



*You are safe with us!*



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# ULTITEC



*Chemical Protective Clothing  
Product Catalogue*





## DEREKDUCK INDUSTRIES CORP.

Derekduck, established in 1992, has been devoting itself to the innovation, R&D, and creation of nonwoven materials used in the manufacture of body protection. We are currently marketing product & services to 40 countries and regions. Derekduck offers body protection solutions applicable to both medical and industrial fields, the product portfolio includes disposable chemical protective clothing and infection control gowns. Not only providing finished products, we can also supply fabric roll goods, and offer customized OEM service.

Accumulated over decades of experiences, Derekduck supports our clients/partners a full technical consultancy service. We aim to assist clients to reach their target and keen on offering required technical and marketing support.

## ASSURED QUALITY MANUFACTURING

With over 25 years experience in coverall industry, our quality system is assessed, monitored and certified by SGS UK (notified body CE0120) and fully meets the requirement of PPE Directive 89/686/EEC (Article 11B) (will be called module D2 under new regulation 2016/425). ULTITEC, manufactured under the rigorous quality standard, strictly follows the European Norm specified in Category III of the PPE directive for chemical protective clothing. Derekduck is also an ISO9001:2008 certified company and a registered supplier for the US FDA.



Article 11B



ISO 9001:2008

## ULTITEC, YOU ARE SAFE WITH US!

Since 2008, Derekduck commenced developing its own protective clothing brand—ULTITEC. Applying its professional knowledge and experience to the end user solution. ULTITEC aims to be the most professional & reliable chemical protective clothing manufacturer in the global market.

The name ULTITEC is derived from two words "ULTIMATE" and "PROTECTION", as it reveals our original ambition that we are striving to achieve which is – people dealing with challenging situations and exposed to hazardous environments, wearing ULTITEC coveralls assures full protection and optimum comfort. ULTITEC becomes their ultimate shield and makes sure they go home safely. It is our commitment to all our clients and users – YOU ARE SAFE WITH US!

## ACT WITHOUT FEAR!

When working at the front lines dealing with toxic dust or liquid hazards, all of these workers are heroes. They need to work fearlessly, we commend all the front-line personnel.

### ULTITEC in International Rescue Events

- **2013 Rayong oil spill cleaning in the Gulf of Thailand**

About 50,000 liters of oil spilled into the Gulf of Thailand from a leak in a pipeline. The oil slick floated on the sea and reached the beach. Thousands of workers, soldiers, and volunteers kept cleaning the contaminated beach to reduce the terrible damage from this devastating disaster. In this extremely hazardous cleanup action, ULTITEC coveralls provide the necessary protection against any possible damage to those personnel involved.



- **2016 Taiwan bird flu infection control operation**

In Tainan Taiwan, the local authorities had culled more than 1,800 geese to prevent a suspected avian influenza (bird flu) outbreak. Bird flu caused serious economic losses in Taiwan, Southeast Asia, and China. In this incident, the culling was carried out by workers wearing ULTITEC coveralls to protect themselves from the biological risks of contamination.



- **2017 Turkey gas plant asbestos removal operation**

How serious can asbestos hazards be? Turkey local online press said there were dangerous amounts of asbestos detected from a gas plant demolition in Ankara. After that, the local Ministry of Education demanded the schools and the residents in that region to be evacuated and moved until the demolition process was completed. The personnel involved in the demolition required head to toe protection to protect against exposure to fine asbestos fibres. ULTITEC protective clothing was once again worn to be the physical protection against this highly dangerous hazard.



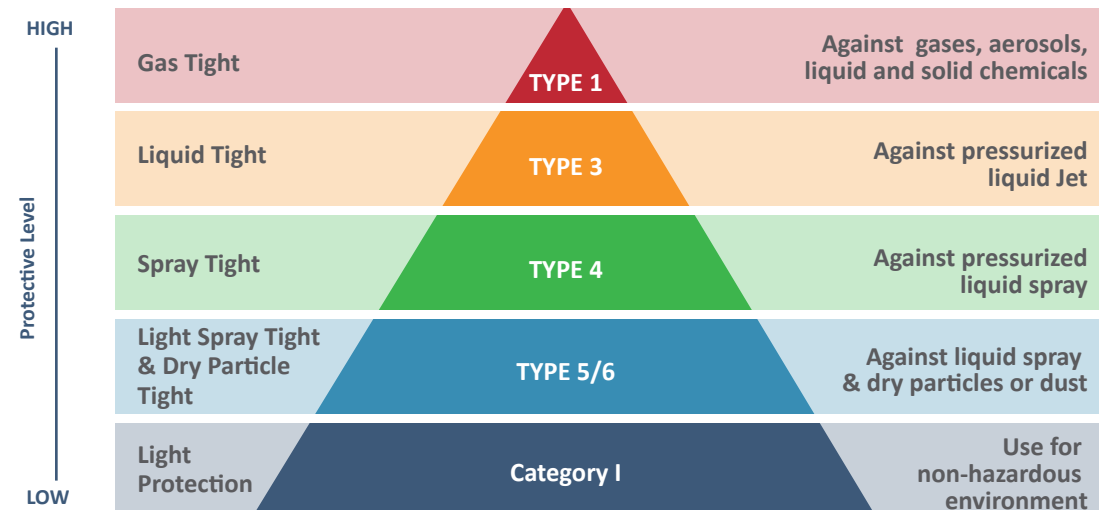
## CE STANDARDS FOR PROTECTIVE CLOTHING

Protective coveralls are designed to resist various hazardous situations. EEC guideline 89/686 (2016/425), PPE is divided into 3 categories:

- Category I: Basic PPE protects against minimal risks.
- Category II: PPE that cannot be clearly classified under Category 1 or 3 is assigned to Category 2.
- Category III: PPE of complex design is intended to protect against mortal danger and/or serious and irreversible injury to health

Protective clothing complies with category III, and the requested certification enumerate on the following explanation.

<p><b>TYPE 1 EN 943-1</b> Gas tight suits Protective clothing against dangerous solid, liquid and gaseous chemicals, including liquid and solid aerosols.</p>	<p><b>TYPE 3 EN 14605</b> Liquid tight suits Suits which can protect against strong and directional jets of a liquid chemical such as spray from a burst pipe under pressure. Requires a barrier fabric and sealed seams.</p>
<p><b>TYPE 4 EN 14605</b> Spray tight suits Suits which can protect against saturation of liquid chemical, where the volume of the liquid builds up on the suit forming pools, resulting in rivulets. Requires a barrier fabric and sealed seam.</p>	<p><b>TYPE 5 EN ISO 13982-1</b> Dry particle suits Suits for protection against hazardous dry particles.</p>
<p><b>TYPE 6 EN 13034</b> Reduced spray suits Suits for protection against light spray and splashes of liquid chemicals where there is no directional spray or build up of liquid on the suit, but there may be a fine mist of droplets in the atmosphere.</p>	<p><b>AGAINST RADIOACTIVE CONTAMINATION EN 1073-2</b> Protective clothing against particulate radioactive contamination.</p>
<p><b>ANTI-STATIC EN 1149-5</b> Electrostatic dissipative protective clothing with a surface resistance of maximum 2.5 X 10 exp 9 ohms.</p>	<p><b>AGAINST BIOLOGICAL HAZARDS EN 14126</b> Protection against biological hazards and infective agents.</p>
<p><b>AGAINST LIMITED FLAME SPRAY PROTECTION EN ISO 14116</b> Limited flame spray materials, material assemblies, and clothing.</p>	<p><b>AGAINST PESTICIDES DIN 32781</b> Suits for protection against pesticides.</p>



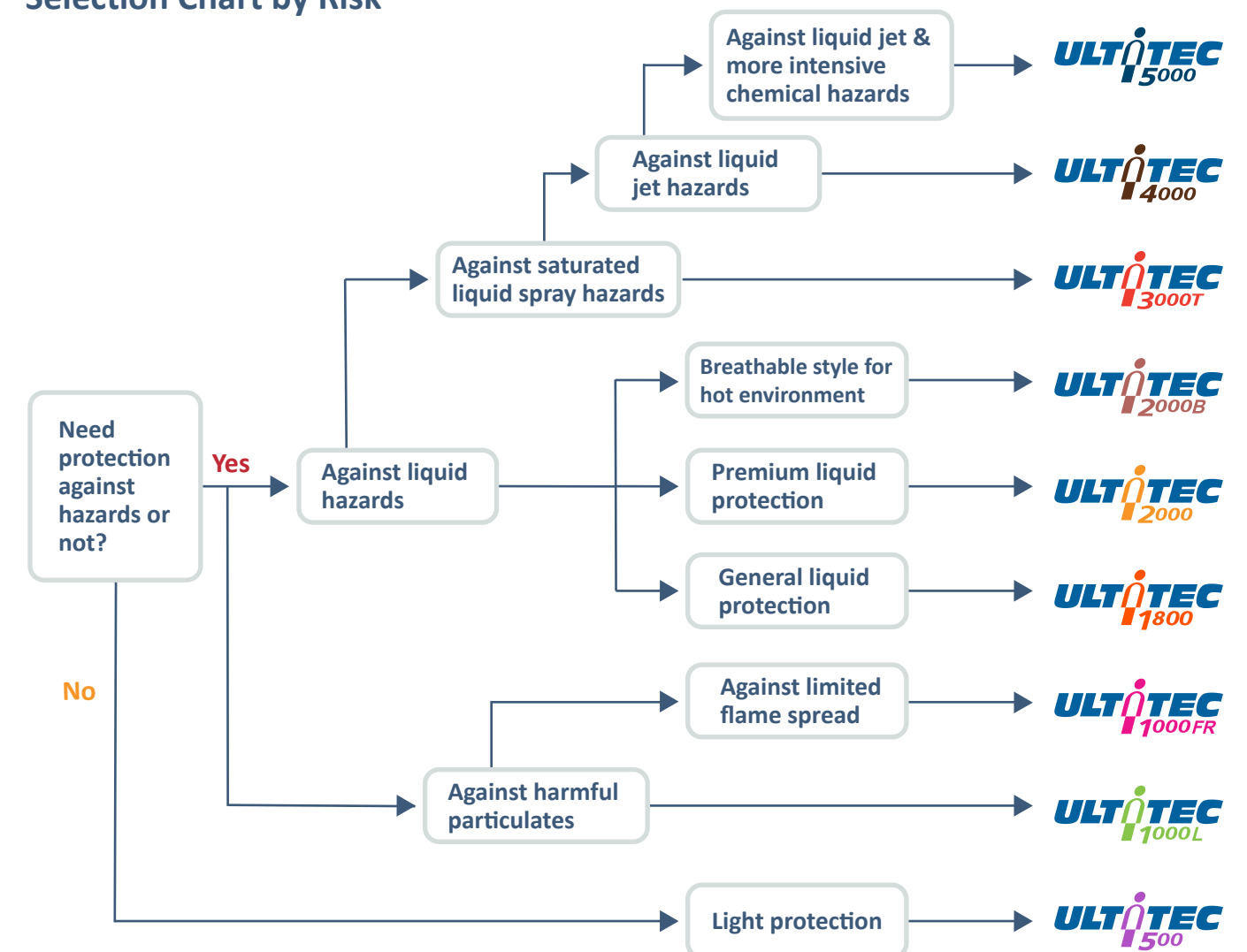
## CHOOSE A PROTECTIVE CLOTHING

To choose an appropriate protective clothing, firstly, you must identify potential risks or hazards at working environment. After which, assess the equivalent protection level required protective clothing.

Identify environmental risk

Meet the required protection level

### Selection Chart by Risk





Please see below our product evaluation guide to ensure the correct coverall is used in the garment selection process:

- Excellent ★★★★★
- Superior ★★★★☆
- Good ★★★☆☆
- Average ★★☆☆☆
- Minimal ★☆☆☆☆

ULTITEC 500

Light Protection Protective Coverall



Breathability ★★★★★  
Liquid Protection ★☆☆☆☆  
Dry Particulate Protection ★☆☆☆☆

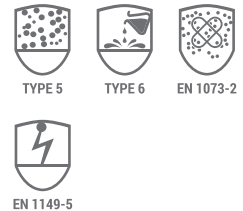
Category I

ULTITEC 1000L

Dust & Light Liquid Spray Protective Coverall



Breathability ★★★★★  
Liquid Protection ★☆☆☆☆  
Dry Particulate Protection ★★★★★

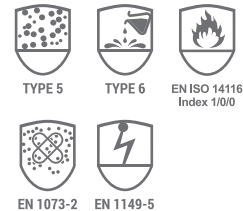


ULTITEC 1000FR

Dust, Light Liquid Spray & Flame Retardant Protective Coverall



Breathability ★★★★★  
Liquid Protection ★☆☆☆☆  
Dry Particulate Protection ★★★★★



ULTITEC 1800

Dust & Liquid Splash Resistant Coverall



Breathability ★★★★★  
Liquid Protection ★★★★★  
Dry Particulate Protection ★★★★★

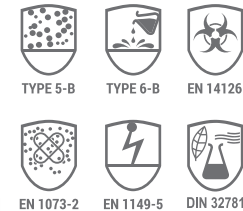


ULTITEC 2000

Dust, Liquid Splash & Infective Agent Resistant Coverall



Breathability ★★★★★  
Liquid Protection ★★★★★  
Dry Particulate Protection ★★★★★

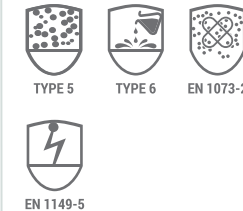


ULTITEC 2000B

Comfort Liquid Splash Resistant Coverall



Breathability ★★★★★  
Liquid Protection ★★★★★  
Dry Particulate Protection ★★★★★



ULTITEC 3000T

Oil, Chemical & Infective Agent Resistant Coverall



Breathability ★★★★★  
Liquid Protection ★★★★★  
Dry Particulate Protection ★★★★★

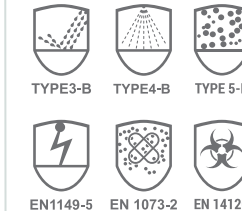


ULTITEC 4000

Chemical & Liquid Jet Resistant Coverall



Breathability ★★★★★  
Liquid Protection ★★★★★  
Dry Particulate Protection ★★★★★

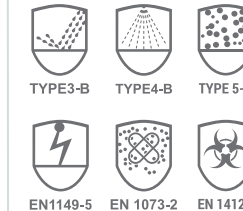


ULTITEC 5000

High-level Chemical & Liquid Jet Resistant Coverall



Breathability ★★★★★  
Liquid Protection ★★★★★  
Dry Particulate Protection ★★★★★





ULTITEC COMFORT DESIGN FOR USERS

- **Ergonomic body design**  
3-piece hood with elastic and zipper fastened to the underside of chin perfectly embraces facial contours and head shape. It enables hood to stay well fit when wearing respirators and goggles. Fully elasticated waist, ankles and elasticated wrists (special design for ULTITEC 500 to ULTITEC 3000T) are suitable for most body shapes. It makes the wearers more convenient in moving and unlike wearing a balloon.
- **Freedom of movement**  
Ample crotch design provides more room and reduces pressure while squatting or crawling.
- **Latex free elastic**  
All non-latex elastics are sewn outside of cuff to avoid skin allergy.
- **Sealed fit for safety** (special design for ULTITEC 4000 to ULTITEC 5000)  
Additional chin strap covering non-symmetrical brim elastic to create a more effective fit to most facial contours.  
All sewn seams are further secured by covering with chemical proof tape.

ULTITEC 500 to ULTITEC 3000T



ULTITEC 4000 to ULTITEC 5000



SIZE CHART

SIZE	CHEST	HEIGHT
S	84 - 92 cm	162 - 170 cm
M	92 - 100 cm	170 - 176 cm
L	100 - 108 cm	176 - 182 cm
XL	108 - 116 cm	182 - 188 cm
XXL	116 - 124 cm	188 - 194 cm
XXXL	special larger sizes made to order	





*MOVE EASILY, WORK EFFICIENTLY*





## ULTITEC 500 Light Protection Protective Coverall

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- Strong and durable fabric offers light protection for non-toxic environment.
- Designed to fit your body shape, make you more comfortable when working.
- CE Category I coverall.

## APPLICATION

Civil Protection  
Construction  
Decorative Work  
Food Processing & Packing



Zipper fastens to  
underside of chin



3-piece hood



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



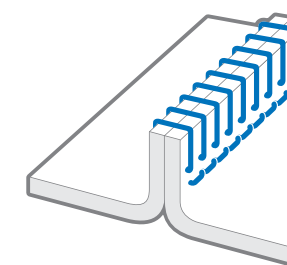
Color ☒ ☐



## Seam Construction

### 4-thread overlocked seam

- 7-9 stitched per inch
- Heavier thread fibre is above 150D
- Bite depth 4 mm







## ULTITEC 1000L Dust & Light Liquid Spray Protective Coverall

Best economic choice type 5 & 6 protective clothing, provides superior protection against hazardous dry particulates and light liquid spray in the workplaces.



TYPE 5



TYPE 6



EN 1073-2



EN 1149-5

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- **Lightweight & more durable**  
Our multi-layer SMS fabric provides superior physical performance while it is breathable for wearer's comfort.
- **Excellent particle barrier**  
The fabric filters resist 99.8% of particles of size 0.5-1µm.
- **Designed to fit your body shape**  
Fully elasticated hood, ankles, wrists, and waist afford optimum comfort and ease of movement.
- **Antistatic (EN 1149-5) is optional!**  
If antistatic is not required, then ULTITEC 1000L-NA can be an option. It provides a more cost-effective solution and is especially suitable for asbestos removal. Different colors are also available in blue, red and yellow.



## APPLICATION

Asbestos Removal  
Construction  
Grinding  
Hazardous Dust  
Metal Polishing  
Mining Process  
Powder Coating  
Waste Cleaning



Zipper fastens to underside of chin



3-piece hood



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



Color

ULTITEC  
1000L-NA



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	2
Flex Cracking Resistance	ISO 7854	5
Trapezoidal Tear Resist.	ISO 9073-4	1
Tensile Strength	ISO 13934-1	1
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
Antistaticity	EN 1149-5	Pass
pH Value	ISO 3071	Pass
AZO Dyes	EN 14362-1	Pass
Fastness to perspiration	ISO 105-E04	Pass
Resistance to Ignition	EN 13274-4	Pass

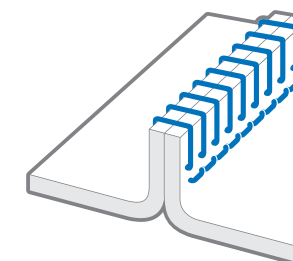
FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 5 Inward Leakage Test	Pass
Type 6 Low Level Spray Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 1

## Seam Construction

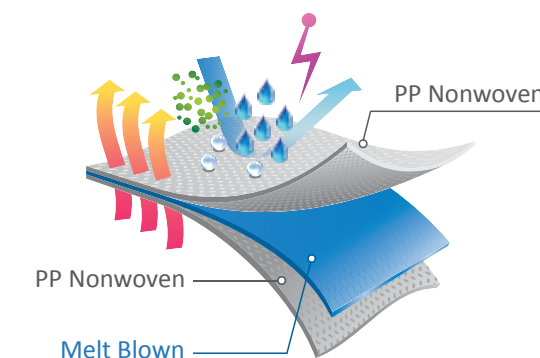
### 4-thread overlocked seam

- 7-9 stitched per inch
- Heavier thread fibre is above 150D
- Bite depth 4 mm



## Fabric Construction

### Multilayer SMS fabric







*Flame  
Retardant*



*YOUR SAFETY, OUR RESPONSIBILITY*







## ULTTEC 1000FR

Dust, Light Liquid Spray  
& Flame Retardant  
Protective Coverall

Flame retardant treated  
coverall with type 5 & 6  
certification, protects you  
and your reusable flame  
resistant suits from sparks  
and chemicals.



TYPE 5



TYPE 6



EN ISO 14116  
Index 1/0/0



EN 1073-2



EN 1149-5

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- **Extend the shelf life of your reusable flame resistant garments**  
Worn on top of the flame-resistant garments when working, it brings to prolong the usage duration and saves laundry costs.
- **Durable & breathable**  
Multilayer SMMS fabric is not only strong and durable, but also soft and breathable. It brings an effective barrier against particulates and low-level liquid spray.

#### Notes:

According to EN ISO14116 Index 1, the limited flame spread coverall must never be in direct contact with skin. The ULTITEC 1000FR must be always worn on top of index 2 or 3 thermal protective garments and hoods.

The seams, elastics and zipper components are not made of flame retardant materials and may burn if exposed to heat and flame.



APPLICATION

Gas & Oil  
Metal Welding  
Petrochemical  
Railway  
Utilities

Zipper fastens to  
underside of chin



3-piece hood



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



Color  



PERFORMANCE CHART

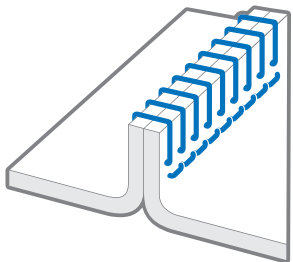
FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	1
Flex Cracking Resistance	ISO 7854	4
Trapezoidal Tear Resist.	ISO 9073-4	2
Tensile Strength	ISO 13934-1	1
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
Antistaticity	EN 1149-5	Pass
pH Value	ISO 1413	Pass
Limited Flame Spread	ISO 15025	INDEX 1/0/0

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3

WHOLE SUIT TEST PERFORMANCE		RESULT
Type 5	Inward Leakage Test	Pass
Type 6	Low Level Spray Test	Pass
EN 1073-2	Protective Clothing Against Radioactive Contamination	Class 1

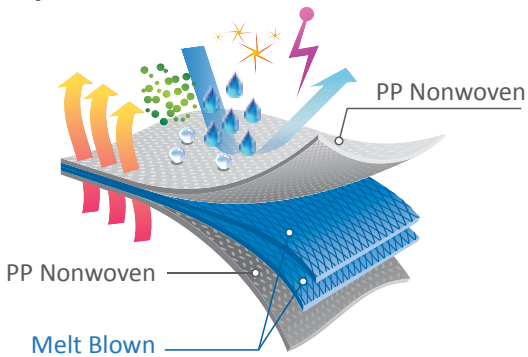
Seam Construction

- 4-thread overlocked seam
- 7-9 stitched per inch
  - Heavier thread fibre is above 150D
  - Bite depth 4 mm



Fabric Construction

Multilayer SMMS fabric







*Liquid  
Protection*

*PERSIST WITH ULTIMATE PROTECTION*







## ULTITEC 1800 Dust & Liquid Splash Resistant Coverall

The cost-effective liquid-proof coverall, provides protection against light liquid splash whilst offering good breathability.



TYPE 5-B



TYPE 6-B



EN 14126



EN 1073-2



EN 1149-5

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- **Lightweight and cost-effective**  
The light microporous fabric offers comfort and protection against hazardous liquid splash and particulates.
- **Exceeds EN 368 & EN 14126**  
Provides protection against biological hazards, the performance levels exceed the WHO protective clothing specification option 1 for Ebola infection control. [Note \*]
- **Good breathability**  
High water-vapour transmission & soft texture ensures wearer comfort.
- **Low linting**  
Reduces the risk of fiber contamination to the work environment.

Note\*: The WHO recommended specification for coveralls against filovirus disease issued in Oct, 2014 stated that healthcare workers should choose appropriate protective apparel, which meets the following two requirements:  
option 1, tested for resistance to blood and body fluid penetration: meets or exceeds ISO 16603 class 3 exposure pressure.  
option 2, tested for resistance to blood-borne pathogen penetration; meets or exceeds ISO 16604 class 2 exposure pressure.



## APPLICATION

Agriculture  
Automotive  
Biological Hazards  
Cleaning Process  
Construction  
Chemical Plants  
Food Industry  
Petrochemical  
Pharmaceutical  
Painting



Zipper fastens to  
underside of chin



3-piece hood



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



Color ☐



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	1
Flex Cracking Resistance	ISO 7854	3
Trapezoidal Tear Resist.	ISO 9073-4	2
Tensile Strength	ISO 13934-1	1
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	5
Antistaticity	EN 1149-5	Pass
pH Value	ISO 3071	Pass
Resistance to Ignition	EN 13274-4	Pass

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3

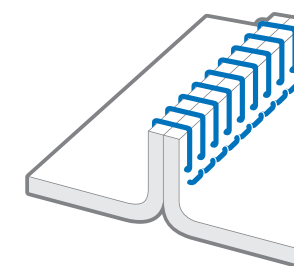
AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	1
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 5 Inward Leakage Test	Pass
Type 6 Low Level Spray Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 1

### Seam Construction

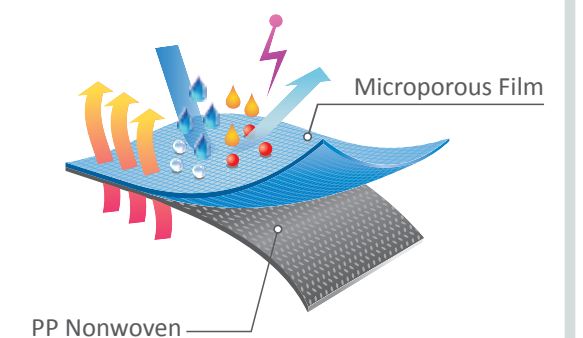
#### 4-thread overlocked seam

- 7-9 stitched per inch
- Heavier thread fibre is above 150D
- Bite depth 4 mm



### Fabric Construction

#### Microporous film laminate PPSB







## ULTITEC 2000 Dust, Liquid Splash & Infective Agent Resistant Coverall

Designed to protect workers against liquid splash or particulate and biological agents. The most popular and widely applied choice in various industries.



TYPE 5-B



TYPE 6-B



EN 14126



EN 1073-2



EN 1149-5



DIN 32781

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- **The premium microporous fabric offers an outstanding barrier against wide range of chemical liquids, blood, body-fluid and infective agents.**  
Fully meets EN368, ASTM F1670 & EN14126. The performance also exceeds both WHO protective clothing specification option 1 & 2 for Ebola infection control. [Note\*]
- **Protective suits against pesticides**  
Meets DIN 32781 requirement on both protection and comfort in agriculture application.
- **Breathable & comfortable**  
Fabric allows water-vapour transmission, which offers breathability to keep the wearer comfortable.
- **Low linting**  
Reduces the risk of fiber contamination to the work environment.
- **Suitable for ISO class 6 and above cleanroom. [Note\*\*]**

Note\*: The WHO recommended specification for coveralls against filovirus disease issued in Oct, 2014 stated that healthcare workers should choose appropriate protective apparel, which meets the following two requirements:  
option 1, tested for resistance to blood and body fluid penetration: meets or exceeds ISO 16603 class 3 exposure pressure.  
option 2, tested for resistance to blood-borne pathogen penetration; meets or exceeds ISO 16604 class 2 exposure pressure.

Note\*\*: ULTITEC 2000 coverall is suitable for both ISO 14644-1 and US FED-STD 209E cleanroom standard. Test result shown in the following table:

ISO 14644-1 Class	1	2	3	4	5	6	7	8	9
US FED-STD 209E	--	--	1	10	100	1,000	10,000	100,000	--
						✓	✓	✓	✓



## APPLICATION

Agriculture  
 Automotive  
 Biological Hazards  
 Disaster Management  
 Disease Control  
 Electronic Industries  
 Pharmaceutical (cleanroom)  
 Petrochemical  
 Painting

Zipper fasten  
the edge of chin



3-piece hood



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



Color ☐



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	2
Flex Cracking Resistance	ISO 7854	5
Trapezoidal Tear Resist.	ISO 9073-4	1
Tensile Strength	ISO 13934-1	1
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
Burst Resistance	ISO 13938-1	3
Antistaticity	EN 1149-5	Pass
pH Value	ISO 3071	Pass
Resistance to Ignition	EN 13274-4	Pass
Resistance to Water Penetration	EN 20811	> 2500 mm
Water Vapour Resistance [Ret]	ISO 11092	31.7 m <sup>2</sup> *Pa/W

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	EN 368	Class 3	Class 3
Sodium Hydroxide 10%	EN 368	Class 3	Class 3
Isopropanol	EN 368	Class 3	Class 2

AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	2
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

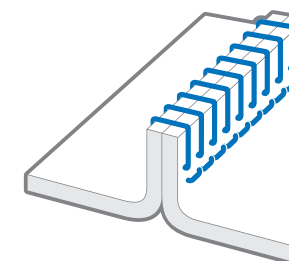
RESISTANCE TO PENETRATION BY PESTICIDES ACCORDING TO EN 14786	Sample 1	Sample 2	Sample 3	Sample 4
Betanal Expert	N.D	N.D	N.D	N.D
Folicur	N.D	0.22	N.D	N.D
Amistar	N.D	N.D	N.D	N.D
Pinimor Granulat	N.D	N.D	N.D	N.D
U46-D-Fluid	N.D	N.D	N.D	N.D

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 5 Inward Leakage Test	Pass
Type 6 Low Level Spray Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 1

## Seam Construction

### 4-thread overlocked seam

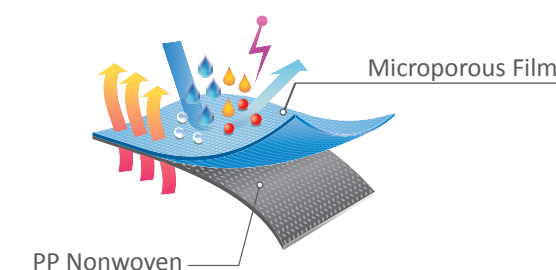
- 7-9 stitches per inch
- Heavier thread fibre is above 150D
- Bite depth at 4mm



## Fabric Construction

### Microporous film laminate PPSB

- MVTR is above 5000 gsm / 24hr (ASTM E96 BW)
- Hydro-head is above 2000 mm-H<sub>2</sub>O (ISO 811)





## LIQUID-PROOF ACCESSORIES (Type PB[6])

Hood



- Disposable shoulder length hood with elasticated face opening
- Neoprene rubber (latex free)

Lab Coat



- Disposable lab coat with collar
- Neoprene rubber (latex free)

Apron



- Disposable apron with neck loop
- Rear tie fastener

Sleeve Cover



- Disposable sleeve cover with elasticated opening at each end
- Neoprene rubber (latex free)

Shoe cover/Shoe cover with sole



- Disposable shoe cover with elasticated opening
- Anti-slip PVC sole design is optional
- Neoprene rubber (latex free)

Boot cover/Boot cover with sole



- Disposable boot cover with elasticated opening and ankle
- Anti-slip PVC sole design is optional
- Neoprene rubber (latex free)

## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	2
Flex Cracking Resistance	ISO 7854	5
Trapezoidal Tear Resist.	ISO 9073-4	1
Tensile Strength	ISO 13934-1	1
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
Burst Resistance	ISO 13938-1	3
Antistaticity	EN 1149-5	Pass
pH Value	ISO 3071	Pass
Resistance to Ignition	EN 13274-4	Pass

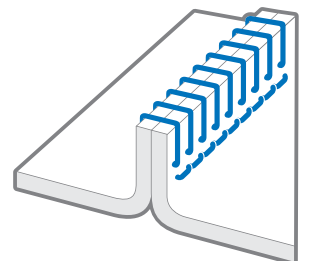
FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	EN 368	Class 3	Class 3
Sodium Hydroxide 10%	EN 368	Class 3	Class 3
Isopropanol	EN 368	Class 3	Class 2

AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	2
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

### Seam Construction

#### 4-thread overlapped seam

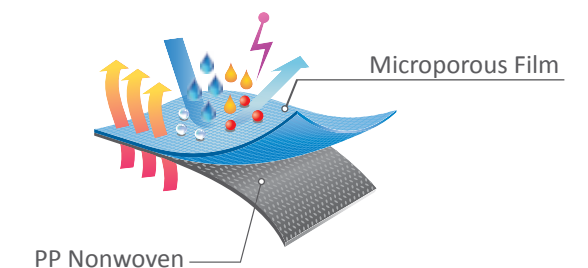
- 7-9 stitches per inch
- Heavier thread fibre is above 150D
- Bite depth at 4mm



### Fabric Construction

#### Microporous film laminate PPSB

- MVTR is above 5000 gsm / 24hr (ASTM E96 BW)
- Hydro-head is above 2000 mm-H<sub>2</sub>O (ISO 811)







## ULTITEC 2000B Comfort Liquid Splash Resistant Coverall

Designed to work in warm environments, brings high breathability through the introduction of a breathable back panel, which offers exceptional comfort without compromising superior protection.



TYPE 5



TYPE 6



EN 1073-2

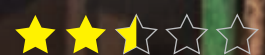


EN 1149-5

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- Combining microporous fabric and SMS fabric into one suit  
Not only provides protection against liquid splash and dust, but also adapts for releasing the body heat. Designed for people working in areas where the risks mainly come towards the front of the body.



## APPLICATION

Agriculture  
Automotive  
Cleaning Process  
Construction  
Electronic Industry  
Food Industry  
Petrochemical  
Pharmaceutical  
Painting  
Steel

Zipper fastens to  
underside of chin



Breathable back panel  
from hood to crotch



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



Color ☐



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	BACK PANEL FABRIC CLASS	MAIN BODY FABRIC CLASS
Abrasion Resistance	EN 530	1	1
Flex Cracking Resistance	ISO 7854	4	5
Trapezoidal Tear Resist.	ISO 9073-4	2	2
Tensile Strength	ISO 13934-1	1	1
Puncture Resistance	EN 863	1	1
Seam Strength	ISO 13935-2	3	3
Resistance to Ignition	EN 13274-4	Pass	Pass
Antistaticity	EN 1149-5	Pass	Pass
pH Value	ISO 3071	Pass	Pass

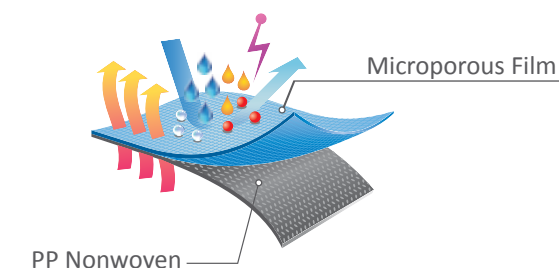
FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION REPELLENCY	PENETRATION REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 5 Inward Leakage Test	Pass
Type 6 Low Level Spray Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 1

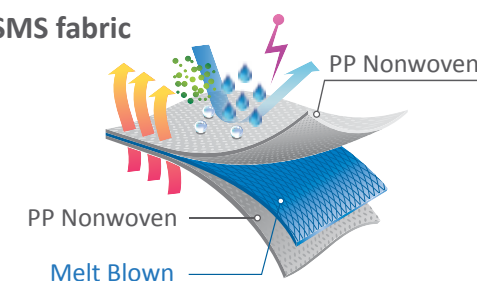
## Fabric Construction

**Front Fabric**  
Microporous film laminate PPSB

- MVTR is above 5000 gsm / 24hr (ASTM E96 BW)
- Hydro-head is above 2000 mm-H<sub>2</sub>O (ISO 811)



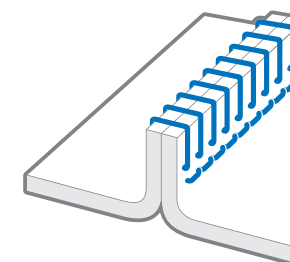
**Back Fabric**  
Multilayer SMS fabric



## Seam Construction

4-thread overlapped seam

- 7-9 stitches per inch
- Heavier thread fibre is above 150D
- Bite depth at 4mm







## ULTITEC 3000T Oil, Chemical & Infective Agent Resistant Coverall

Combining liquid-proof fabric with sealed tape which offers protection level to type 4, provides an excellent barrier to pressurized liquid spray while keeping breathable and comfortable.



TYPE 4-B



TYPE 5-B



TYPE 6-B



EN 1149-5



EN 1073-2



EN 14126



DIN 32781

### Breathability



### Liquid Protection



### Dry Particulate Protection



### FEATURES

- **The premium microporous fabric offers an outstanding barrier against wide range of chemical liquids, blood, body-fluid and infective agents.**  
Fully meets EN368, ASTM F1670 & EN14126. The performance also exceeds both WHO protective clothing specification option 1 & 2 for Ebola infection control. [Note\*]
- **Protective suits against pesticides**  
Meets DIN 32781 requirement on both protection and comfort in agriculture application.
- **Breathable & comfortable**  
Fabric allows water-vapour transmission, which offers breathability to keep the wearer comfortable.
- **Low linting**  
Reduces the risk of fiber contamination to the work environment.
- **Sealed seam**  
All seam are covered by liquid-proof tape to make sure no seepage.

Note\*: The WHO recommended specification for coveralls against filovirus disease issued in Oct, 2014 stated that healthcare workers should choose appropriate protective apparel, which meets the following two requirements:  
option 1, tested for resistance to blood and body fluid penetration: meets or exceeds ISO 16603 class 3 exposure pressure  
option 2, tested for resistance to blood-borne pathogen penetration; meets or exceeds ISO 16604 class 2 exposure pressure.



## APPLICATION

Agriculture  
Automotive  
Biological Hazards  
Chemical Plants  
Disaster Management  
Petrochemical  
Pharmaceutical  
Painting

Zipper fastens to underside of chin



3-piece hood



Storm flap with adhesive tape



Elasticated wrists



Fully elasticated waist



Ample crotch



Elasticated ankles



Color 



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	2
Flex Cracking Resistance	ISO 7854	5
Trapezoidal Tear Resist.	ISO 9073-4	1
Tensile Strength	ISO 13934-1	1
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
Burst Resistance	ISO 13938-1	3
Antistaticity	EN 1149-5	Pass
pH Value	ISO 3071	Pass
Resistance to Ignition	EN 13274-4	Pass
Resistance to Water Penetration	EN 20811	> 2500 mm
Water Vapour Resistance [Ret]	ISO 11092	31.7 m <sup>2</sup> *Pa/W

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	EN 368	Class 3	Class 3
Sodium Hydroxide 10%	EN 368	Class 3	Class 3
Isopropanol	EN 368	Class 3	Class 2

AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	2
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

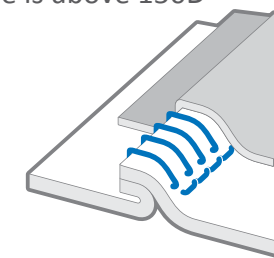
RESISTANCE TO PENETRATION BY PESTICIDES ACCORDING TO EN 14786	Sample 1	Sample 2	Sample 3	Sample 4
Betanal Expert	N.D	N.D	N.D	N.D
Folicur	N.D	0.22	N.D	N.D
Amistar	N.D	N.D	N.D	N.D
Pinimor Granulat	N.D	N.D	N.D	N.D
U46-D-Fluid	N.D	N.D	N.D	N.D

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 4 Spray Test	Pass
Type 5 Inward Leakage Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 2

## Seam Construction

4-thread overlapped seam with liquid-proof tape

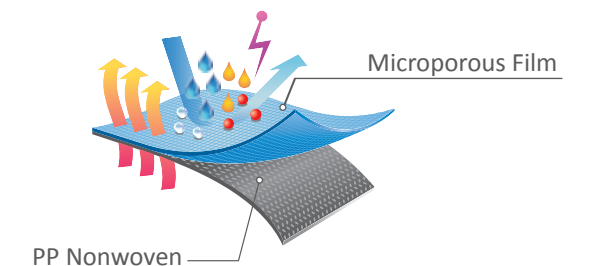
- 7-9 stitches per inch
- Heavier thread fibre is above 150D
- Bite depth at 4mm



## Fabric Construction

Microporous film laminate PPSB

- MVTR is above 5000 gsm / 24hr (ASTM E96 BW)
- Hydro-head is above 2000 mm-H<sub>2</sub>O (ISO 811)





**ULTIMATEC**

*Chemical  
Protection*



*GO! AND BE FEARLESS*

**ULTIMATEC**  
4000

**ULTIMATEC**  
I5000





## ULTITEC 4000 Chemical & Liquid Jet Resistant Coverall

Fully liquid-proof coverall provides an effective shield against various chemicals, liquid jets, infective agents and leaking fuel.



TYPE3-B



TYPE4-B



TYPE 5-B



EN1149-5



EN 1073-2



EN 14126

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- **Excellent protection against wide range of hazards**  
The special impervious fabric meets the highest requirement of EN14126 biological test. All seams are sealed by chemical proof tapes, which reaches protection level type 3 and provides an effective barrier against directional liquid jets, various chemicals, and biological hazards.
- **Sealed design offers optimum protection**  
Well-designed hood fits respirator perfectly, double layer storm flaps ensure liquid tight seal for the zipper, and the bright yellow fabric offers high visibility. These designs provide excellent protection when working under dangerous and dark environments.
- **Lightweight & durable**  
The fabric is lightweight and strong. It provides comfortable wearing experiences and allows the wearer to work efficiently.



## APPLICATION

Biological Hazards  
Chemical Handling  
Decontamination  
Disaster Management  
Disease Control  
Tank Cleaning  
Petrochemical

Extra chinstrap



3-piece hood



Double layer storm flaps



Elasticated wrists with finger loop



Elasticated ankles



Color  



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	2
Flex Cracking Resistance	ISO 7854	1
Trapezoidal Tear Resist.	ISO 9073-4	3
Tensile Strength	ISO 13934-1	2
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
AZO Dyes	EN 14362-1	Pass
Antistaticity	EN 1149-5	Pass
pH Value	EN 1413	Pass

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3
o-Xylene	ISO 6530	Class 3	Class 2
Butan-1-ol	ISO 6530	Class 3	Class 2

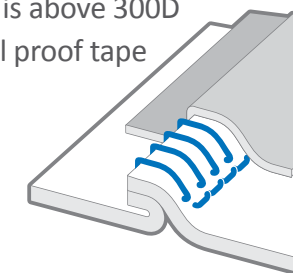
AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	6
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 3 Jet Test	Pass
Type 4 Spray Test	Pass
Type 5 Inward Leakage Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 1

### Seam Construction

4-thread overlocked seam with chemical liquid-proof tape

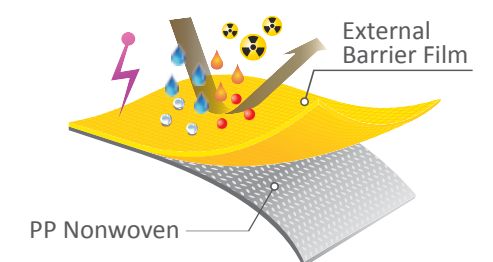
- 7-9 stitches per inch
- Heavier thread fibre is above 300D
- Compatible chemical proof tape



### Fabric Construction

Impervious PE coated fabric

- Light weight and liquid splash protection
- Unique coated film fabric provides excellent chemical and biohazard resistance





CHEMICAL RESISTANCE ACCESSORIES (Type PB[4])

Hood



- Disposable shoulder length hood with elasticated face opening
- Neoprene rubber (latex free)

Lab Coat



- Disposable lab coat with collar
- Neoprene rubber (latex free)

Apron



- Disposable apron with neck loop
- Rear tie fastener

Sleeve Cover



- Disposable sleeve cover with elasticated opening at each end
- Neoprene rubber (latex free)

Shoe cover/Shoe cover with sole



- Disposable shoe cover with elasticated opening
- Anti-slip PVC sole design is optional
- Neoprene rubber (latex free)

Boot cover/Boot cover with sole



- Disposable boot cover with elasticated opening and ankle
- Anti-slip PVC sole design is optional
- Neoprene rubber (latex free)

PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	2
Flex Cracking Resistance	ISO 7854	1
Trapezoidal Tear Resist.	ISO 9073-4	3
Tensile Strength	ISO 13934-1	2
Puncture Resistance	EN 863	1
Seam Strength	ISO 13935-2	3
AZO Dyes	EN 14362-1	Pass
Antistaticity	EN 1149-5	Pass
pH Value	EN 1413	Pass

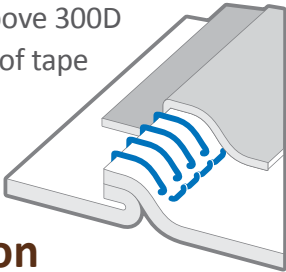
FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3
o-Xylene	ISO 6530	Class 3	Class 2
Butan-1-ol	ISO 6530	Class 3	Class 2

AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	6
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

Seam Construction

4-thread overlocked seam with chemical liquid-proof tape

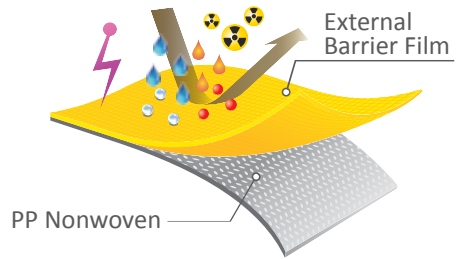
- 7-9 stitched per inch
- Heavier thread fibre is above 300D
- Compatible chemical proof tape



Fabric Construction

Impervious PE coating fabric

- Light weight and liquid splash protection.
- Unique coating film fabric provides excellent chemical and biohazard resistance.







## ULTITEC 5000 High-level Chemical & Liquid Jet Resistant Coverall

This super robust protective coverall is made by sophisticated fabric with all seams covered by compatible chemical proof tape. The coverall affords excellent protection in extremely hazardous conditions.



TYPE3-B



TYPE4-B



TYPE 5-B



EN1149-5



EN 1073-2



EN 14126

### Breathability



### Liquid Protection



### Dry Particulate Protection



## FEATURES

- **High-level chemical hazards protection for type 3**  
Manufactured from an advanced multilayer composite fabric and compatible chemical-proof tape, ULITITEC 5000 provides exceptional barrier against directional liquid jets, and wide range of both organic and inorganic toxic chemicals.
- **Sealed design offers optimum protection**  
Well-designed hood fits respirator perfectly, double layer storm flaps ensure liquid tight seal for the zipper. These designs provide excellent protection when working under extremely hazardous environments.



## APPLICATION

Chemical Handling  
Decontamination  
Disaster Management  
Petrochemical  
Tank Cleaning  
Oil Refinery



Extra chinstrap



3-piece hood



Double layer storm flaps



Elasticated wrists with finger loop



Elasticated ankles



Color



## PERFORMANCE CHART

FABRIC PHYSICAL PROPERTIES	TEST METHOD	CLASS
Abrasion Resistance	EN 530	6
Flex Cracking Resistance	ISO 7854	1
Trapezoidal Tear Resist.	ISO 9073-4	4
Tensile Strength	ISO 13934-1	3
Puncture Resistance	EN 863	2
Seam Strength	ISO 13935-2	4
Antistaticity	EN 1149-5	Pass
pH Value	ISO 3071	Pass

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Sulphuric acid 30%	ISO 6530	Class 3	Class 3
Sodium Hydroxide 10%	ISO 6530	Class 3	Class 3
o-Xylene	ISO 6530	Class 3	Class 3
Butan-1-ol	ISO 6530	Class 3	Class 3

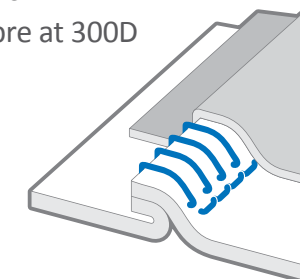
AGAINST INFECTIVE AGENTS with EN 14126	TEST METHOD	CLASS
Resistance to penetration by blood / fluids	ISO 16603	6
Resistance to penetration by blood borne	ISO 16604	6
Resistance to wet bacterial penetration	ISO 22610	6
Resistance to biologically contaminated aerosol	ISO 22611	3
Resistance to dry microbial penetration	ISO 22612	3

WHOLE SUIT TEST PERFORMANCE	RESULT
Type 3 Jet Test	Pass
Type 4 Spray Test	Pass
Type 5 Inward Leakage Test	Pass
EN 1073-2 Protective Clothing Against Radioactive Contamination	Class 1

### Seam Construction

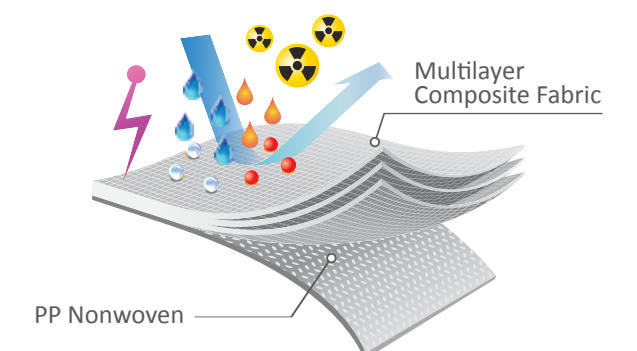
4-thread overlapped seam with chemical liquid-proof tape

- 7-9 stitched per inch
- Heavier thread fibre at 300D
- Bite depth 4 mm



### Fabric Construction

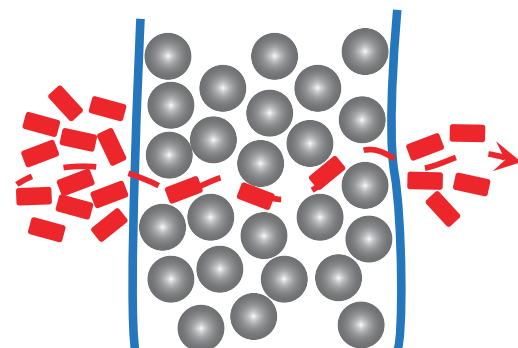
Multilayer Composite Film





## WHAT IS PERMEATION?

Permeation is the process when a potential hazard chemical passes through a material on a molecular diffusion. Although there aren't any holes visible to naked eyes, there are still possibilities for chemical molecules to permeate through the fabric.



### Chemical Permeation Test Method

EU has recommended the following test methods:

1. EN 374-3: 2003 record the lowest BT and specifies a normalized permeation rate of 1.0 µg / cm<sup>2</sup> / min.
2. ISO 6529: 2001 (method A and B) specifies the mean BT to be reported at the normalized permeation rate of 1.0 µg/cm<sup>2</sup>/min or 0.1 µg/ cm<sup>2</sup> / min.

### Test Result of Chemical Permeation Resistance

There are two crucial parameters on the technical data sheet, PR and BT. They help us to classify the protection level of the sample fabric.

**Permeation rate (PR)** indicates the mass of the chemical in micrograms, which can be transferred through µg/cm<sup>2</sup>/min.

**Breakthrough time (BT)** is the elapsed time between first exposure of the fabric to chemical and the rate of permeation reaching a target value. When measured according to a standard method, the performance of the breakthrough time is a value by which different fabrics can be equitably compared.

### Performance Classified by EN 14325

In Europe standard (as specified in EN 14325:2004) the result is classified into 6 classes based on the normalized breakthrough time(BT) is recorded at the permeation rate of 1.0µg/cm<sup>2</sup>/min.

Measured BT	CLASS
> 10 mins.	Class 1
> 30 mins.	Class 2
> 60 mins.	Class 3
> 120 mins.	Class 4
> 240 mins.	Class 5
> 480 mins.	Class 6

## CHEMICAL PERMEATION DATA

CHEMICAL PERMEATION RESISTANCE	PHYSICAL STATE	CAS NO.	ULTITEC 4000		ULTITEC 5000	
			BREAKTHROUGH TIME	CLASS	BREAKTHROUGH TIME	CLASS
Formaldehyde (10%)	Liquid	50-00-0	>480 mins	Class 6		
Formic Acid (85%)	Liquid	64-18-6	>480 mins	Class 6		
Acetic Acid (80%)	Liquid	64-19-7	14 mins	Class 1		
Acetic Acid (96%)	Liquid	64-19-7	12 mins	Class 1		
Methanol	Vapor	67-56-1	>480 mins	Class 6		
Methanol	Liquid	67-56-1	imm.	--	>480 mins	Class 6
Acetone	Liquid	67-64-1	imm.	--	>480 mins	Class 6
Dimethyl Formamide	Liquid	68-12-2	>480 mins	Class 6	>480 mins	Class 6
Methyl chloride	Vapor	74-87-3			>480 mins	Class 6
Acetonitrile	Liquid	75-05-8	imm.	--	>480 mins	Class 6
Dichloromethane	Liquid	75-09-2	imm.	--	>480 mins	Class 6
Carbon disulfide	Liquid	75-15-0	imm.	--	>480 mins	Class 6
Ethylene oxide (gaseous)	Vapor	75-21-8			>480 mins	Class 6
Nitro benzene	Liquid	98-95-3			>480 mins	Class 6
Butadiene, 1,3- (gaseous)	Vapor	106-99-0			>480 mins	Class 6
Toluene	Liquid	108-88-3	imm.	--	>20 mins	Class 1
Diethylamine	Liquid	109-89-7	imm.	--		
Tetrahydrofuran	Liquid	109-99-9	imm.	--	>40 mins	Class 2
n-haxane	Liquid	110-54-3	imm.	--	>480 mins	Class 6
Dimethyl amine	Vapor	124-40-3			>10 mins	Class 1
Tetrachloroethylene	Liquid	127-18-4			>480 mins	Class 6
Ethyl Acetate	Liquid	141-78-6	imm.	--	>480 mins	Class 6
Potassium Hydroxide (50%)	Liquid	1310-58-3	>480 mins	Class 6		
Sodium Hydroxide (40%)	Liquid	1310-73-2	>480 mins	Class 6		
Sodium Hydroxide (42%)	Liquid	1310-73-2			>480 mins	Class 6
Perchloric Acid (70%)	Liquid	7601-90-3	>480 mins	Class 6		
Hydrogen Chloride (37%)	Liquid	7647-01-0	53 mins	Class 2		
Hydrogen chloride (gaseous)	Vapor	7647-01-0			>480 mins	Class 6
Hydrofluoric acid (37%)	Liquid	7664-39-3	15 mins	Class 1		
Ammonia (30%)	Liquid	7664-41-7	14 mins	Class 1		
Ammonia (gaseous)	Vapor	7664-41-7			>480 mins	Class 6
Sulphuric Acid (96%)	Liquid	7664-93-9	>480 mins	Class 6	>480 mins	Class 6
Sulphuric Acid (98%)	Liquid	7664-93-9	>480 mins	Class 6		
Nitric Acid (65%)	Liquid	7697-37-2	273 mins	Class 5		
Chromic Acid (80%)	Liquid	7738-94-5	>480 mins	Class 6		
Chlorine (gaseous)	Vapor	7782-50-5			>480 mins	Class 6
Potassium Chromate (5%)	Liquid	7789-00-6	>480 mins	Class 6		

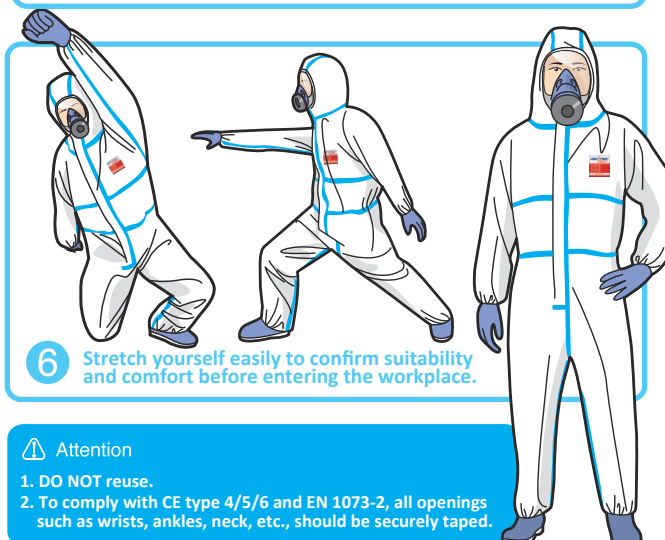
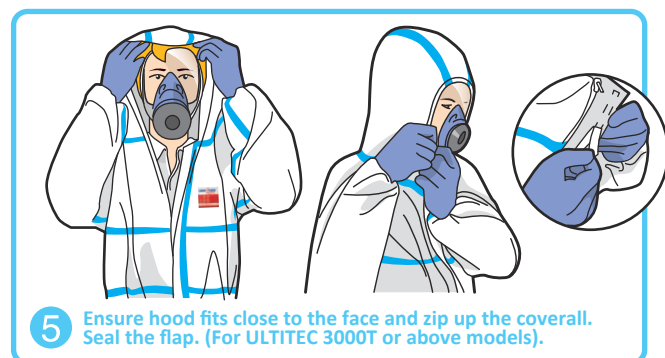
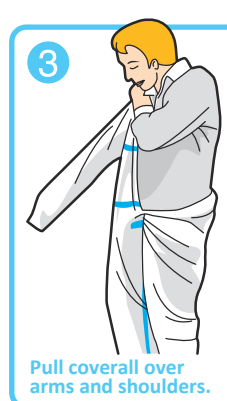
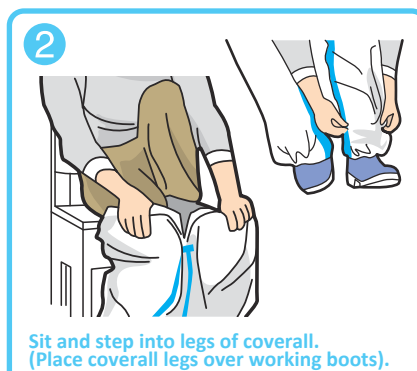
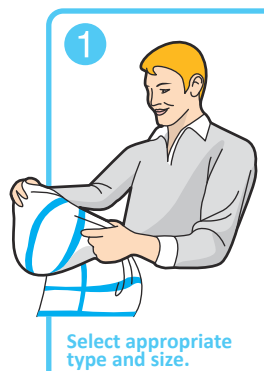
#### Important Notice:

Breakthrough time comes from the laboratory test result. Safe wearing time may be longer or shorter depending on some other conditions, including toxicity, exposure situations, and concentration of the substance. The user shall be responsible for determining how long the garment can be worn.

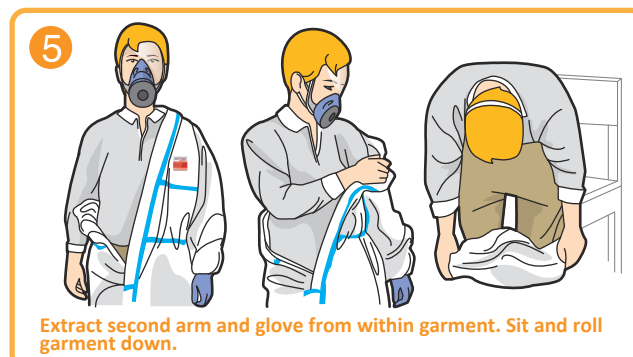
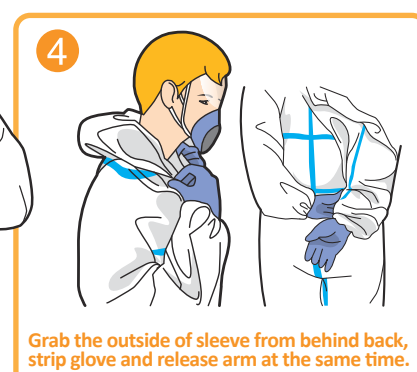
**Please contact us for update chemical permeation resistance list.**



## ULTITEC Coverall Donning Instruction



## ULTITEC Coverall Doffing Instruction



## STORAGE

- Store in dry, clean conditions in original packaging.
- Store away from direct sunlight, sources of high temperature, and solvent vapors.
- Store within the temperature range 15°C to +25°C (58°F to 78°F) and with relative humidity below 80%.
- Shelf life is 60 months from date of manufacture when stored as stated above.
- The antistatic property may reduce over time.
- The user must ensure the antistatic performance is sufficient for the application.

## DISPOSAL

- ULTITEC products do not contain any halogenated compounds, and therefore may be incinerated or buried in a controlled landfill.
- Contaminated garments should however be disposed of in the same manner as contaminated waste, and always in accordance with national regulations.
- Uncontaminated garments can also be recycled. All disposal should follow the relevant national policy in case of confusion.

## LIMITATIONS

- In contact with heavy oils, sparks or flames, or combustible liquids.
- In environments with high mechanical risks (such as: abrasions, tears, cuts).
- In environments with exposure to hazardous substances beyond the CE certification relating to the specific ULTITEC coverall chosen.
- In environments with conditions of excessive heat.
- Washing and laundering will impact the performance of the materials. Therefore, laundering is not recommended for ULTITEC products.