

# MicroMax®



**Tougher fabric for more demanding applications**



Standard microporous film laminate features a single microporous PE film laminated to a spunbond PP layer.



MicroMax® features an additional scrim between the layers to add strength and durability, making a tougher product than other fabrics of this type for more demanding applications.

Unique microporous film laminate with “rip-stop” scrim between layers for added strength and durability.

- Addition of unique scrim results in highest tear strength in its class – tougher and more durable for more demanding environments.
- Stitched and bound exterior seams to enhance strength and particle filtration at seams.
- Soft and flexible high quality microporous film laminate offers excellent combination of protection and comfort.
- High moisture vapour transmission rate allows escape of vapour to maintain comfort.
- Fabric passes all tests in EN 14126 infectious agent standard. However, we recommend only garments featuring sealed seams such as MicroMax® TS should be used for biological hazards.
- Non-linting film surface combined with taped seams makes MicroMax® ideal for many clean room applications.
- Lakeland “Super-B” ergonomic styling – unique combination of three design elements to optimise fit, durability and freedom of movement.
- Three piece hood for rounder head shape and greater comfort.
- Inset sleeves – torso shaped to body to maximise freedom of movement and negate the need for thumbloops.
- Two piece crotch gusset – enhances freedom of movement and reduced crotch splitting.

### Physical Properties

Property	EN Std	MicroMax®				
		NS/TS	CE Class	CE Class	SafeGard® GP	SafeGard® 76
Abrasion Resistance	EN 530	3	2	3	6	2
Flex Cracking	ISO 7854	6	6	6	6	6
Trapezoidal Tear	ISO 9073	3/2	4/2	3	3/2	1
Tensile Strength	EN 13934	2/1	2	3	2/1	1
Puncture Resistance	EN 863	1	1	1	1	2
Burst Strength	EN 13938	2	3	2	3	2
Seam Strength	EN 13935-2	3	3	3	3	3

### Chemical Repellency and Penetration EN 6530

Chemical	MicroMax® NS/TS		MicroMax®		SafeGard® GP		SafeGard® 76		Flashspun PE	
	R	P	R	P	R	P	R	P	R	P
Sulphuric Acid 30% CAS No. 67-64-1	3	3	3	3	3	3	3	3	3	3
Sodium Hydroxide CAS No. 1310-73-2	3	3	3	3	3	3	3	3	3	3
O-Xylene CAS No. 75-15-0	3	2	3	2	NT	NT	NT	NT	1	1
Butanol CAS No. 75-09-2	3	2	3	2	NT	NT	NT	NT	2	1

### Breathability - measured by air permeability and moisture vapour transmission rate (MVTR)

	MicroMax® NS/TS	MicroMax®	SafeGard® GP	SafeGard® 76	Flashspun PE	Cotton T-shirt
Air permeability cubic feet/minute (cfm)	<0.5	<0.5	40	40	~3.3	180
MVTR	119.3	NT	NT	NT	111.2	NT

### Infectious Agent / Biological Hazard Protection

Tested according to EN 14126. This consists of four different tests to assess protection against different forms of classification. Note these tests are on fabric only. We would always recommend a garment with sealed seams such as MicroMax® TS for protection against infectious agent hazards.

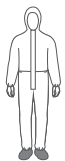
Test Description	Test No.	MicroMax® NS/TS	SafeGard® GP/76	Flashspun PE
Protection against blood and body fluids	ISO 16604:2004	6 (max is 6)	Not recommended	<1
Protection against biologically contaminated aerosols	ISO 22611:2003	3 (max is 3)	Not recommended	1
Protection against dry microbial contact	ISO 22612:2005	3 (max is 3)	Not recommended	1
Protection against mechanical contact with substances containing contaminated liquids	EN 14126:2003 Annex A	6 (max is 6)	Not recommended	1

## MicroMax® Styles



**Style code 428**  
Coverall with elasticated hood, cuffs, waist & ankles.

Sizes: S - XXXL



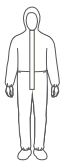
**Style code L428**  
Coverall with elasticated hood, cuffs with thumb loops, waist & ankles.

Sizes: S - XXXL



**Style code 414**  
Coverall with elasticated hood, cuffs, waist and attached socks.

Sizes: S - XXXL



**Style code L414**  
Coverall with elasticated hood, cuffs with thumb loops, waist, ankles and attached socks.

Sizes: S - XXXL



Available in: White





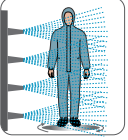
Not all styles are available from European stock in this fabric. Please contact our sales office for information on stock items.

**Warning:** whilst the MicroMax® fabric is tested against penetration of infectious agents and certified to EN 14126, we do not recommend garments with stitched seams to be used against biological hazards. Sealed seam garments, such as MicroMax® TS should be used.




# Clothing For Protection against Type 5 and 6 Hazards

## Essential Guide to Garment Selection

There are many different brands of Type 5 & 6 coveralls in the market - yet there are only three essential types of fabrics used to make them. So which fabric is the best choice? That depends on the application and the balance to be achieved between protection, comfort and durability.

 <p><b>Type 5</b> <b>EN 13982</b> protection against hazardous dry particles</p>	 <p><b>EN 1073-2</b> protection against dust contaminated with radiation</p>	 <p><b>Type 6</b> <b>EN 13034</b> protection against reduced/light liquid sprays and splashes</p>
<p><b>Type 5 - Hazardous Dry Particles</b></p> <ul style="list-style-type: none"> <li>- Spray cabin filled with dust</li> <li>- Subject performs exercise on treadmill</li> <li>- 3 particle counters <i>inside</i> the suit</li> <li>- Particle "Inward leakage" calculated</li> <li>- Recorded as % of inward leakage (TIL)</li> </ul> 	<p><b>EN 1073-2</b></p> <p>testing is a variation of the standard Type 5 test.</p>	<p><b>Type 6 - Reduced Liquid (aerosol) Spray</b></p> <ul style="list-style-type: none"> <li>- Four nozzles - aerosol spray of liquid</li> <li>- Subject rotates on turntable</li> <li>- Inside absorbent suit checked for penetration</li> <li>- Pass or Fail according to test criteria</li> </ul> 

Three types of fabric are used to make all Type 5 & 6 garments on the market.

 <p>Flashspun Polyethylene (FSPE)</p>	 <p>SMS - Spunbond-Meltblown-Spunbond <b>Lakeland SafeGard™</b></p>	 <p>Microporous Film Laminate (MPFL) <b>Lakeland MicroMax®</b></p>
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All Type 5 & 6 garments on the market are one of these or variations of these.

## How do these fabrics compare? Three important factors can be considered:

<p><b>1. Liquid Protection</b></p>	<p>Type 6 CE testing includes liquid repellency and penetration tests against four chemicals. In two of the four chemicals, Lakeland MicroMax® options achieve superior results than the closest alternative.</p>	<p>CE testing for Infectious Agents to EN 14126 includes tests against four types of contamination. In all four tests MicroMax® options achieve superior results and the highest class compared to the FSPE alternative, which is unclassified in the critical ISO 16604 test.</p>
<p><b>2. Physical Properties</b></p>	<p>Testing as part of CE certification allows comparison of strength properties: abrasion - tensile strength - trapezoidal tear etc. In comparisons of the three fabric types Lakeland SafeGard™ or MicroMax® options offer a superior choice compared to the alternative FSPE option in most cases.</p>	
<p><b>3. Comfort and Breathability</b></p>	<p>Comfort is primarily a result of air permeability. Independent testing indicates the difference between MicroMax® and FSPE is minimal and close to zero. Both have very low air permeability. The Lakeland SafeGard™ option has an air permeability over 10 times that of the alternatives and is the superior choice for a comfortable garment.</p>	<p>A common sense approach and simple 'home' tests clearly confirm both the low air-permeability of MicroMax® and FSPE and the superior air-permeability of SafeGard™. <b>Where protection and comfort are required, Lakeland Cool Suit® options provide the best of both MicroMax® and SafeGard™ fabrics and may be the best choice available.</b></p>
<p>Type 5 and 6 garments can be selected on the basis of a combination of three factors:</p> <ol style="list-style-type: none"> <li>1. Protection</li> <li>2. Physical Properties</li> <li>3. Comfort and Breathability</li> </ol>		<p>For all three factors, Lakeland garments provide the best choice ...</p>

Use the QR Code or visit: <https://promo.lakeland.com/europe/guide-to-type-5-and-6-protective-coveralls> to download our complete **Guide to Type 5 & 6 Coverall selection**



\* Competitor brand results are from competitors' own websites and were correct at the time of publication. Users are recommended to check up to date information with competitors before making any assessment based on specific chemicals. Other chemical test results may be available from competitors.