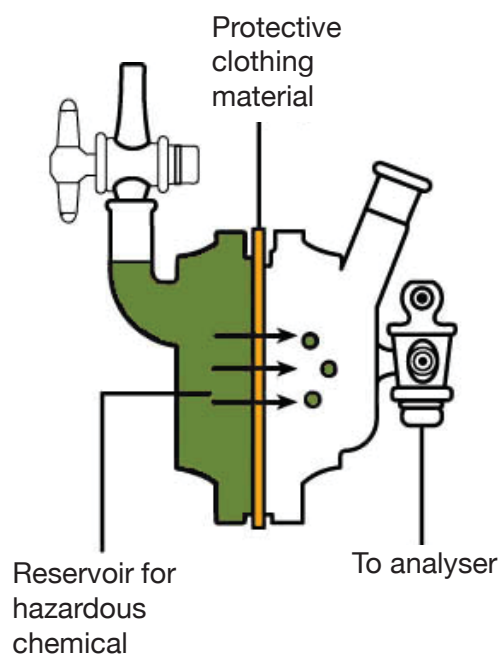
Permeation is a process by which a chemical passes through a polymer by means of molecular diffusion. This occurs without there being any physical holes in the fabric.

How is permeation measured?

Permeation is measured by exposing the outer surface of a sample of fabric to the chemical against which it is being tested. The exposure is total and constant, and emulates total immersion conditions. The inner surface of the fabric is monitored analytically to determine the amount of chemical (if any) passing through the fabric.

What is the “breakthrough time”

The breakthrough time is the elapsed time between first exposure of the fabric to chemical and the rate of permeation reaching a target value. The target permeation rate for tests carried out according to BS EN ISO 6529 or BS EN 374-3 is one microgram of chemical passing through each square centimetre of fabric every minute. When measured according to a standard method, the breakthrough time is a value by which the performance of different fabrics can be compared.



CHEMICAL PERMEATION DATA FOR MATERIALS

Chemical	CAS Number	Viton Laminate	VBV	VBP	Tychem® TK	Chemprotex™ 400	Butyl	Neoprene	PVC C2
acetaldehyde	75-07-0								
acetic acid, 10%	64-19-7								
acetic acid, glacial	64-19-7								
acetic anhydride	108-24-7								
acetone	67-64-1								
acetonitrile	75-05-8								
acetophenone	98-86-2								
acrylic acid	79-10-7								
acrylonitrile	107-13-1								
allyl chloride	107-05-01								
ammonia gas	7664-41-7								
ammonia solution, 35%	1336-21-6								
ammonium nitrate sat.	6484-52-2								
amyl acetate	628-63-7								
aniline	62-53-3								
aviation fuel	n/a								
benzene	71-43-2								
benzoyl chloride	98-88-4								
benzyl alcohol	100-51-6								
brake fluid Mobil DTE 25	n/a								
bromine liquid	7726-95-6								
butadiene, 1,3-	106-99-0								
butanone (MEK)	78-93-3								
carbon disulphide	75-15-0								
chlorine gas	7782-50-5								
chlorobenzene	108-90-7								
chloroform	67-66-3								
chloromethane gas	74-87-3								
chlorosulphonic acid	7790-94-5								
cyclohexanone	108-94-1								
dibromomethane	74-95-3								
dichloromethane	75-09-2								
diethylamine	109-89-7								
diethylsulphate	64-67-5								
dimethylacetamide, N,N-	127-19-5								
dimethylformamide	68-12-2								
dimethyl sulphate	77-78-1								
epichlorohydrin	106-89-8								
ethanol	64-17-5								
ethyl acetate	141-78-6								
ethyl benzene	100-41-4								
ethylene oxide	75-21-8								
formaldehyde, 37% sol	50-00-0								
formic acid, 30% - 90%	64-18-6								
furfural	98-01-1								
heptane	142-82-5								
hexamethylene diisocyanate	822-06-0								
hexane	110-54-3								
hydrazine hydrate	7803-57-8								
hydrochloric acid, 36%	7647-01-0								
hydrofluoric acid 48%	7664-39-3								
hydrofluoric acid 73%	7664-39-3								
hydrogen chloride gas	7647-01-0								
hydrogen fluoride gas	7664-39-3								
hydrogen fluoride liquid	7664-39-3								
hydrogen peroxide, 27.5%	7722-84-1								
lactic acid, 40%	50-21-5								
methacrylic acid	79-41-4								

Chemical	CAS Number	Viton Laminate	VBV	VBP	Tychem® TK	Chemprotex™ 400	Butyl	Neoprene	PVC C2
methane sulphonyl chloride	124-63-0								
methanol	67-56-1								
methyl acrylate	96-33-3								
methyl methacrylate	80-62-6								
methyl vinyl ketone	78-94-4								
nitric acid, 10%	7697-37-2								
nitric acid, 60% - 70%	7697-37-2								
nitric acid, fuming	7697-37-2								
nitrobenzene	98-95-3								
oleum, 30%	8014-95-7								
oxalic acid, saturated	144-62-7								
petrol - unleaded	8006-61-9								
phenol, solid	108-95-2								
phenol, 85%	108-95-2								
phenol, liquid -41°C	108-95-2								
phosgene	75-44-5								
phosphoric acid, 20%	7664-38-2								
phosphoric acid, 85%	7664-38-2								
phosphorus trichloride	7719-12-2								
potassium hydroxide, 40%	1310-58-3								
propan-2-ol	67-63-0								
propylene oxide	75-56-9								
pyridine	110-86-1								
sodium hydroxide, 40%	1310-73-2								
sodium hypochlorite, 13%	7681-52-9								
styrene	100-42-5								
sulphur dioxide	7446-09-5								
sulphuric acid 10% - 50%	7664-93-9								
sulphuric acid 96%	7664-93-9								
tetrachloroethylene	127-18-4								
tetrahydrofuran	109-99-9								
thionyl chloride	7719-09-7								
toluene	108-88-3								
toluene-2,4-diisocyanate	584-84-9								
toluidine, o-	95-53-4								
trichlorobenzene, 1,2,4-	120-82-1								
trichloroethylene	79-01-06								
triethylamine	121-44-8								
trifluoroacetic acid	76-05-1								
vinyl acetate	108-05-4								
xylene	1330-20-7								

Breakthrough Times:

	Recommended; breakthrough times over 480 minutes
	Recommended; breakthrough times 241 to 480 minutes
	Use only with caution; breakthrough times 61 to 240 minutes
	Very light splash protection only; breakthrough times 31 to 60 minutes
	Not recommended; breakthrough times less than 30 minutes
	Not tested

Chemicals in bold text are the 15 standard test chemicals defined in EN943-2:2002

Tychem® TK Permeation courtesy of DuPont, for further details on this material visit www.dupont.com.

CHEMPROTEX™ 300 MATERIAL

Chemprotex™ 300 is a high performance chemical barrier material manufactured by laminating spunbonded blue polythene to a barrier film which is coated by a polymer. It is the combination of film and polymer which provides a particle-tight material with good resistance to penetration and permeation by many liquids and gases. It is designed to be used in the manufacture of single use Type 2, (non-gas-tight) and type 3 and 4 chemical and biological protective clothing for both the emergency services and industrial end-users.

Primary benefits of Chemprotex™ 300

- Excellent material strength and high tear resistance
- Supple and light
- Large permeation data base for a wide range of chemicals
- Low noise (non-rustle) material
- Advanced seam technology
- Anti-static properties

Chemical warfare agent protection

Chemprotex™ 300 has been tested for resistance to permeation by chemical warfare agents in accordance with FINABEL O.7.C methods at the respected TNO laboratories. Both the material and seams were found to offer an extremely high level of protection against the following agents:

- Mustard agent (HD)
- Sarin (GB)
- Soman (GD)
- VX

Resistance to penetration by infective agents

The material has passed the requirements of EN14126:2003 for protective clothing against infective agents. It is therefore suitable to provide protection against blood, blood-borne pathogens, body fluids, biologically contaminated aerosols and both wet and dry microbial penetration.

CHEMICAL PERMEATION DATA FOR CHEMPROTEX™ 300

Chemical Name	State	CAS Number	Actual (min.)	ASTM (min.)	EN374-3 (min.)	EN Class	SSPR $\mu\text{g}/(\text{min}.\text{cm}^2)$	MDPR $\mu\text{g}/(\text{min}.\text{cm}^2)$	Observation
acetaldehyde	L	75-07-0	>480	>480	>480	6	<0.05	0.05	No degradation
acetic acid (30%)	L	64-19-7	>480	>480	>480	6	<0.001	0.001	No degradation
acetic acid (glacial)	L	64-19-7	>480	>480	>480	6	<0.001	0.001	No degradation
acetic anhydride	L	108-24-7	>480	>480	>480	6	<0.001	0.001	No degradation
acetone	L	67-64-1	>480	>480	>480	6	<0.02	0.02	No degradation
acetonitrile	L	64047	>480	>480	>480	6	<0.05	0.05	No degradation
acetophenone	L	98-86-2	>480	>480	>480	6	<0.05	0.05	No degradation
acrylamide (50%)	L	65532	>480	>480	>480	6	<0.10	0.10	No degradation
acrylic acid	L	65660	>480	>480	>480	6	<0.005	0.005	Discolouration
acrylonitrile	L	107-13-1	>480	>480	>480	6	<0.05	0.05	No degradation
allyl alcohol	L	107-18-6	>480	>480	>480	6	<0.05	0.05	No degradation
ammonia	G	7664-41-7	32	49	>480	6	0.17	0.005	No degradation
ammonium hydroxide (35% NH ₃ in water)	L	1336-21-6	>480	>480	>480	6	<0.001	0.001	No degradation
amyl acetate-n	L	628-63-7	>480	>480	>480	6	<0.02	0.02	No degradation
aniline	L	62-53-3	>480	>480	>480	6	<0.05	0.05	No degradation
aviation fuel	L	-	>480	>480	>480	6	<0.05	0.05	No degradation
benzene	L	71-43-2	28	35	58	2	3.0	0.05	No degradation
benzonitrile	L	100-47-0	>480	>480	>480	6	<0.05	0.05	No degradation
benzoyl chloride	L	98-88-4	>480	>480	>480	6	<0.05	0.05	No degradation
benzyl alcohol	L	100-51-6	>480	>480	>480	6	<0.05	0.05	No degradation
benzyl chloride	L	100-44-7	>480	>480	>480	6	<0.05	0.05	No degradation
bromine	L	7726-95-6	imm	7	8	0	high	0.001	Discolouration
butadiene 1,3	G	106-99-0	>480	>480	>480	6	<0.02	0.02	No degradation
butane	G	106-97-8	>480	>480	>480	6	<0.05	0.05	No degradation
butanol n-	L	71-36-3	>480	>480	>480	6	<0.05	0.05	No degradation
Butyl aldehyde	L	123-72-8	>480	>480	>480	6	<0.05	0.05	No degradation
Butyl ether n-	L	142-96-1	>480	>480	>480	6	<0.05	0.05	No degradation
carbon disulphide	L	75-15-0	>480	>480	>480	6	<0.05	0.05	No degradation
chlorine	G	7782-50-5	>480	>480	>480	6	<0.001	0.001	No degradation
chloroacetic acid (68%)	L	65692	>480	>480	>480	6	<0.001	0.001	No degradation
chlorobenzene	L	108-90-7	120	145	291	5	1.5 (max)	0.05	No degradation
chloroethanol 2-	L	107-07-3	>480	>480	>480	6	<0.02	0.02	No degradation
chloroform	L	67-66-3	3	6	9	0	22.5	0.01	No degradation
cresol m-	L	108-39-4	>480	>480	>480	6	<0.05	0.05	No degradation
cyclohexane	L	110-82-7	>480	>480	>480	6	<0.05	0.05	No degradation
cyclohexanone	L	108-94-1	7	13	>480	6	0.23	0.05	No degradation
dichlorodimethylsilane	L	75-78-5	>480	>480	>480	6	<0.001	0.001	Slight blistering
dichloromethane	L	64164	>480	>480	>480	6	<0.05	0.05	No degradation
diesel fuel	L	-	>480	>480	>480	6	<0.10	0.10	No degradation

CHEMICAL PERMEATION DATA FOR CHEMPROTEX™ 300

Chemical Name	State	CAS Number	Actual (min.)	ASTM (min.)	EN374-3 (min.)	EN Class	SSPR $\mu\text{g}/(\text{min.cm}^2)$	MDPR $\mu\text{g}/(\text{min.cm}^2)$	Observation
diethylamine	L	109-89-7	7	8	11	1	2.1	0.05	Slight swelling
di(2-ethylhexyl)phthalate	L	117-81-7	nt	nt	>480	6	nm	1.0	No degradation
dimethylacetamide N,N	L	127-19-5	223	>480	>480	6	0.08	0.05	No degradation
dimethylformamide N,N	L	61699	>480	>480	>480	6	<0.01	0.01	No degradation
dimethyl sulphate	L	77-78-1	>480	>480	>480	6	<0.02	0.02	No degradation
dimethyl sulphide	L	75-18-3	7	12	29	1	2.6	0.05	No degradation
dimethyl sulphoxide	L	67-68-5	>480	>480	>480	6	<0.02	0.02	No degradation
dioxane 1,4-	L	123-91-1	26	>480	>480	6	0.05	0.01	No degradation
epichlorohydrin	L	106-89-8	>480	>480	>480	6	<0.05	0.05	No degradation
ethanol	L	64-17-5	>480	>480	>480	6	<0.02	0.02	No degradation
ethanolamine	L	141-43-5	>480	>480	>480	6	<0.001	0.001	No degradation
ethyl acetate	L	141-78-6	>480	>480	>480	6	<0.01	0.01	No degradation
ethyl cellosolve acetate	L	111-15-9	>480	>480	>480	6	<0.01	0.01	No degradation
ethylene diamine	L	107-15-3	>480	>480	>480	6	<0.001	0.001	No degradation
ethylene dibromide	L	106-93-4	>480	>480	>480	6	<0.05	0.05	No degradation
ethylene glycol	L	107-21-1	>480	>480	>480	6	<0.05	0.05	No degradation
ethylene oxide	G	75-21-8	>480	>480	>480	6	<0.05	0.05	No degradation
formaldehyde (37%)	L	50-00-0	>480	>480	>480	6	<0.001	0.001	No degradation
formic acid (96%)	L	64-18-6	>480	>480	>480	6	<0.001	0.001	Discolouration
furaldehyde 2-	L	72321	7	16	>480	6	0.50	0.02	No degradation
glutaraldehyde (5%)	L	111-30-8	>480	>480	>480	6	<0.10	0.10	No degradation
heptane	L	142-82-5	>480	>480	>480	6	<0.02	0.02	No degradation
hexane	L	110-54-3	>480	>480	>480	6	<0.05	0.05	No degradation
hydrazine monohydrate	L	7803-57-8	>480	>480	>480	6	<0.001	0.001	No degradation
hydrochloric acid (37%)	L	7647-01-0	>480	>480	>480	6	<0.001	0.001	No degradation
hydrofluoric acid (48%)	L	7664-39-3	>480	>480	>480	6	<0.02	0.02	No degradation
hydrofluoric acid (73%)	L	7664-39-3	30	267	>480	6	0.18	0.01	No degradation
hydrogen chloride	G	7647-01-0	>480	>480	>480	6	<0.001	0.001	No degradation
hydrogen fluoride (anhydrous gas)	G	7664-39-3	132	244	304	5	nm	0.01	Degraded and discoloured
hydrogen fluoride (anhydrous liquid)	L	7664-39-3	52	125	228	4	1.5	0.01	Degraded and discoloured
hydrogen peroxide (30%)	L	7722-84-1	>480	>480	>480	6	<0.001	0.001	No degradation
kerosene	L	8008-20-8	>480	>480	>480	6	<0.05	0.05	No degradation
mercuric chloride (sat. solution)	L	7487-94-7	>480	>480	>480	6	<0.001	0.001	No degradation
methacrylic acid	L	79-41-4	>480	>480	>480	6	<0.001	0.001	No degradation
methanol	L	67-56-1	46	57	>480	6	0.54	0.02	No degradation
methyl acrylate	L	96-33-3	118	231	>480	6	0.15	0.02	No degradation
methyl-t-Butyl-ether	L	1634-04-4	145	248	>480	6	0.16	0.05	No degradation
methyl chloride	G	74-87-3	>480	>480	>480	6	<0.05	0.05	No degradation
methyl ethyl ketone	L	78-93-3	>480	>480	>480	6	<0.05	0.05	No degradation
methyl mercaptan	G	74-93-1	>480	>480	>480	6	<0.001	0.001	No degradation
methyl methacrylate	L	80-62-6	58	97	>480	6	0.42	0.02	No degradation
methyl vinyl ketone	L	78-94-4	>480	>480	>480	6	<0.05	0.05	No degradation
Methyl -2-pyrrolidone n-	L	872-50-4	6	12	>480	6	0.74	0.05	No degradation
methylene bromide	L	74-95-3	28	39	>480	6	0.45	0.05	No degradation
nicotine	L	56558	nt	nt	>480	6	nm	0.10	No degradation
nitric acid (70%)	L	7697-37-2	>480	>480	>480	6	<0.001	0.001	No degradation
nitric acid (>90% fuming)	L	7697-37-2	>480	>480	>480	6	<0.01	0.01	Discolouration
nitrobenzene	L	98-95-3	>480	>480	>480	6	<0.05	0.05	No degradation
nitromethane (96%)	L	75-52-5	>480	>480	>480	6	<0.05	0.05	No degradation
oleum (15% free SO3)	L	8014-95-7	>480	>480	>480	6	<0.001	0.001	No degradation
perchloric acid	L	7601-90-3	>480	>480	>480	6	<0.001	0.001	No degradation
petrol, leaded	L	-	>480	>480	>480	6	<0.10	0.10	No degradation
petrol, unleaded	L	8006-61-9	>480	>480	>480	6	<0.05	0.05	No degradation
phenol (85%)	L	108-95-2	>480	>480	>480	6	<0.05	0.05	No degradation
phosphoric acid (85%)	L	7664-38-2	>480	>480	>480	6	<0.001	0.001	No degradation

Chemical Name	State	CAS Number	Actual (min.)	ASTM (min.)	EN374-3 (min.)	EN Class	SSPR $\mu\text{g}/(\text{min.cm}^2)$	MDPR $\mu\text{g}/(\text{min.cm}^2)$	Observation
phosphorus oxytrichloride	L	10025-87-3	373	437	440	5	5.7 (max)	0.001	No degradation
potassium chromate (sat. solution)	L	7789-00-6	>480	>480	>480	6	<0.05	0.05	No degradation
propan-2-ol	L	67-63-0	>480	>480	>480	6	<0.05	0.05	No degradation
propylene oxide 1,2-	L	75-56-9	75	91	>480	6	0.55 (max)	0.05	No degradation
pyridine	L	110-86-1	19	22	>480	6	0.50 (max)	0.05	No degradation
'Roundup' weedkiller	L	-	>480	>480	>480	6	<0.001	0.001	No degradation
sodium cyanide (45%)	L	143-33-9	>480	>480	>480	6	<0.001	0.001	No degradation
sodium hydroxide (40%)	L	1310-73-2	>480	>480	>480	6	<0.001	0.001	No degradation
sodium hypochlorite (12% chlorine)	L	7681-52-9	>480	>480	>480	6	<0.001	0.001	No degradation
styrene	L	100-42-5	157	208	>480	6	0.51 (max)	0.05	No degradation
sulphur dioxide	G	2025884	>480	>480	>480	6	<0.001	0.001	No degradation
sulphuric acid (50%)	L	7664-93-9	>480	>480	>480	6	<0.001	0.001	No degradation
sulphuric acid (95-98%)	L	7664-93-9	>480	>480	>480	6	<0.001	0.001	No degradation
tetrachloroethylene	L	127-18-4	>480	>480	>480	6	<0.05	0.05	No degradation
tetrahydrofuran	L	109-99-9	23	27	41	2	4.1	0.05	No degradation
toluene	L	108-88-3	39	79	173	4	2.0	0.04	No degradation
toluene 2,4-diisocyanate	L	584-84-9	>480	>480	>480	6	<0.10	0.10	No degradation
toluidine o-	L	95-53-4	>480	>480	>480	6	<0.05	0.05	No degradation
trichloroacetic acid (80%)	L	64353	>480	>480	>480	6	<0.001	0.001	No degradation
trichlorobenzene 1,2,4-	L	120-82-1	>480	>480	>480	6	<0.05	0.05	No degradation
trichloroethylene	L	65386	12	14	21	1	12.1	0.05	No degradation
trifluoroacetic acid	L	64406	>480	>480	>480	6	<0.001	0.001	No degradation
triethylamine	L	121-44-8	59	71	168	4	1.7	0.05	No degradation
vinyl acetate	L	108-05-4	>480	>480	>480	6	<0.05	0.05	No degradation
xylene (iso-mix)	L	1330-20-7	377	399	>480	6	0.35 (max)	0.05	No degradation

CHEMICAL PERMEATION DATA FOR SUPERPOLY AND MINER BOOTS

Chemical	CAS no.	Breakthrough time
Acetone	67-64-1	> 30 mins
Acetonitrile	75-05-08	> 60 mins
Ammonia Gas	7664-41-7	> 240 mins
Carbon Disulphide	75-15-0	> 60 mins
Chlorine Gas	7782-50-5	> 480 mins
Dichlorobenzene	95-50-1, 106-46-7, 541-73-1	> 420 mins
Dichloromethane	75-09-02	> 60 mins
Diethylamine	109-89-7	> 120 mins
Dimethyl Formamide	68-12-2	> 60 mins
Ethanol	64-17-5	> 480 mins
Ethyl Acetate	141-78-6	> 120 mins
Hexane	110-54-3	> 180 mins

Chemical	CAS no.	Breakthrough time
Hydrogen Chloride Gas	7647-01-0	> 480 mins
Lactic acid	50-21-5	> 480 mins
Methanol	67-56-1	> 240 mins
Nitro Benzene	98-95-3	> 480 mins
Oleic acid	112-80-1	> 420 mins
Phosphoric acid	7664-38-2	> 480 mins
Potassium Hydroxide 40%	1310-58-3	> 480 mins
Sodium Hydroxide 40%	1310-73-2	> 480 mins
Sodium Hypochlorite 16%	7681-52-9	> 480 mins
Sulphuric Acid 96%	7664-93-9	> 480 mins
Tetrachloroethylene	127-18-4	> 120 mins
Tetrahydrofuran	109-99-9	> 30 mins
Toluene	108-88-3	> 180 mins

CHEMICAL PERMEATION DATA FOR HAZMAX™ BOOTS

Chemical	CAS no.	Method	Breakthrough time
Acetic acid (Glacial)	64-19-7	EN374-3	> 480 mins
Acetone	67-64-1	EN374-3	> 120 mins
Acetone Cyanohydrin	75-86-5	EN374-3	> 480 mins
Acetonitrile	75-05-08	EN374-3	> 360 mins
Acrylic Acid	79-10-7	EN374-3	> 480 mins
Acrylonitrile	107-13-1	EN374-3	> 120 mins
Ammonia 5%	1336-21-6	EN374-3	> 480 mins
Ammonia Gas	7664-41-7	EN374-3	> 480 mins
Ammonium Pentadecafluoro-octanoate (30% in water)	3825-26-1	EN374-3	> 480 mins
Aniline	62-53-3	EN374-3	> 480 mins
Anti-knock(Tetraethyl lead 60%Dibromoethane 30%/ Dichloroethane 10% TEL-CB	78-00-2 / 106-03-4 / 107-06-2	EN374-3	> 480 mins
Aqueous Phenol 85%	108-95-2	EN374-3	> 480 mins
Arsenic Acid	7778-39-4	EN374-3	> 480 mins
Benzene	71-43-2	EN374-3	> 240 mins
Benzene 85.5%/Toluene 8.6%/ Xylene3.2%/ Naphalene2.7%		EN374-3	> 180 mins Benzene only
Benzyl Chloride	100-44-7	EN374-3	> 480 mins
Bromine	7726-95-6	EN374-3	> 420 mins
Buta-1,3diene Gas	106-99-0	EN374-3	> 180 mins
Butyl Acetate	123-86-4	EN374-3	> 360 mins
Cable oil		EN374-3	> 480 mins
Carbazole	86-74-8	EN374-3	> 480 mins
Carbon Disulphide	75-15-0	EN374-3	> 60 mins
Chlorine Gas	7782-50-5	EN374-3	> 180 mins
Chromic Acid	1333-82-0	EN374-3	> 480 mins
Cyanogen Chloride	506-77-4	NFPA	No permeation detected
Cyclohexylamine	108-91-8	EN374-3	> 480 mins
Dichloromethane	75-09-02	EN374-3	> 60 mins
Diethylamine	109-89-7	EN374-3	> 120 mins
Diethylene Glycol dimethylether	111-46-6	EN374-3	> 480 mins
Dimethyl Formamide	68-12-2	EN374-3	> 480 mins
Dimethylformamide	68-12-2	EN374-3	> 180 mins
Epichlorohydrin	106-89-8	EN374-3	> 420 mins
Ethanol (Ethyl Alcohol)	64-17-5	EN374-3	> 480 mins
Ethyl Acetate	141-78-6	EN374-3	> 240 mins
Ethylene Glycol	107-21-1	EN374-3	> 480 mins
Ethylene Dichloride	107-06-2	EN374-3	> 480 mins
Ethylene Oxide	75-21-8	EN374-3	> 120 mins
Ethylenediamine tetra-acetic acid tetrasodium salt(EDTA) 5%	64-02-8	EN374-3	> 480 mins
Formaldehyde 37 %	79-11-8	EN374-3	> 480 mins
Formic Acid 65%	64-18-6	EN374-3	> 480 mins
Hexane	110-54-3	EN374-3	> 420 mins
Hydrazine	302-01-2	EN374-3	> 480 mins
Hydrazine 5%	7803-57-8	EN374-3	> 480 mins
Hydrochloric Acid 48%	7647-01-0	EN374-3	> 480 mins
Hydrofluoric Acid 48%	7664-39-3	EN374-3	> 480 mins
Hydrofluoric Acid 48%	7664-39-3	EN374-3	Over 66 Hours
Hydrofluoric Acid 73%	7664-39-3	EN374-3	> 480 mins
Hydrogen Chloride Gas	7647-01-0	EN374-3	> 480 mins

Chemical	CAS no.	Method	Breakthrough time
Hydrogen Fluoride gas anhydrous	7664-39-3	EN374-3	> 60 mins
Hydrogen Peroxide (10 volume (3%) solution)	7722-84-1	EN374-3	> 480 mins
Hydrogen Peroxide (50%)	7722-84-1	EN374-3	> 480 mins
Iso-butane	75-28-5	EN374-3	> 480 mins
Iso-butane followed by Hydrofluoric acid 71-75%	75-28-5 + 7664-39-3	EN374-3	> 480 mins
Iso-propanol (IPA)	67-63-0	EN374-3	> 480 mins
Lewisite	541-25-3	NFPA	No permeation detected
m-Cresol	108-39-4	EN374-3	> 480 mins
Methanol	67-56-1	EN374-3	> 480 mins
Methyl Ethyl Ketone (M.E.K) 2-Butanone	78-93-3	EN374-3	> 120 mins
Methyl Iodide 99%	74-88-4	EN374-3	> 90 mins
Methyl Methacrylate	80-62-6	EN 369	> 180 mins
methyl-1,2-pyrrolidone	872-50-4	EN369	> 480 mins
Methylene Chloride Gas	74-87-3	EN374-3	> 60 mins
Monochloroacetic acid	79-11-8	EN374-3	> 480 mins
Mustard Gas	505-60-2	NFPA	No permeation detected
Naphalene	91-20-3	EN374-3	> 480 mins
N,N-Dimethylaniline	121-69-7	EN374-3	> 480 mins
N,N-dimetyl acetamide	127-19-5	EN374-3	> 480 mins
Nitric Acid 50%	7697-37-2	EN374-3	> 480 mins
Nitric Acid 70% conc	7697-37-2	EN374-3	> 480 mins
Nitric Acid Etchant 80/20	7697-37-2	EN374-3	> 480 mins
Nitro Benzene	98-95-3	EN374-3	> 180 mins
Oleum 40% SO3	8014-95-7	EN374-3	> 480 mins
Oxalic Acid saturated solution	6153-56-6	EN374-3	> 480 mins
Phenol 50% in Methanol	108-95-2/67-56-1	EN374-3	> 480 mins
Phosphoric acid 25%	7664-38-2	EN374-3	> 480 mins
Phosphoric acid 75%	7664-38-2	EN374-3	> 480 mins
Propylene 1,2 oxide	75-56-9	EN374-3	> 60 mins
Red Fuming Nitric acid	7697-37-2	EN374-3	> 240 mins
Saren Gas	107-44-8	NFPA	No permeation detected
Sodium Cyanide 30wt%	143-33-9	EN374-3	> 480 mins
Sodium Hydroxide 40%	1310-73-2	EN374-3	> 480 mins
Sodium Hypochlorite 16%	7681-52-9	EN374-3	> 480 mins
Styrene	100-42-5	EN374-3	> 480 mins
Sulphuric Acid 96%	7664-93-9	EN374-3	> 480 mins
Tetrachloroethylene	127-18-4	EN374-3	> 180 mins
Tetraethyl Lead (Octel Anti Knock)	78-00-2	EN374-3	> 480 mins
Tetrahydrofuran	109-99-9	EN374-3	> 180 mins
Toluene	108-88-3	EN374-3	> 240 mins
Toluene 2,4 Diisocyanate	584-84-9	EN374-3	> 480 mins
Trichloroethane	71-55-6	EN374-3	> 360 mins
Trichloroethylene 1,1,2	79-01-6	EN374-3	> 180 mins
Triethanol-amine	102-71-6	EN374-3	> 480 mins
Triethylene Glycol	112-27-6	EN374-3	> 480 mins
Trigonox K-80 Cumyl hydroperoxide 80% / 20% Cumene	80-15-9/ 98-82-8	EN 369	> 480 mins
VX	50782-69-9	NFPA	No permeation detected
Xylene	1330-20-7	EN374-3	> 240 mins

Type 1 Gas-Tight Suits



	GTL		Limited Life		GTB Type 1 ET		GTIM-ET		GTA	
EN 943 Approval	Part 2, Type 1A-ET		Part 2, Type 1A-ET		Part 2, Type 1A-ET Part 1, Type 1A		Part 2, Type 1B-ET		Part 1, Type 1C	
Type	Fully encapsulating		Fully encapsulating		Fully encapsulating		For external BA		Airline Suit	
Usage	Disposable		Limited Life		Reusable		Reusable		Reusable	
Shelf Life	5 Years		10 Years		10 Years		10 Years		10 Years	
Material	Chemprotex™ 400		Tychem TK		VBV or Viton Laminate		VBV		VBV, Neoprene, PVC	
Servicing	None		None for 5 years (if not used) Annual pressure test after 5 years*		Annual pressure test*		Annual pressure test*		Appropriate regular pressure testing	
Locking Cuff			✓		✓		✓		✓	
Sure-Loc Cuff			○		○		○		○	
Flexible Visor	✓		✓							
Rigid Visor					✓		(Facemask)		✓	
Detachable Boots			✓		✓		✓		✓	
Integral Sock			○		○		○			
Pass-through			○		○					
Attachment points			○		○		○			
Ventilation					○				✓	
Fall Arrest					○					

Applications										
Fire & Emergency	✓		✓		✓		✓		✓	
Petrochemical					✓		✓		✓	
Pharmaceutical	✓		✓		✓		✓		✓	
Nuclear										
Shipping	✓		✓							

Splash Suits



Air-Fed Reusable Suits



Lightweight SC1		Lightweight SC4		Reusable SC1		Reusable SC4	
Approval	Type 3,4,5, 6	Type 3	Type 3	Type 3	Type 3	Type 3	Type 3
Type	For external BA	Fully encapsulating	Fully encapsulating	For external BA	Fully encapsulating	Fully encapsulating	Fully encapsulating
Usage	Limited Life	Limited Life	Limited Life	Reusable	Reusable	Reusable	Reusable
Shelf Life	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years
Material	Chemprotex™ 300	Chemprotex™ 300	Chemprotex™ 300	Butyl, Neoprene, PVC	Butyl, Neoprene, PVC	Butyl, Neoprene, PVC	Butyl, Neoprene, PVC
Servicing	None	None	None	Regular servicing as per UI's	Regular servicing as per UI's	Regular servicing as per UI's	Regular servicing as per UI's
Welded Glove	✓	✓	✓	✓	✓	✓	✓
Locking Cuff				○	○	○	○
Sure-Loc Cuff	✓			✓	✓	✓	✓
Facemask seal							
Flexible Visor		✓	✓				
Rigid Visor							
Detachable Boots				○	○	○	○
Integral Sock	✓	✓	✓				
Double Elasticated Legs				✓	✓	✓	✓

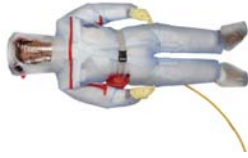
Simplair Tank Suit		Simplair Suit	
Approval	Type 2	Approval	Type 2
Type	Air-fed, non-gas-tight	Air-fed, non-gas-tight	Air-fed, non-gas-tight
Usage	Reusable	Reusable	Reusable
Shelf Life	10 Years	10 Years	10 Years
Material	Butyl, Neoprene, PVC	Butyl, Neoprene, PVC	Butyl, Neoprene, PVC
Servicing	Regular servicing as per UI's	Regular servicing as per UI's	Regular servicing as per UI's
Welded Glove	✓	✓	✓
Locking Cuff	○	○	○
Sure-Loc Cuff			
Facemask seal			
Flexible Visor			○
Rigid Visor	✓	✓	✓
Detachable Boots	○	○	○
Integral Sock			○
Double Elasticated Legs	✓	✓	○

Applications

Fire & Emergency	✓	✓	✓
Petrochemical			
Pharmaceutical			
Nuclear			
Shipping	✓		

Fire & Emergency		✓	✓
Petrochemical	✓		
Pharmaceutical	✓		
Nuclear			
Shipping			

Air-Fed Limited Life Suits



Powered Respirator Suits



Air-Fed Limited Life Suits		Powered Respirator Suits	
Approval	Airprotex FM	Airprotex AF	Frontair 2
Type	Class 5 One piece air-fed particulate suit with facemask	Type 2 One piece air-fed suit with reusable air system	Class 5 One piece air-fed particulate suit
Usage	Disposable outer skin	Disposable outer skin	Disposable
Shelf Life	5 Years	10 Years	5 Years
Servicing	Suit: None Regulator: As per UI's	Suit: None Regulator: Annual flow check	None
Material	150 or 300µm PVC	300µm PVC or Chemprotex™ 300	150 or 300µm PVC or Chemprotex™ 300
Plain Sleeve	○		✓
Elasticated Sleeve			
Welded Glove		✓	✓
O-ring cuff	✓	○	○
Locking Cuff			
Elasticated Legs			
Sock Foot & Outer Leg	✓	✓	
Ant-Slip Foot	○	○	✓
Hazmax Boots			

Air-Fed and Powered Respirator Suit Comparison		Air-Fed and Powered Respirator Suit Comparison	
Applications			
Fire & Emergency			✓
Petrochemical			
Pharmaceutical	✓	✓	
Nuclear	✓	✓	
Shipping			





Air-Fed Hoods

Powered Respirator Hood



Simplair Hood		NIOSH Blouse		Frontair 2 Hood		Flo-Pod Hood	
Approval	Class 4A/4B, Type PB [4]	Type 2		Class 4A/4B		APF 40, NPF 500	
Type	Air-Fed Hood	Air-Fed Blouse with locking cuffs		Air-Fed Hood		Hood for Flo-Pod Powered Respirator	
Usage	Reusable	Reusable		Limited Life		Limited Life	
Shelf Life	10 Years	10 Years		5 Years		5 Years	
Servicing	Regular servicing as per UI's	Regular servicing as per UI's		Hood: None Regulator: Annual flow check		No servicing, but filters should be replaced regularly (see UI's)	
Material	Neoprene or PVC	Fluorescent Red Neoprene		150 or 300µm PVC		150µm PVC	
Required Airflow	220-280L/minin	170-280L/minin		160-320L/minin		N/A (130L/minin MMDF)	
Rigid Visor	✓	✓					
Flexible 360 Visor	○			✓		✓	
Three-Point Hanging	✓	✓					
Low Flow Warning	✓	✓		✓		✓	
Applications							
		✓				✓	
		✓		✓		✓	
				✓		✓	

Chemical Workwear

									
		Jacket & Trousers		Siren Suit		Cowl Suit		Lightweight Cowl Suit	
Approval		Type 4		Type 4		Type 3		Type 3, 4, 5 & 6	
Type		Separate jacket and bib trousers		One-piece suit with collar		One-piece suit with hood		One-piece suit with hood	
Usage		Reusable		Reusable		Reusable		Limited Life	
Shelf Life		10 Years		10 Years		10 Years		10 Years	
Material		Butyl, Neoprene, PVC		Butyl, Neoprene, PVC		Butyl, Neoprene, PVC		Chemprotex™ 300	
Servicing		Regular servicing as per UI's		Regular servicing as per UI's		Regular servicing as per UI's		None	
Elasticated cuff		○		○		○		✓	
Soft Cuff & Cone		✓		✓		✓			
Locking Cuff		○		○		○			
Sure-Loc Cuff		○		○		○			
Collar		✓		✓					
Hood		○				✓		✓	
Plain Leg		✓		○		○			
Elasticated Leg		○		○		○		✓	
Double Elasticated Leg		○		✓		✓			
Detachable Boots		○		○		○			

Applications

Applications			
Fire & Emergency			
Petrochemical	✓	✓	✓
Pharmaceutical			
Nuclear			
Shipping	✓		

Workmaster™ Boots



	EN ISO 20345:2011 Marking	Hazmax™	Hazmax™ ESD	Dielectric	Superpoly	Superpoly D
Chemical Resistance		●	●		◐	◐
Electrical Resistance (EN 50321)				✓		✓
Low Temperature Resistance					✓	✓
Cut Resistant Upper	CR				✓	✓
Slip Resistant Vulcanised Rubber Sole	SRA	✓	✓	✓	✓	✓
Cut Resistant Sole		✓	✓	✓	✓	✓
Hot Contact Resistant Sole	HRO	✓	✓	✓	✓	✓
Oil & Fuel Resistant Sole	FO	✓	✓	✓	✓	✓
Oil & Fuel Resistant Upper		✓	✓		✓	✓
Cold Insulation	CI	✓	✓	✓	✓	✓
Energy Absorbent Heel	E	✓	✓	✓	✓	✓
Anti-static	A	✓	✓			
Electrostatic Discharge (ESD)			✓			
Steel Toe Cap (200 Joule)		✓	✓	✓	✓	✓
Stainless Steel Midsole	P	✓	✓			
S5 Marking	S5*	✓	✓			
Comfort Insole		✓	✓	✓	✓	✓
REACH Compliant		✓	✓	✓	✓	✓








Applications

Petrochemical		✓				
Pharmaceutical		✓	✓			
Industrial Chemicals		✓				
Hazardous Waste		✓				
Emergency Services		✓				
Electronics			✓			
Power Generation & Distribution				✓		
Telecommunications				✓		
Transport				✓		
Construction				✓		
Mining						
Farming					✓	
Gardening & Landscaping						
Red Meat Processing						
Slaughter Houses					✓	✓
Poultry					✓	✓
Food Processing					✓	

Key:

- Chemical resistance to EN13832-3 plus the 15 chemicals specified in EN943 (see page 40)
- ◐ Resistance to food industry cleaning and sanitising solutions plus 15 chemicals specified in EN943 (see page 39)
- Optional

Overboots

						
Digger	Digger Anti-static	Miner	Hazmax™ Overboot	Dielectric Overboot	Superpoly Overboot	Polyflex Overboot
		●	●		●	
				✓		
		✓			✓	
		✓			✓	
✓	✓	✓	✓	✓	✓	✓
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*Boots are either marked SB which means that the boot meets the basic requirements of EN20345:2011, or S5 which means the boot also meets the following additional requirements: Closed seat region, Antistatic properties, Energy absorption of seat region, Resistance to fuel oil, Penetration resistance, Cleated outsole.



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