

Technical Data Sheet

- Product Name:** ULTITEC 4000 coverall
- Description:** Disposable anti-static coverall with hood
- Product Code:** DD61T
- Material:** Suit: High performance external barrier film coated to non-woven fabric
 Zipper: Nylon on polyester braid
 Elastic: Neoprene rubber (latex free)
 Thread: Polyester
 Tape: Multi-layer composite barrier tape
 Basic Weight: 83gsm
- Color:** Yellow
- Approvals:** CE approved under PPE Directive (89/686/EEC), Category III
 Article 10 Certification: SGS United Kingdom, LTD. Notified Body Number: 0120.
 Article 11B Supervision: SGS United Kingdom, LTD. Notified Body Number: 0120
- Applications:** Biological Hazards, Disaster Management, Oil Refining/ Exploration, Chemical Handling, Hazardous Material, Petrochemical, Decontamination, Industrial Clean up, Sewage Purification Installation, Disease, Oil Handling/ Tank Cleaning, Utilities
- Sizing:** An appropriate size garment should be selected to allow sufficient movement for the task. Meet EN340 size guideline.



SIZE	CHEST		HEIGHT	
S	84 - 92 cms	33"-36"	162 - 170 cms	5'4"-5'6"
M	92 - 100 cms	36"-39"	170 - 176 cms	5'6"-5'9"
L	100 - 108 cms	39"-42"	176 - 182 cms	5'9"-6'0"
XL	108 - 116 cms	42"-45"	182 - 188 cms	6'0"-6'2"
XXL	116 - 124 cms	45"-48"	188 - 194 cms	6'2"-6'4"
XXXL	special larger sizes to order			

- Performance:**
 The table below shows the performance of this product when tested under laboratory conditions. Please note that the tests may not reflect the reality of use and do not account for factors such as excessive heat and mechanical wear.

FABRIC PHYSICAL PROPERTIES	TEST METHOD	RESULT	CLASS
Abrasion Resistance	EN530	>100 cycles*	Class 2
Flex Cracking Resistance	ISO 7854 B	>1,000cycles*	Class 1
Trapezoidal Tear Resist.	MD ISO 9073-4	>40N	Class 3
	CD	>40N	
Tensile Strength	MD ISO 13934-1	>100N	Class 2
	CD	>60N	
Resistance to Ignition	EN13274-4		Pass
Puncture Resistance	EN863	>5N **	Class 1
Seam Strength	ISO 13935-2	>75N	Class 3
Antistaticity	EN1149-5		Pass
pH Value	EN ISO 3071		Pass
AZO Dyes	EN 14362-1		Pass

Note * denotes visual endpoint Note ** exclusion: EN ISO 1073-2:2002 clause 4.2 requires class 2

FABRIC CHEMICAL PROPERTIES	TEST METHOD	PENETRATION	REPELLENCY
Resistance to Chemical Penetration	EN 6530		
Sulphuric Acid 30%		Class 3	Class 3
Sodium Hydroxide 10%		Class 3	Class 3
o-Xylene		Class 3	Class 2
Butan-1-ol		Class 3	Class 2

WHOLE SUIT TEST PERFORMANCE		RESULT
Type 3	Jet test	Pass
method defined by EN ISO 17491-3:2008		
Type 4	Spray Test	Pass
method defined by EN ISO 17491-4:2008 Method:B		
Type 5	Inward Leakage Test	Pass
method defined by EN ISO 13982-2:2004		
Protective clothing against radioactive materials as defined by EN1073-2:2002		Class 1
Performance of protective clothing against infective agents EN14126:2003		
ISO 16603:2004	ISO 16604:2004	ISO 22611:2003
Class 6	Class 6	Class 3
		ISO 22612:2005
		Class 3
		ISO 22610:2006
		Class 6

Technical Data Sheet

What is Permeation

Permeation is the process by which a potentially hazardous chemical moves through a material on a molecular level. Molecules of chemical absorb into the outer surface of the material. They then diffuse across the material and are released or desorbed from the inner surface.

Permeation Test Method

1. ASTM F739 specifies results to be recorded as breakthrough time (BT) at $0.1\mu\text{g}/\text{cm}^2/\text{min}$.
2. EN 374-3: 2003 record the lowest BT and specifies a normalised permeation rate of $1.0\mu\text{g}/\text{cm}^2/\text{min}$
3. ISO 6529: 2001 (method A and B) specifies the mean BT to be reported at the normalised permeation rate of $1.0\mu\text{g}/\text{cm}^2/\text{min}$ or $0.1\mu\text{g}/\text{cm}^2/\text{min}$.

Permeation Rate (PR)

A permeation rate indicates the mass of the chemical in micrograms, which can be transferred through one square centimetre of the fabric in one minute.

Breakthrough Detection Time (BDT)

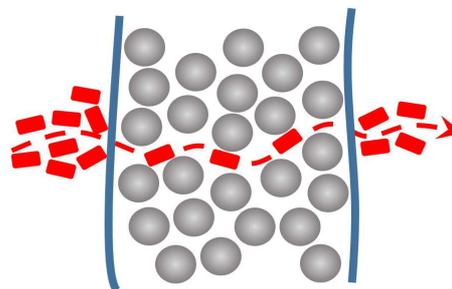
The breakthrough detection time is the time elapsed between initial contact of the chemical with the outside surface of the protective clothing fabric and its detection at the inside surface. Actual breakthrough has taken place when the minimum detectable permeation rate has been reached. A breakthrough detection time of more than 480 minutes indicates that the challenge chemical did not reach the minimum detectable permeation rate during the test time of 480 minutes.

Breakthrough Time (BT)

This is the average time between initial contact of the chemical with the outside surface of the fabric and the time at which the chemical is detected at the inside surface of the fabric at the permeation rate specified by the appropriate standard.

Performance Classed by EN 14325

In Europe standard (as specified in EN 14325:2004) either EN374-3 : 2003 or EN ISO 6529 : 2001 can be used for permeation testing. Chemical protective clothing is classified into six classes based on the normalised breakthrough time is recorded at the permeation rate of $1.0\mu\text{g}/\text{cm}^2/\text{min}$.



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

Permeation Data

CHEMICAL PERMEATION RESISTANCE	PHYSICAL STATE	CAS NO.	BREAKTHROUGH TIME	CLASS
Acetic Acid (80%)	Liquid	64-19-7	14 mins	Class 1
Acetic Acid (96%)	Liquid	64-19-7	12 min	Class 1
Acetone	Liquid	67-64-1	imm.	--
Acetonitrile	Liquid	75-05-8	imm.	--
Carbon disulfide	Liquid	75-15-0	imm.	--
Chromic Acid (80%)	Liquid	7738-94-5	>480 mins	Class 6
Dichloromethane	Liquid	75-09-2	imm.	--
Diethylamine	Liquid	109-89-7	imm.	--
Dimethyl Formamide	Liquid	68-12-2	>480 mins	Class 6
Ethyl Acetate	Liquid	141-78-6	imm.	--
Formaldehyde (10%)	Liquid	50-00-0	>480 mins	Class 6
Methanol	Vapor	67-56-1	>480 mins	Class 6
Methanol	Liquid	67-56-1	imm.	--
n-haxane	Liquid	110-54-3	imm.	--
Nitric Acid (65%)	Liquid	7697-37-2	273 mins	Class 5
Perchloric Acid (70%)	Liquid	7601-90-3	>480 mins	Class 6
Potassium Chromate (5%)	Liquid	7789-00-6	>480 mins	Class 6
Sodium Hydroxide (40%)	Liquid	1310-73-2	>480 mins	Class 6
Sulphuric Acid (96%)	Liquid	7664-93-9	>480 mins	Class 6
Sulphuric Acid (98%)	Liquid	7664-93-9	>480 mins	Class 6
Tetrahydrofuran	Liquid	109-99-9	imm.	--
Toluene	Liquid	108-88-3	imm.	--
Formic Acid (85%)	Liquid	64-18-6	>480 min	Class 6
Potassium Hydroxide (50%)	Liquid	1310-58-3	>480 min	Class 6
Hydrogen Chloride (37%)	Liquid	7647-01-0	53 min	Class 2
Ammonia (30%)	Liquid	7664-41-7	14 min	Class 1

Technical Data Sheet

Referenced Standards:

Attribute	Standard	Title
General Requirements	EN 14325	Protective clothing against chemicals. Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages.
General Requirements	EN14605	Protective clothing against saturation of liquid chemical, where volume of the liquid builds up on the suit forming pools, resulting in rivulets. Requires a barrier fabric (chemical tests to EN369 Permeation test) and sealed seams.
General Requirements	EN ISO 13982-1	Protective clothing for use against solid particulates. Performance requirements for chemical protective clothing providing protection to the full body against airborne solid particulates (type 5 clothing).
General Requirements	EN 13034	Protective clothing against liquid chemicals. Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (type 6 and type PB [6] equipment).
Abrasion Resistance	EN 530	Abrasion resistance of protective clothing material.
Flex Cracking Resistance	ISO 7854 (Method B)	Rubber- or plastics-coated fabrics. Determination of resistance to damage by flexing.
Trapezoidal Tear Resistance	ISO 9073-4	Textiles. Test methods for nonwovens. Determination of tear resistance.
Tensile Strength	ISO 13934-1	Textiles. Tensile force.
Puncture Resistance	EN 863	Protective clothing. Mechanical properties. Test method: puncture resistance.
Repellence to Liquids	EN 6530	Protective clothing. Protection against liquid chemicals. Test method: resistance of materials to penetration by liquids.
Resistance to Penetration by Liquids	EN 6530	Protective clothing. Protection against liquid chemicals. Test method: resistance of materials to penetration by liquids.
Inward Leakage of Aerosols of Fine Particles	EN ISO 13982-2	Protective clothing for use against solid particulates. Test method: determination of inward leakage of aerosols of fine particles into suits.
Resistance to Penetration by Spray	EN 17491-4 Method:B	Protective clothing for use against liquid chemicals. Test method: determination of resistance to penetration by spray (Spray Test).
Resistance to Penetration by Spray	EN 17491-3	Protective clothing. Test methods for clothing providing protection against chemicals. Determination of resistance to penetration by a jet of liquid (jet test)
Resistance to Ignition	EN 13274-4 (Method 3)	Protective clothing. Personal protective ensembles for use against chemical, biological, radiological and nuclear (CBRN) agents. Categorization, performance requirements and test methods.
Seam Strength	ISO 13935-2	Textiles. Seam tensile properties of fabrics and made-up textile articles. Determination of maximum force to seam rupture using the grab method.
Surface Resistivity	EN 1149-5	Protective clothing – Electrostatic properties – electrostatic dissipative protective clothing with a charge decay.

Use Limitations:

- Do not use for:
- Contact with heavy oils, sparks or flames, or combustible liquids
 - Exposure situations resulting in spray or liquid buildup on the suit
 - Environments with high mechanical risks (abrasions, tears, cuts)
 - Environments with exposure to hazardous substances beyond CE Type 1/2 certification
 - Environments with conditions of excessive heat

Storage and Disposal:

- 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.
- Replace garments if damaged, heavily contaminated or in accordance with local work practice.
- Electrostatic properties may be decay by wear, tear, contamination and time. Double check before use the garment.
- Handle and dispose of contaminated garments with care and in accordance with national regulations.

Do not wash

Do not clean dry

Flammable

Do not iron

Do not tumble dry

Packing:

- 1 piece per sealed PE bag
- 12 pieces per carton