Lakeland

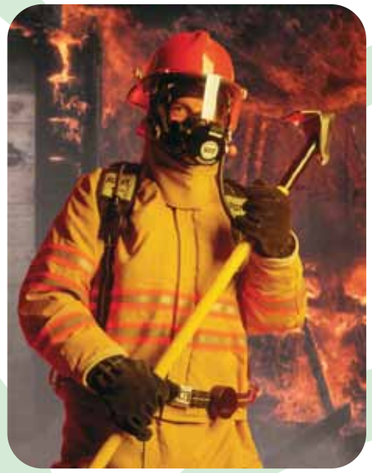
Europe Catalogue 2011-2012

NEW PRODUCTS

... **Interceptor**™ - Type 1
... **Cool Suit® Advance and Advance Plus** - breathable
... **Pyrolon® TPCR** - combined suit
... **Global Premier Range** - World's first range of Limited life clothing

Lakeland Europe

LAKELAND INDUSTRIES EUROPE LTD



Lakeland Industries is one of the largest manufacturers in the world of industrial protective clothing. We make over 600,000 garments per week through a wholly owned, global manufacturing base.

Lakeland now has sales divisions in every major region in the world, with Lakeland Europe handling sales in Europe and the Middle East.

Throughout the Lakeland organisation, quality is factor number one, quality of manufacture, service and quality of product.

... And quality is the reason users world wide increasingly turn to Lakeland as the specified choice of industrial protective clothing.

Lakeland Europe

LAKELAND INDUSTRIES EUROPE LTD

Protective Clothing Standards

Type 1 - Encapsulated suits that are fully sealed and gas-tight
EN 943-1:2002 - Protective Clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles. Performance requirements for ventilated and non-ventilated suits

Type 2 - Encapsulated suits that are not fully sealed but maintain a positive internal pressure through the use of an external air supply. EN 943-1:2002

Type 3 - for clothing with liquid tight seams
EN 14605:2005 - Protective clothing against liquid chemicals. Performance requirements for clothing with liquid and spray tight seams

Type 4 - for clothing with spray tight seams
EN 14605:2005 Protective clothing against liquid chemicals. Performance requirements for clothing with spray tight seams

Type 5 - Protection against Hazardous Dust Particles
EN13982-1:2004 - Protective clothing for use against dry particulates. Performance requirements for protective clothing providing protection for the full body against airborne solid particles.

Type 6 - protection against reduced liquid spray
EN13034:2005 - Protective clothing against liquid chemicals. Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals

Protective Clothing against Contaminated Dusts
EN 1073-2:2002 - Protective Clothing against radiation contaminated dust particles (variation on Type 5 finished garment test)

Protective Clothing against Infective Agents
EN 14126:2003 - Requirements against protective clothing against infective agents (biological contaminants)

Anti-Static Protective Clothing
EN 1149-1: 2004 - Requirements for protective clothing requiring anti-static properties: Surface Resistance ($< 2.5 \times 10^9$ ohms)

Flame and Heat Protective Clothing Standards

EN 14116:2008
Protective clothing against heat and flames: Limited flame spread : materials, assemblies and clothing

EN 11612: 2008
Clothing for protection against heat and flame / flash fire:

EN 11611: 2007
Protective clothing for welding and allied applications

EN 61482-1-2:
Clothing for protection against the thermal hazard of electric arc

Protective Glove Standards

Gloves - Protection against chemicals
EN 374-2 & 3: 2003- Gloves for protection against chemicals. Minimum performance of >10 mins permeation against at least 3 of 12 chemicals labeled A to L

Gloves - Protection against mechanical risks
EN 388: 2003- Gloves for protection against mechanical risks. Includes;- Abrasion Resistance (A) / Blade Cut Resistance (B) / Tear Resistance (C) / Puncture Resistance (D)

Be Safe. Be Sure. Wear Lakeland.

Lakeland Europe

LAKELAND INDUSTRIES EUROPE LTD

European CE Norms

CE

All PPE sold in Europe must carry a CE mark and meet the requirements of relevant standards. Standards relate to protection against different types of hazard.

Lakeland Europe is committed to ensuring all European sold Lakeland branded products meet the latest standards.

The key standards for chemical, flame and heat protective clothing and gloves are listed opposite alongside their relevant pictograms used on garment labels.

CE standards for Category III "Complex" products (ie, products offering protection against hazards that may be life threatening) require full product testing and certification by an external government certified "Notified Body".

United States NFPA & ASTM Standards

Lakeland protective clothing manufactured for the North American market meet the requirements of the National Fire Protection Association (NFPA) and the American Society for Testing & Materials (ASTM) standards and requirements. Some items, such as our Fyrepel® and OSX™ fire fighters suits meet only North American standards *(at the time of printing)*. European CE versions are in development.

STANDARDS

CONTENTS

Safegard™ is Lakelands' range of fully breathable, low cost and comfortable Type 5 & 6 coveralls. Featuring multi-layer, air permeable, soft and flexible spunbonded and meltblown polypropylene, a high level of wearer comfort and cost effective pricing Safegard™ is ideal for entry level, general and especially for Type 5 hazardous dust protection applications.

SAFEGard™ GP Low Cost SMS coverall for Type 5 & 6 applications

PROTECTION TYPES

- Type 5 Dust Protection
- Type 6 Light splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

Available in:

- White
- Blue
- Orange
- Red

- Breathable, comfortable, low cost protection against dusts and liquid splashes

SAFEGard™ 75 Premium Safegard™ product for Type 5 & 6 applications

PROTECTION TYPES

- Type 5 Dust Protection
- Type 6 Light splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

Available in:

- White
- Blue

- Breathable and comfortable, four layer SMMS material
- CPE bound seams for strength and protection
- Tough and durable coverall for more demanding applications

Lakeland's Three Step Guide to selecting the optimum Type 5 & 6 Coverall

Selection of PPE is always a compromise between protection and comfort. The most comfortable garment is the easiest to wear ... but is often not the most protective and may not offer the appropriate protection ... the guide below indicates which is the best compromise to choose:

Safegard™ garments are the most breathable and comfortable - infact SMS materials are the ONLY garments that are truly breathable.
(Try "breathing" through other fabrics if you think otherwise!)

So for the highest comfort level choose Safegard™.

In some applications however, such as where greater volumes of liquids are present, Safegard™ may not offer sufficient protection ...

In which case ...

Microporous film garments offer an excellent liquid repellency suitable for most Type 6 application along with excellent particle barrier for Type 5 areas.

MicroMAX® and MicroMAX® NS offer a choice of toughness or value. Its your choice ...

They have little breathability ... though they do have good MVTR, but thats a different thing ... But if you want comfort AND good liquid protection...?

The MicroMAX® Cool Suit offers both: the protection of MicroMAX® fabric to front, hood, arms and legs ... with the breathable comfort of Safegard™ in a panel covering the back ...

The ideal compromise achieved ... the best of both worlds ...

(and see the new ***Cool Suit Advance*** and ***Advance Plus*** on page 5 ... breathable Type 4 protection)

SafeGard™ Features:

- Two way zip
- Lakeland "superb" pattern... inset sleeves for freedom of movement / 3-piece hood for improved fit / crotch gusset for improved fit and durability
- Good, cost-effective combination of dust and splash protection along with excellent comfort derived from fully breathable fabric

MicroMAX® uses high quality microporous polyethylene film laminate, the industry accepted alternative to more traditional disposable coveralls. With a choice of the NS (No Scrim) version or the superior Scrim-supported material, in which a nylon scrim is laminated between the layers to give MicroMAX® the strongest tear strength in its class, *(see page 17)* Lakeland again offers users both a budget and premium options for the tougher, more demanding applications. MicroMAX® TS offers sealed, taped seams for superior Type 4 and biological protection, whilst the hybrid Cool Suit *(see page 5)* offers the protection of MicroMAX® with the breathability of Safegard™... the Best of Both Worlds...

MicroMAX NS Superior Microporous film laminate coverall for Type 5 & 6 applications

PROTECTION TYPES

- Type 5 Dust Protection
- Type 6 Light splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

MicroMAX® NS also available in green

- Two way stretch film offers improved strength over standard microporous films
- Excellent liquid and dust barrier
- Available in white and green

MicroMAX MicroMAX® fabric with nylon scrim and bound seams for toughness

PROTECTION TYPES

- Type 5 Dust Protection
- Type 6 Light splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

- Nylon scrim between the fabric layers provides the highest tear strength in its class *(see page 17)*
- CPE bound seams offers superior strength and repellency at seams
- Tough and durable coverall... for more demanding Type 5 & 6 applications
- Available in white

MicroMAX TS MicroMAX® NS coverall with fully sealed seams for Type 4 protection

PROTECTION TYPES

- Type 4 Liquid splash Protection
- Type 5 Dust Protection
- Type 6 Light splash Protection
- Protection Against Infective Agents
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

- Barrier film taped seams providing fully sealed seams for Type 4 and biological protection
- Fabric passes all tests in EN14126 (bio protection) in the highest class
- * Seams permeation tested as required by latest Type 3/4 standard
- Available in white

Biological Protection: MicroMAX passes all five tests required by EN14126 for protection against biological contaminants in the highest class. However, this standard fails to specify seam requirements: for obvious reasons Lakeland have elected to certify ONLY MicroMAX TS with fully sealed, taped seams *(see page 17)*.

MicroMAX® Features:

- Two way zip
- Lakeland "superb" pattern... inset sleeves for freedom of movement / 3-piece hood for improved fit / crotch gusset for improved fit and durability
- High quality two-way stretch film with range of product offering excellent choice of protection combined with good levels of comfort

Cool Suit Range

Lakeland lead the market with the MicroMAX® NS Cool Suit, combining the protection of superior MicroMAX® microporous film laminate with the comfort of Safegard® breathable fabric. The Cool Suit is now widely and increasingly used throughout the world and has been copied by several of our competitors. Now Lakeland re-sets the standard once again with the introduction of the Cool Suit Advance and to complete the Cool Suit range the Cool Suit Advance+ ... The world's first truly breathable Type 4 chemical protective coverall

MicroMAX NS Cool Suit

Type 5 & 6 protection ... breathable

The original Cool Suit.
MicroMAX® NS fabric; breathable Safegard® rear panel and tough blue CPE bound seams makes the MicroMAX® NS Cool Suit the best combination available of Type 5 & 6 protection and comfort.

PROTECTION TYPES

- Type 5 Dust Protection
- Type 6 Light splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

MicroMAX TS Cool Suit Advance

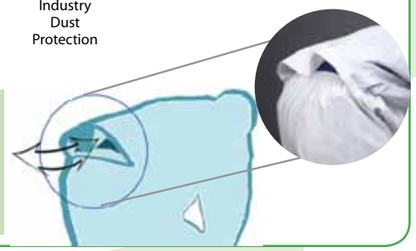
Type 4 protection ... breathable

The new Cool Suit Advance features stitched and taped seams for Type 4 protection along with a unique flap covering the breathable Safegard panel, sealed along the top and sides and open at the bottom thus allowing free circulation of air in and out of the coverall and providing a superior level of comfort.

PROTECTION TYPES

- Type 4 Spray tight Protection
- Type 5 Dust Protection
- Type 6 Light Splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

The "Bellows Effect"is a well known principle that aids the effectiveness of Cool Suit technology. When the wearer moves such as in any walking movement, the air inside a suit shifts around creating micro-changes in air pressure and resulting in air being "sucked" and "blown" through available apertures. In the case of the cool suit this helps air to exchange through the breathable panel and vents and providing the user with a superior level of comfort compared to any other Type 4 garment.



ChemMAX Cool Suit Advance+

Type 4 chemical protection ... breathable

PROTECTION TYPES

- Type 4 Spray tight Protection
- Type 5 Dust Protection
- Type 6 Light splash Protection
- EN1149 Anti-static Clothing
- Nuclear Industry Dust Protection

The latest addition to the Cool Suit is the Advance design constructed using our ChemMAX® 1 fabric and sealed seams. The Cool Suit Advance+ offers Type 4 chemical protection - ChemMAX® 1 fabric provides a permeation barrier to a range of hazardous chemicals - combined with the superior comfort of breathable Cool Suit construction.

NOTE: the Cool Suit Advance has been fully and independently tested under stringent conditions to the Type 4 finished garment standard. However, clearly the breathable back material has a lower level of protection than the main part of the garment so if exposed to the chemical may allow some penetration in certain conditions.

Lightweight Type 3 & 4 protection

Tomtex™ is an extremely lightweight and flexible alternative for Type 3 and 4 applications where general chemical protection is required. Especially suitable for tank cleaning and agricultural spray and dipping applications

TOMTEX™

Lightweight, low cost coverall for Type 3 & 4 applications

PROTECTION TYPES

- Type 3 Liquid Tight Protection
- Type 4 Spray Tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-Static Clothing

- Lightweight and flexible chemical barrier fabric
- Low cost Type 3 & 4 protection
- Double zip & storm flap front fastening
- Fully taped and sealed seams
- Available in pale green colour - ideal for agricultural applications and public areas.

ChemMAX® 1 and 2

For Type 3 & 4 chemical splash and spray protection two elements are critical: the barrier against chemicals; and the seam and zip protection. Unlike competitors ChemMAX® offers a range of four fabrics, each offering an effective barrier against a variety of chemicals. This means customers can select the optimum combination of a fabric that protects against the chemicals required, whilst also selecting the most economical. Seams are all fully stitched and taped with a chemical barrier film tape, and front fastenings feature a double zip and re-sealable storm flap, ChemMAX® offers a wider choice of protection and cost for Type 3 & 4 protection.

ChemMAX 1

Lightweight and flexible cost effective Type 3 & 4 protection

PROTECTION TYPES

- Type 3 Liquid tight Protection
- Type 4 Spray tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-static Clothing
- Protection against Infective Agents

ChemMAX® garments feature unique cushioned kneepads for added protection and comfort.

ChemMAX 2

Mid range coverall with proven chemical barrier and very soft fabric

- Saranex 23P film laminate with good barrier against a broad range of chemicals
- Extremely soft and flexible fabric for excellent comfort properties
- Fully taped and sealed seams
- Double zip and storm flap front fastening
- Cushioned knee pads for comfort and protection
- Available in white

PROTECTION TYPES

- Type 3 Liquid tight Protection
- Type 4 Spray tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-static Clothing
- Protection Against Infective Agents

ChemMAX® is not available in the UK

ChemMAX® Features:

- Choice of fabrics to offer required chemical barrier for application
- Double zip and storm flap, fully sealed seams, cushioned knee-caps
- Lakeland "superb" pattern... Inset sleeves for freedom of movement/3-piece hood for improved fit / crotch gusset for improved fit and durability
- ***A range of highly effective chemical protection combined with soft, flexible fabrics and sealed seams.***

Download latest chemical permeation information or use chemical search database at www.lakeland.com or see page 18 for a comprehensive chemical listing with permeation data.

Multi-layer composite fabric with EVOH film offers high chemical barrier

- High barrier against a wide range of chemicals
- Good fabric softness and flexibility
- Fully taped and sealed seams
- Double zip and storm flap front fastening
- Cushioned knee pads for comfort and protection
- Fabric tested against a range of chemical warfare agents, including mustard, Soman and Sarin
- Available in grey

PROTECTION TYPES

- Type 3 Liquid tight Protection
- Type 4 Spray tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-static Clothing
- Protection Against Infective Agents

ChemMAX® Upgrades offer more comprehensive protection including various additional features and the options of fully encapsulating suits with visors and attached feet and gloves. Upgrade patterns can also be made in any other fabrics.

3 PLUS

ChemMAX™ 3 coverall with additional protective features

- ChemMAX™ 3 coverall with attached boots with boot overflaps and double cuffs
- Double zip and storm flap front fastening
- Available in grey

ChemMAX™ 3 fabric is tested against a range of chemical warfare agents. Contact Lakeland Europe for a copy of our document "ChemMAX™ 3 for use in NBC Applications".

PROTECTION TYPES

- Type 3 Liquid tight Protection
- Type 4 Spray tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-static Clothing
- Protection against Infective Agents

3 ECP

flat or expanded back options

Fully encapsulating ChemMAX™ 3 coverall in flat and expanded back versions

- Fully encapsulating coverall with PVC visor and sealed exhaust valves
- Flat back version with rear hose inlet for use with portable respirator unit. This "inflates" the garment keeping the wearer cool and comfortable
- Expanded back version for use with SCBA and sealed exhaust valves
- Available in grey

Other options.

- Attached chemical gloves using "ring" system
- Bespoke elements

ChemMAX™ garments can be supplied with chemical gloves attached using the ring system.

The emsemble has to be separately tested and certified to Type 3 & 4.

PROTECTION TYPES

- Type 3 Liquid tight Protection
- Type 4 Spray tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-static Clothing
- Protection against Infective Agents

ChemMAX 4

ChemMAX™ 4 uses a tough fabric that is exactly half the structure of Interceptor™. It provides a higher chemical barrier than ChemMAX™ 3 and provides protection against some more demanding chemicals.

Chemical Barrier compared to ChemMAX® 3

Chemical	Breakthrough in minutes	
	ChemMAX® 3	ChemMAX® 4
Bromine	Immediate	45 min
Carbon Monoxide	320 mins	>480 mins
Chlorobenzine	9 mins	>480 mins
Diethylamine	Immediate	>480 mins
Nitrobenzine	170 mins	>480 mins

- High barrier against a wide range of chemicals
- Good fabric softness and flexibility
- Fully taped and sealed seams
- Double zip and storm flap front fastening
- Cushioned knee pads for comfort, durability and safety
- Available in Type 3 & 4 coverall
- Type 1a gas tight suit available soon
- Available in forest green as standard and yellow to order

ChemMAX® 4 is available as a Type 3 & 4 chemical coverall. A gas tight version is in development.

Also available in yellow

PROTECTION TYPES

- Type 1 Gas-tight Protection (COMING SOON)
- Type 3 Liquid Tight Protection
- Type 4 Spray Tight Protection
- EN1149 Anti-Static Clothing
- Protection Against Infective agents

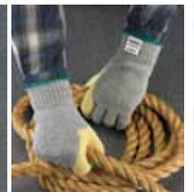
Reduce costs and expand your glove range through product bundling

Did you know Lakeland also manufacture a full range of protective gloves for chemical and cut protection?

Lakeland's glove range includes:

- Supported and unsupported dipped gloves for chemical protection.
- Knitted gloves for cut protection using a variety of high performance fibres such as Kevlar and Spectra.
- Specialist coating such as PU for cut protection with function and flexibility.
- Glove developments available ONLY from Lakeland, such as *Despro*, a combined fibre glove for maximum protection and minimum cost, and *Enhand-CR* - an unique anti-microbial treatment for the food industry.

See Lakeland's separate Glove catalogue for more information



Bundle Gloves with Coveralls .... and save on freight ...

Small quantities of specialist gloves incur expensive freight charges and ordering from main distributors can be expensive. By ordering from Lakeland's glove range and bundling with Lakelands coveralls you can buy small quantities at reduced prices without expensive freight costs!

Interceptor®

Interceptor™ is Lakeland's flagship fully encapsulating coverall offering fully sealed, gas-tight protection against hazardous chemicals either in gaseous or liquid form. Interceptor™ is fully approved and certified to EN 943-1: 2002.

INTERCEPTOR™

PROTECTION TYPES

- Type 1 Gas-tight Protection
- Type 2 Non-gas Tight Protection
- Type 3 Liquid tight Protection
- Type 4 Spray Tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-Static Clothing
- Protection Against Infective Agents

Interceptor™ uses unique Lakeland-engineered multi-layer / multi-film technology to create a material which is remarkably light and flexible fabric yet features a superior barrier against a very wide range of chemicals. Interceptor™ fabric is 325gsm - compared to heavier weight competitive garments – in fact Interceptor™ is 15% lighter than its most common alternative.

In addition to the fabric Interceptor™ uses a number of unique features to create a superior product for this highest level of protection:-

- High strength stitched seams sealed with heat sealing chemical tape on the inside AND outside of the seam. The tape used is developed from the key outer layer of the Interceptor™ fabric to ensure seams maintain a sufficient level of barrier*
- Two-layer face-shield constructed of an outer layer of 10 mil teflon and an inner layer of 40mil PVC for superior chemical barrier. Sealing of the face-shield uses a unique patented system of etching to enable superior and more secure sealing of the seam.
- Standard vision and wide vision visor options
- SCBA accommodation inside the suit
- 122cm gas tight zipper with front or rear entry mounting options
- Two exhalation valves with covering flaps
- Attached sock boots with boot overflaps
- Two layer glove system as standard featuring an inner North Silvershield™ glove and outer Lakeland neoprene glove
- St Gobain "One Glove"™ system as option
- Front or rear entry optional designs

Interceptor ™ is available in four basic designs:-

- Front entry / standard visor
- Front entry / wide vision visor
- Rear entry / standard visor
- Rear entry / wide vision visor

Pressure test kits for Interceptor ™ are also available from Lakeland

- (10% off test kit prices if bought with three Interceptor ™ suits)

For full details see the separate Interceptor ™ leaflet or contact sales-europe@lakeland.com

Pressure test kit

Lakeland neoprene glove

St Gobain "One Glove"™

Interceptor™ Features:

- High chemical barrier flexible fabric
- Fully encapsulating suits with PVC visor, exhaust valves, inlet hose connections or expanded back where appropriate
- Choice of colours

Pyrolon®

Unlike other FR disposable garments, Pyrolon® uses unique intrinsically FR materials to produce garments that combine chemical protection to Type 5 & 6 (Pyrolon® XT) and Types 3 & 4 (Pyrolon® CRFR) with flame retardency to the latest FR standard EN14116:2008. These garments are used extensively in the European petrochemical industry where they are safer in any area where contact with flame is a risk, but most importantly, unlike standard disposables, can be worn over Thermal Protective Garment (such as Fyrban FRC or CMA) without compromising flame and heat protection.

Pyrolon® XT

Viscose rayon/polyester-based nonwoven fabric with offering splash & dust protection with Flame Retardency

- Soft & breathable fabric
- Reinforcing nylon scrim to inside for additional strength
- Unique fabric combines light splash protection, dust protection and flame retardency
- Fabric will not ignite even in forced ignition situations
- Can be worn over standard flame protective workwear without compromising flame protection - in most cases flame protection is improved. Tested in multilayer ensembles for predicted body burn using Thermal mannequin test equipment to prove an increase in thermal protection and a reduced body burn incidence ... see detailed Pyrolon® leaflet for further information
- Meets latest FR standard EN 14116:2008

PROTECTION TYPES

- Type 5 Dust Protection
- Type 6 Light Splash Protection
- EN1149 Anti-Static Clothing
- Nuclear Industry Dust Protection
- EN 533:1993 : Index 1 EN 14116:2008

Pyrolon® crfr

Viscose rayon / polyester / PVC film composite fabric provides a chemical protective suit that will not burn... even in a forced

- Soft and flexible fabric
- Ideal alternative to standard disposable chemical suits in fire risk areas such as petrochemical and refining plants
- Combines Type 3 & 4 chemical spray protection and flame retardency
- Fabric will not ignite even in forced ignition situations
- Can be worn over standard flame protective workwear without compromising flame protection - in most cases flame and heat protection is improved. Tested in multilayer ensembles for predicted body burn using Thermal mannequin test equipment to prove an increase in thermal protection and a reduced body burn incidence ... see detailed Pyrolon® leaflet for further information
- Meets latest FR standard EN14116:2008
- Fully stitched and taped seams for impervious seal
- Also available in orange

PROTECTION TYPES

- Type 3 Liquid Tight Protection
- Type 4 Spray Tight Protection
- Nuclear Industry Dust Protection
- EN1149 Anti-Static Clothing
- EN 533:1993 : Index 1 EN 14116: 2008

Also available in hi-res orange

Pyrolon® TPCR

Thermal protection - chemical repellency. A single garment offering protection against chemical splash, flame and heat, molten splash and electric ARC.

- Unique fabric which combines chemical, flame, heat and molten splash and electric arc protection in one garment.
- Soft and flexible fabric
- Bright orange colour for easy visibility
- Type 3 & 4 chemical protection
- Chemical film barrier is as same as Pyrolon® CRFR
- Certified to latest FR and Arc protection standards.
- Features high Arc protective rating of 21.9cal/m2 (according to US Test ASTM F1959M-06a)
- Ideal where both chemical and heat protection are required in dirty or damaging environments; to reduce expensive protection garments. Ideal for contractors or cleaning processes.

PROTECTION TYPES

- Type 3 Liquid Tight Protection
- Type 4 Spray Tight Protection
- EN 11612: 2008 Protection against Heat & flame
- EN 11611:2007 Clothing for welding & allied processes
- EN 61482-1-2 Electric Arc Protection
- EN1149 Anti-Static

in development for 2012 ... Fyrban

2012 will see the launch of Lakeland's new Fyrban range for Europe. This will include a new range of fabrics and designs to meet all requirements. Superior features, budget garments, lighweight fabrcs for warmer climates ... and introducting Fyrban TXL ... a new coverall made from an entirely new fabric with fibre from sustainable and ecologically sound sources.

Fyrban CMA PROTECTIVE APPAREL Mfg. by Lakeland Industries

Fyrban FRC PROTECTIVE APPAREL Mfg. by Lakeland Industries

Fyrban TXL PROTECTIVE APPAREL Mfg. by Lakeland Industries

The Fyrban fabric range will include:	
Fyrban FRC	330gsm FR cotton
Fyrban FRC Comfort	Superior quality 220gsm lightweight FR cotton for use in warm areas and warmer climates.
Fyrban CMA	Lakeland's own aramid fibre FR coverall
Fyrban TXL30	330gsm Fyrban TXL - a new viscose based product for sustainable and ecologically sound FR protection
Fyrban TXL24	240gsm lightweight version of Fyrban TXL
Fyrban TSP	Fyrban TXL / Aramid mix to provide a higher level of flash fire protection.
Bespoke Garments	Any specification or design using most globally recognised brands including Nomex®, Indura® etc

Fyrban TXL uses Tecasafe XL fabric from Dutch-based Tencate B.V - one of the oldest manufacturers of technical fabrics in the world. TXL fabric is not FR cotton or aramid but is derived from viscose from a managed sustainable source. Unlike cotton, it is produced under controlled and regulated manufacturing conditions, produces no harmful pollutants and is entirely sustainable and bio-degradeable.

FR cotton is commonly used globally with little realisation of its harmful effects on the environment.

Fyrban TXL makes sense for our future ...

GREEN? Cotton v Fyrban TXL

FR Cotton

- ✗ 7 to 9000 litres of water used to produce 1kg of cotton - 85% of cotton's water footprint is outside Europe.
- ✗ One third of global pesticides are used in growing cotton.
- ✗ Production releases many harmful waste toxin pollutants
- ✗ 2.4% of global arable land is used in growing cotton - at a time of increasing food shortages.
- ✗ Cotton growing often exists outside the scope of legally accepted conditions - and processing is often associated with very poor labour conditions

Fyrban TXL

- ✓ A bio-fibre produced using eco-friendly technology
- ✓ Based on wood from managed forests - renewable and completely degradable
- ✓ The solvent used in spinning is non-toxic and completely re-cycled in the process.
- ✓ Waste products are minimal and completely non-hazardous
- ✓ TXL fibre is completely natural and 100% biodegradable

Standard styles or bespoke designs and specifications

Fyrban Cadet Coverall	Basic work FR coverall
Fyrban Commander Coverall	More features and design elements - look good and stay safe
Jacket	Long jacket with pockets and stud front
Bomber Jacket	Bomber style jacket with zip front
Bib & Brace Pants	Pants with high waist and braces
Pants	Standard pants for use with jacket
Shirt	Classic Oxford style long or short sleeved shirt
Polo shirt	Classic Polo shirt - cool and comfortable

Industrial Heat Protective Garments

Lakeland ALM Industrial heat protective garments are designed to provide protection in a variety of industrial applications where work must be undertaken in close proximity to sources of high temperature.

A series of four fabrics provide different heat tolerences to different types of heat: Ambient Heat, Radiant Heat (direct heat from a heat source such as fire) and Conductive Heat (heat resulting from contact with a hot surface). These garments are designed for this type of heat protection and not for fire entry.

LAKELAND ALM

Materials
Lakeland ALM garments use two key fabrics

Aluminised Glass
Glass fabric which does not burn, stretch or shrink.
With reflective aluminium outer surface. Used for Series 700 and 900

Aluminised Nomex®
Very durable Nomex® with aluminium outer surface.
Used for 300 and 500 series.

Certification in progress to ...

EN 11612: 2008
Protection against
Heat & flame

EN 11611:2007
Clothing for
welding & allied processes

Lakeland ALM Industrial heat protective garments are available in several styles including coveralls or pants & jacket with and without BA pouch, along with hoods, gloves boots, aprons etc

Lakeland ALM Heat protective Garments range:-

ALM Series 900 : Kiln Entry Suit
Multiple layers of glass and an extra layer of aluminised glass for areas where users need to enter kiln's or other areas of extreme heat. The ALM 900 Series suit comes complete with SCBA accommodation, hood with multi-layered system of tempered glass and reflective gold, along with coat, pants, boots and gloves.

ALM Series 700: Proximity Suit
For maintenance and repairs or manufacturing areas using bake-on finishes. Multiple layers and aluminised glass outer layer and with a moisture barrier in case hot liquid, steam or vapour may be present. Available as a coverall or jacket and pants with or without BA accomodation. Hood features reflective gold face-shield.

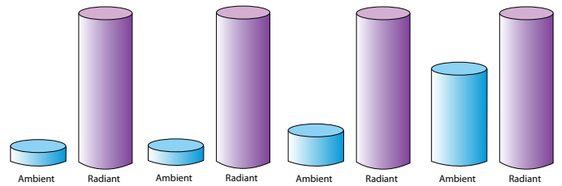
ALM Series 500: Approach Suit
Approach suits are for use in areas of low ambient and high radiant heat such as foundries, power plants, cement manufacturing. Aluminised glass OR aluminised Nomex and integral moisture barrier. Coverall or coat and pants with or without SCBA accommodation.

ALM Series 300: Lightweight Approach Suit
Similar to the ALM Series 500 suit but without the steam barrier so for use in areas where steam or hot vapour would not be present. Protection in areas of high radiant and low ambient heat.

All garments except the ALM 900 Series are available as coveralls or jacket and pants with or without BA accomodation as well as hoods, gloves, boots and a range of accessories such as aprons, sleeves etc.

Heat Tolerances

Heat Tolerences below are indicative of fabric performance in laboratory conditions and are designed to indicate relative comparison of ambient and radient heat performance. They are not intended to indicate suitability for any specific application at those temperatures.



Fire Fighters Clothing

Lakeland's Fire Fighters Apparel is made to the high specifications demanded by some of the toughest emergency services in the world. Fyrepel® OSX is an of the shelf structural turnout gear offering a choice of two high spec garments for when you cannot afford to wait. Fyrepel® is our range of bespoke garments offering a choice of fabrics and designs and including aluminised fire entry versions.

All garments are currently approved to the requirements of the latest NFPA standards for North America. European versions of our OSX™ garments are currently in development.

OSX 1000 When speed counts ...

OSX™ 1000 - Main Features

Outer Shell : Yellow Nomex®
Thermal Liner: Aralite®
Moisture Barrier: Stedair® 3000

- 35" coat length
- Snap / velcro removable liner system
- Drag Rescue device
- NFPA compliant hi-vis reflective trim
- Reinforced shoulders & yoke
- Double stitched Nomex® thread seams
- Two 10" x 10" pockets with velcro closures & drain holes
- Radio pocket with drain holes
- Double layer tapered fly with hook & dee & snap and velcro closure
- Two 7" x 8" seat pockets to pants with velcro closures and drain holes
- Padded shoulders
- Waist back pants

OSX 2000

All OSX™ and Fyrepel® feature Lakeland Drag Rescue Device

OSX™ 2000 - Main Features

Outer Shell: Khaki or black Advance®
Thermal Liner: Aralite®
Moisture Barrier: Stedair® 3000

- 32" coat length
- Snap / velcro removable liner system
- Drag Rescue device
- NFPA compliant hi-vis reflective trim
- Reinforced shoulders & yoke
- Double stitched Nomex® thread seams
- Two 10" x 10" pockets with velcro closures and drain holes
- Radio pocket with drain holes
- Double layer tapered fly with hook & dee & snap and velcro closure
- Two 7" x 8" cargo pockets to pants with velcro closures and drain holes
- Padded shoulders
- High back pants

Fyrepel® A DIVISION OF LAKELAND INDUSTRIES

Contact sales-europe@lakeland.com for detailed specification or more information.

Battalion

Battalion design features 32" coat, high back bib pants and choice of fabrics and options

Attack

Attack design features 35" coat, waist high pants and choice of fabrics and options

Combat

35" coat with waist high pants, choice of options and aluminised outer shell.

Combat Lite

29" coat with full bib pants, choice of options and aluminised outer shell

Full range of Accessories

OSX™ and Fyrepel® do not currently meet European standards but fully meet or exceed the requirements of NFPA 1971 current edition

Chemical Protective Gloves

Lakeland's range of chemical and mechanical protective gloves, along with specialist knitted cut protective gloves using unique combinations of fibres, are manufactured to the same the high quality standards expected by worldwide users of Lakeland coveralls.

Nitrosol

Premium Quality
100% Nitrile Glove
10, 15, 22mil weights
33 & 38cm lengths

Natrosol

Premium Quality
100% Natural Rubber Glove
15 mil weights
33 & 38cm lengths

Neosol

Premium Quality
100% Neoprene Glove
18 & 27 mil weights
33 & 38cm lengths

Neolasol

Premium Quality
neoprene / Natural Rubber double-dip glove
27 mil
33cm lengths

Nitrogard

Premium Quality
Nitrile Coated cotton Work Glove
Palm or full dip
Safety or comfort cuff

Nitrogard Lite

Premium Quality
Nitrile Coated cotton Work Glove, light-weight version.
Palm or full dip,
Safety or comfort cuff

PROTECTION TYPES

EN388:2003
Mechanical Protection

EN373 Pt2&3: 2003
Chemical Protection

For more information on mechanical and chemical levels see individual glove brochure

Spectra® / Nylon - D6F9L

Spectra® / cotton - D6F7L

Kevlar® / Nylon - D6F8L

Spectra® / cotton - D6F5L

Despro

Features unique two yarn knit system to maximise protection and minimise price

PROTECTION TYPES

EN388:2003
Mechanical Protection

Lakeland Despro glove use a unique, patented system of knitting gloves using a combination of two different yarns in different areas of the glove as shown in the pictures. This means the improved levels of cut protection can be focused in a particular area of the glove - such as in this case the thumb and forefinger.

Other, bespoke designs are available on request
Lakeland will shortly launch the full new European range of gloves including knitted gloves using cut resistance fibres including Kevlar and Spectra and featuring a variety of coatings including PU foam.

Disposable Gloves

Disposable Latex Glove
CE category II certified
Pale yellow colour
Lightly powdered or powder free
50 pairs per box

Disposable Nitrile Glove
CE category II certified
Blue colour
Lightly powdered or powder free
50 pairs per box

Disposable Vinyl Glove
CE category II certified
White colour
Lightly powdered or powder free
50 pairs per box

New Glove range coming shortly.
A new Lakeland Glove Catalogue will be available soon including the complete range of knitted cut protection gloves using a range of materials and coatings.

Accessories

Any style... any fabric... all of the accessories here - along with any bespoke designs or specific requirements - can be manufactured in any of the Lakeland fabrics, including:- Safegard® 76 Blue and white, MicroMAX®, MicroMAX® NS, TomteX®, ChemMAX® 1, 2 and 3, Pyrolon® XT and Pyrolon® CRFR

MicroMAX NS

MicroMax® NS Non-slip Overshoes
- Unique textured PVC non-slip sole for superior sure-footing.
- Available in two sizes:
  L - length 31cm and XL - length 41cm

Full Anti-Static version - Most non-slip overshoes feature anti-static fabric but not anti-static sole. Lakeland's anti-static over-shoes feature both fabric and sole that meets the EN1149-1 surface resistance standards.

MicroMax® NS Overboots
- Lakeland non-slip sole
- Standard length of 55.6cm with an elasticated top.
- Secured with two MicroMAX® ankle and leg ties.
- Available in two sizes; L and XL

MicroMax® NS Hoods
- Elasticated face opening suitable for open face or for fitting around a mask.
- Standard cape length is 49cm
- Longer lengths are available to order.

MicroMax® NS Sleeves
- Tapered for an improved fit
- Elasticated ends
- Two standard lengths:

Code EMN024MED - 45cm
Code EMN024 - 50cm

MicroMAX® NS Lab / Shop Coats
- Available with zip or four studs
- Two waist pockets as standard.
- Lab coat length is 97.2cm as standard. Longer or shorter lengths available as specials.

ChemMAX

All three ChemMAX® chemical barrier fabrics can be supplied in the following accessories:

- sleeves
- overshoes and overboots
  (featuring the Lakeland textured PVC non-slip sole)
- air fed cape hood

The ChemMAX® cape hood features an interior headmount with adjustable strap and rear mounted airhose attachment.

Pyrolon

A range of accessories is available in the Pyrolon® XT and CRFR fabrics - combining flame retardency and liquid protection.

The Pyrolon® XT gown features a high neck, elasticated sleeves, waist ties and an open back for superior comfort.

TOMTEX

Overshoes and boots made in chemical barrier fabrics such as ChemMAX® and TomteX® are constructed with a layer of the fabric inside the sole and the sole is sealed to the shoe with tape to ensure consistent chemical barrier and maintain a seal against penetration.

TomteX® overboots with non-slip sole are available from stock.

Specials

Lakeland also offers a range of special variants of standard products and assembled kits for specialist applications. Kits can be made to customers specifications, and a Lakeland stocking service is available even on own label and bespoke items.

SOCO Kit

Single bagged kit for Scene-Of-Crime Operations.

Featuring:-
- MicroMAX® Cool Suit - comfortable film based coverall with breathable back and blue bound seams to minimise operator contamination risk *(see page 5)*
- Non slip MicroMAX® overshoes
- P3 disposable face mask
- Pair of disposable nitrile gloves

SOCO kits featuring your own specified requirements and contents can be assembled to order.

Kits can be sterlised if required.

Sterilised Garments

Lakeland disposable garments and accessories can be supplied sterilised using an Ethylene Oxide process.

- Certification of process is available for each sterilised batch.
- Sterilised kits featuring a choice of garment and accessories can be assembled to order.
- Garments can also be cleaned to remove any latent dust particles for clean room use.

Own Label Service

Lakeland offers a bespoke own labelling service for distributors.

Distributors can purchase Lakeland disposable protective clothing manufactured under their own specified labels including garment and CE labelling, packaging and CE certification*.

Please contact us for more information

* Minimum quantities apply
* Not applicable to all Lakeland garments

Cool Vest

The Lakeland Cool Vest uses a unique phase change material to keep the wearer cool and comfortable for up to 3 hours.

Available in standard and FR materials.

One size fits all - fully adjustable.

Technical Information

Disposable Protective Clothing : Physical Properties *

	Safegard		MicroMAX				Type 3 & 4				Type 1 & 2		Pyrolon		
Standard & description	**GP**	**76**	**MicroMAX**	**NS**	**TS**	**Cool Suit ******	**TomTex**	**ChemMAX 1**	**ChemMAX 2**	**ChemMAX 3**	**ChemMAX 4**	**Interceptor**	**XT**	**CRFR**	**TPCR**
EN530-Abrasion	2	1	2	1	1	1	2	2	6	2	6	TBA	2	6	2
EN863-Puncture	1	1	1	1	1	1	1	2	2	2	2	TBA	2	2	2
ISO2960-Burst	2	-	3	1	1	1	3	1	2	2	4	TBA	2	2	2
ISO7854-Flex cracking ISO9073-Trap Tear	6	6	5	4	4	4	3	1	6	4	1	TBA	6	5	4
Md/Cd	2/2	3/2	4/2	3/1	3/1	3/1	3/2	3/3	6/4	4/3	3/2	TBA	4/3	2/2	4
EN5082-Seam Strength EN1149.1 Surface	3	3	3	3	3	3	3	3	4	4	5	TBA	3	4	5
Resistance	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	Pass	Pass	Pass

** According to European Classes - EN 14324*
*** Main body fabric - the breathable panel according to Safegard 76*

Disposable Protective Clothing : Finished Garment Tests

	Safegard		MicroMAX				Type 3 & 4				Type 1 & 2		FR Protection		
Standard and Description	**GP**	**76**	**MicroMAX**	**NS**	**Cool Suit**	**TS**	**TomTEX**	**ChemMAX 1**	**ChemMAX 2**	**ChemMAX 3**	**ChemMAX 4**	**Interceptor**	**XT**	**CRFR**	**TPCR**
EN13034:2005 Type 6	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	
EN13982-1:2004 Type 5	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	
EN14605:2005 Type 4	-	-	-	-	-	PASS	PASS	PASS	PASS	PASS	PASS	PASS		PASS	
EN14605:2005 Type 3	-	-	-	-	-	-	PASS	PASS	PASS	PASS	PASS	PASS	-	PASS	
EN943-1:2002 Type 1 EN14126:2003	-	-	-	-	-	-	-	-	-	-	PASS	PASS	-	-	
Bio Protection **	-	-	PASS	PASS	PASS	PASS	-	PASS	PASS	PASS	PASS	PASS	-	-	
EN1073:2002 Radioactive Contaminants	PASS	PASS	PASS	PASS	PASS	PASS	-	PASS	PASS	PASS	PASS	PASS	-	-	
EN533:1997 Limited Flame Spread	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EN14116:2008 Heat/ flame protection	-	-	-	-	-	-	-	-	-	-	-	-	PASS	PASS	
EN 11612: 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PASS
Heat & Flame Protection EN 1611: 2007 Welding etc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PASS
61482-1-2 Electric Arc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PASS

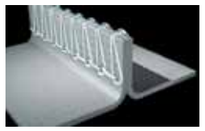
*** Fabric only has passed EN 14126 tests as we do not consider it prudent to certify a stitched seam garment for biological contaminant protection.*
- Cool Suit: main body fabric only passes tests.

Chemical Penetration / Repellency for Type 6 Garments According to EN368

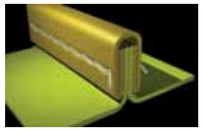
	Safegard GP	Safegard 76	MicroMAX	MicroMAX NS / TS
CHEMICAL			**REPELLENCY % / PENETRATION %**	
Sulphuric Acid 30%	97.4 / 0.7	95.5 / 0	98.1 / 0	97.7 / 0
Sodium Hydroxide 10%	96.5 / 0.3	97.6 / 0	98.5 / 0	99.1 / 0
O Xylene	-	-	91 / 0	91 / 0
Butan-1-ol	-	-	93 / 0	93 / 0

Seam Types

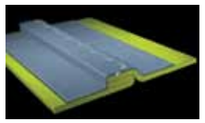
Three types of seams are used in Lakeland garments:-



Stitched Seam
The two pieces of fabric are brought together and stitched along. The seam can be either in the inside or outside of the garment; generally seams on the outside are considered to feature better particle filtration



Bound Seam
A strip of material - in Lakeland garments a CPE - is wrapped and stitched along the seam. This produces a neater, tougher seam with improved repellency and filtration but remains a stitched seam and is therefor not impervious

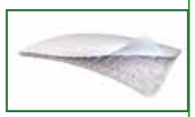


Stitched & Taped seam
A barrier film tape is welded into place over the stitched seams. This forms an impervious liquid-proof seam. Required for Type 3 and 4 garments in which the seam as well as the fabric should undergo permeation testing

MicroMAX® - To scrim or not to scrim, that is the question

MicroMAX® and MicroMAX® are made using a high quality Microporous PE film laminate - a standard fabric type for Type 5 and 6 applications. However, standard fabrics of this type tend to suffer from a large difference in trapezoidal tear strength in the machine and cross direction resulting in an inherrant fabric weakness - the strength in one direction is often double the other.

- MicroMAX® NS (ie, no scrim) is better than many because of being a high quality two-way stretched film.
- MicroMAX® features a unique nylon scrim laminated between the layers - both increasing and equalizing the tear strength... And making MicroMAX® one of the toughest garments of its class.

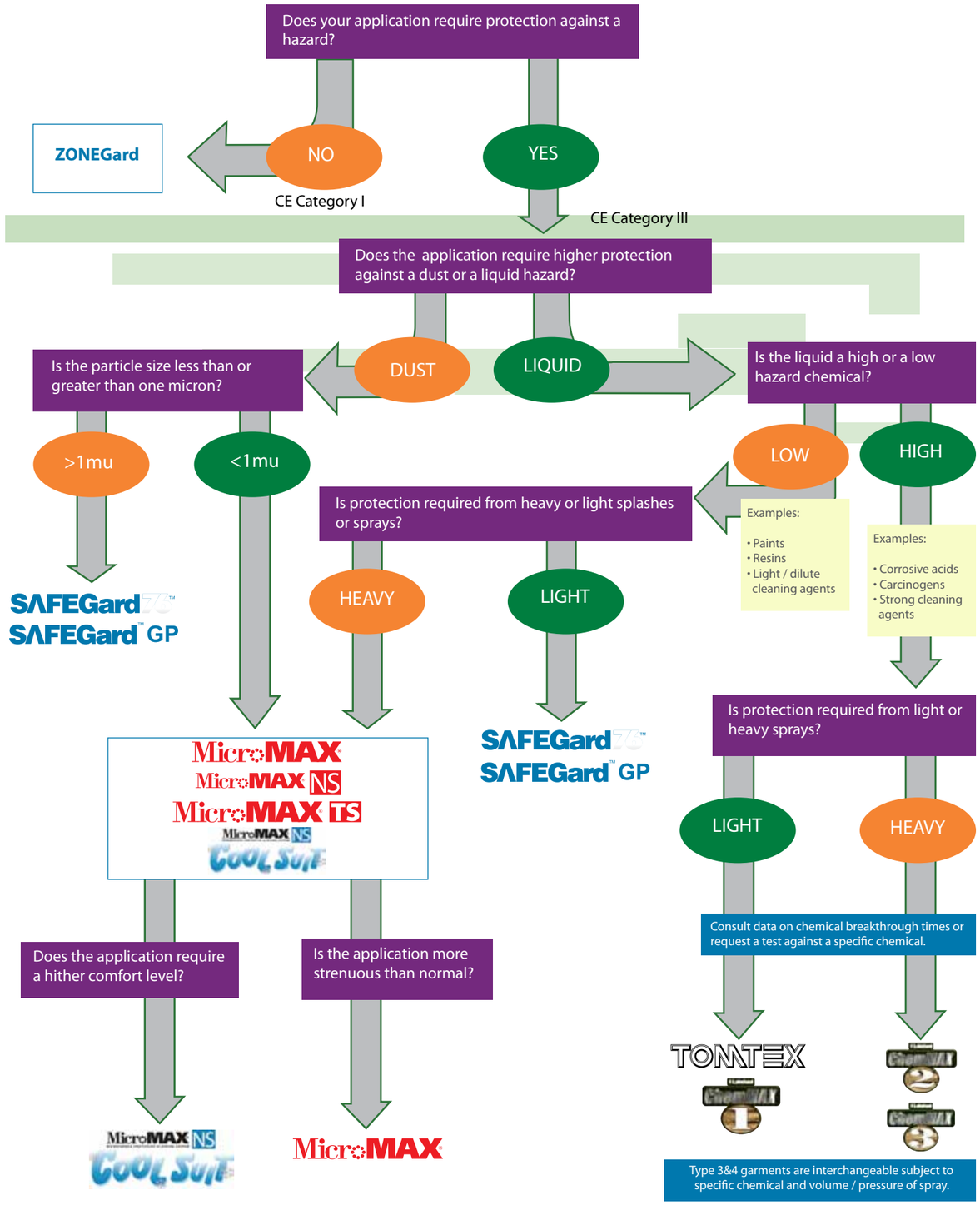


Trap Tear	Product A	Product B	Product C	MicroMAX® NS	MicroMAX®
MD	26.1	42	38	58.5	47.8
CD	30.6	26	27	31.5	55
Average	28.35	34	32.5	45	51.4

Garment Seam Types	Safegard GP	Safegard 76	MicroMAX NS	MicroMAX	MicroMAX Cool Suit	MicroMAX TS	TomTEX	ChemMAX 1,2,3,4	Intereptor	Pyrolon XT	Pyrolon CRFR	Pyrolon TPCR
Stitched Seams	X		X							X		
Bound Seams		X		X	X							
Taped Seams					X	X	X	X	X		X	X

Garment Selection Chart

Use the chart to select the appropriate Lakeland garment for the application.



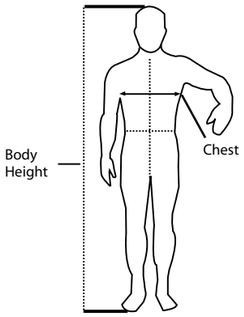
Lakeland's garment selection chart is a broad outline of the key elements for deciding the type of garment for general types of applications. Specific application and environments may feature various unique elements which could affect the garment choice. For this reason the selection chart is not intended to be an infallible tool nor to provide users with a definate technique for determining which garment to use. Other factors may need to be considered. Rather is is intended to offer general guidance on the issues that may be considered. It remains the users' final responsibility to ensure suitability of any garment selected for an application.

Garment Sizing and Style

Garment Sizing and Style

All Lakeland coveralls for Europe are made to our unique "Super-B" style pattern, developed especially for the European market. This makes use of the best elements of North American and European styling and sizing. Sizing is generous and roomy, allowing for full freedom of movement without creating stresses resulting from too baggy garments:-

European Garment Sizing



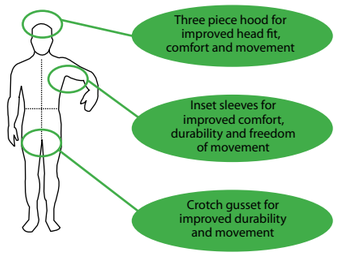
	Body height (cm)	Chest (cm)
Small	164-170	84-92
Medium	170-176	92-100
Large	176-182	100-108
X Large	182-188	108-116
XX Large	188-194	116-124
XXX Large	194-200	124-132

Dimensions refer to wear dimensions rather than actual garment dimensions.

Note that the selection of the appropriate size is important in maximizing the life and protection of the garment.

Lakeland Super-B Style

Lakeland Coverall Design Super-B Style



Lakeland garments are made using a unique "Super-B" pattern featuring three key elements for superior ergonomic design.

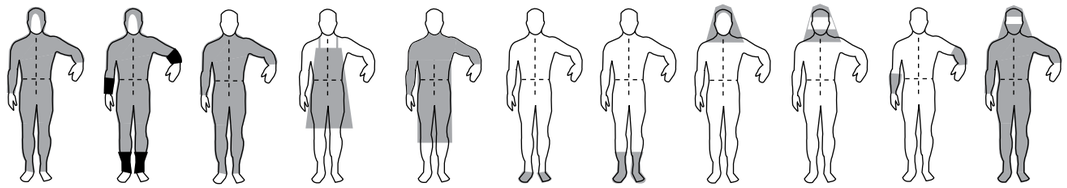
The Lakeland Super-B style features a combination of three ergonomic elements that together result in the best designed garment available:-

- Inset sleeves. The sleeve is set into the arm following the natural body shape. Unlike with traditional European "batwing" style sleeves, this helps "hinge" the arm at the shoulder, thus allowing a full range of movement of the arm without pulling up the lower half of the garment and resulting in less stress on the crotch area. Many batwing sleeves have a low crotch to resolve this problem, resulting in the lower part of the suit being too baggy. Lakeland's Super-B style solves this with the inset sleeve resulting in a better fitting and more durable garment.

- Three piece Hood. Many garments use a two piece hood. Two pieces can only form a two dimensional shape. Most heads are three dimensional. The Super-B style uses a three piece hood to fit the head properly, resulting in a better fitting and more comfortable hood.

- Two piece crotch gusset. The crotch is the area of any coverall suffering the most stress. Many garments feature a crotch with four simple seams coming together at one point resulting in a singular weakness. The Lakeland Super-B style features two dart-shaped gusset sections to make a more three dimensional and better fitting crotch suffering less stress and resulting in a more durable and comfortable garment.

No other garment features all three of these elements. Lakeland's Super-B styling makes Lakeland coveralls more ergonomically designed than any other available.



Chemical Permeation Times

Chemical Permeation Times... 96 Chemicals

Below is an alphabetical list of 96 chemicals tested against the various Lakeland Type 3 & 4 coverall fabrics according to EN369 / EN374-3.

Chemical	CAS NO	T	C1	C2	C3
Acetic Acid	64-19-7				
Acetic Anhydride	108-24-7				
Acetone	67-64-1				
Acetonitrile	75-05-8				
Acrolein	107-02-08				
Acrylic Acid	79-10-7				
Acrylonitrile	107-13-1				
Allyl Alcohol	107-18-6				
Ammonia Gas	7664-41-7				
Amyle Acetate	628-63-7				
Aniline	62-53-3				
Benzene	71-43-2				
Benzyl Alcohol	100-51-6				
Bromine	7726-95-6				
n-Butanol	71-36-3				
n-Butyl Ether	142-96-1				
Butraldehylde	123-72-8				
1,3-Butadiene	106-99-0				
Carbon Disulfide	75-15-0				
Carbon Monoxide	630-08-0				
Chlorine Gas	7782-50-5				
2-Chloroethanol	107-07-3				
Chloroacetone	78-95-5				
Chlorobenzene	108-90-7				
Chlorosulfonic Acid	7790-94-5				
Crotonaldeldehyde	123-73-9				
Cyclohexane	110-82-7				
Cyclohexanone	108-94-1				
Cyclohexyl Isocyanate	3173-53-3				
1,2-Dichloroethane	107-06-2				
Dichloromethane	75-09-2				
1,2-Dichloropropane	78-87-5				
Diesel Fuel	68334-30-5				
Diethylamine	109-89-7				
Dimethylacetamide	127-19-5				
Dimethylsulfoxide	67-68-5				
Dimethyl Formamide	68-12-2				
Dinoseb	88-85-7				
EDTA 10%	60-00-4				
Epichlorohydrin	106-89-8				
Ethanol Amine	141-43-5				
Ethyl Acetate	141-78-6				
Ethyl Benzene	100-41-4				
Ethylene Glycol	107-21-1				
Ethylene Oxide Gas	75-21-8				
Formaldehyde	50-00-0				
Formic Acid	64-18-6				
Gasoline	86290-81-5				
Hexamethyldisilazane	999-97-3				
HDI - Hexamethylene Diiso-cyanate	822-06-0				

Chemical	CAS NO	T	C1	C2	C3
n-Hexane	110-54-3				
Hydrochloric Acid	7647-01-0				
Hydrogen Chloride Gas	7647-01-0				
Hydrogen Fluoride	7664-39-3				
Hydrogen Fluoride Gas	7664-39-3				
Hydrogen Peroxide	7722-84-1				
Isoamyl Alcohol	123-51-3				
Isopropanol	N/A				
Jet Fuel A	N/A				
Jet Fuel JP-8	N/A				
Lithium Chloride	7447-41-8				
Mercury II Nitrate (1000 ppm solution	7783-34-8				
Methanol	67-56-1				
Methylamine	74-89-5				
Methyl Chloride Gas	74-87-3				
MDA - Methylene Dianiline	83712-44-1				
MDI - Methylene Diphenyl Diisocyanate	101-68-8				
Methyl Ethyl Ketone	78-93-3				
Methyl Methacrylate	80-62-6				
Nitric Acid 70%	7697-37-2				
Nitric Acid 69%	7697-37-2				
Nitric Acid 65%	7697-37-2				
Nitrobenzene	98-95-3				
Nitrogen Dioxide	10102-44-0				
Oleum	8014-95-7				
Phenol	108-95-2				
Phosphoric Acid	7664-38-2				
Phosphoric Trichloride	7719-12-2				
Potassium Hydroxide 40%	1310-58-3				
Propionitrile	107-12-0				
Propylene Oxide	75-56-9				
Sodium Hydroxide (40%)	7664-93-9				
Sodium Hydroxide (50%)	7664-93-9				
Sodium Hypochlorite 12%	7681-52-9				
Styrene	100-42-5				
Sulfuric Acid (30%)	7664-93-9				
Sulfuric Acid (96%)	7664-93-9				
Sulfuric Acid (98%)	7664-93-9				
Sulphur Dioxide	7446-09-5				
Sulfur Trioxide	7446-11-9				
Tetrachloroethylene	127-18-4				
Tetrafluoroacetic Acid					
Tetrahydrofuran	109-99-9				
Titanium Tetrachloride	7550-45-0				
Toluene	108-88-3				
Trichloroethylene	79-01-6				
Trifluoroacetic Acid	76-05-1				
Tricholorvinylsilane	75-94-5				
Vinyl Acetate	108-05-4				
Vinyl Chloride	75-01-4				
Xylene	1330-20-7				

Product Key			
T	TomteX	C2	ChemMAX 2
C1	ChemMAX 1	C3	ChemMAx 3

Permeation Key - breakthrough in mins			
	Class 1 >10M		Class 4 >120M
	Class 2 >30M		Class 5 >240M
	Class 3 >60M		Class 6 >480M
	Unclassified : < 10M (immediate)		
	Untested		

Note: These permeation times represent a "normalised" breakthrough time defined as the time taken for the permeation rate to reach 150ug under laboratory controlled conditions. This is intended to give an indication of the barrier of the fabric against specific chemicals and not of the duration of "safe use" for a garment. Note that seams and closures may have lower breakthrough times than fabrics: as required by Type 3 & 4 standard EN 14605:2005 seams have also been tested to prove a minimum breakthrough of 10 mins on at least one chemical.
Please note that it is the users' final responsibility to determine the suitability of a garment for a specific application

Chemical Permeation Times

Below is an alphabetical list of 96 chemicals tested against Lakeland's ChemMAX 4 and Interceptor coverall according to EN369 / EN374-3.

Chemical	CAS NO	ChemMAX 4	Interceptor
1,1,2,2-Tetrabromoethane 98%	97-27-6		6
1,2 Butylene Oxide 99%	106-88-7		6
1,2-Dichloroethane 99%	107-06-2	6	
1,3-Butadiene 99%	106-99-0	6	
2,2,2-Trichloroethanol 99%	115-20-8	6	
2,3-Dichloro-1-Propene 98%	78-88-6	6	
4-Bromofluorobenzene 99%	460-00-4	6	
Acetic Acid 99.7%	64-19-7	1	
Acetone 99%	67-64-1	6	
Acetonitrile 99%	75-05-8	6	
Acetyl Chloride 98%	75-36-5	4	
Acrolein 98%	107-02-8	6	
Acrylic Acid 99.5%	79-10-7	1	
Acrylonitrile 99%	107-13-1	6	
Allyl Chloride 98%	107-05-1	6	
Ammonia 99%	7664-41-7	6	
Ammonia Gas 99%	7664-41-7	6	
Ammonium Fluoride 40%	12125-01-8	6	
Benzonitrile 99%	100-47-0	6	
Benzoyl Chloride 98%	98-88-4		6
Bromine 98%	7726-95-6	2	4
Bromochloromethane 98%	74-97-5		6
Carbon Disulfide 99%	75-15-0	6	
Chlorine 99.5%	7782-50-5	6	
Chloroacetyl Chloride 98%	79-04-9		6
Chlorobenzene 99.9%	106-90-7	6	
Chlorosulfonic Acid 97%	7790-94-5	6	
Cyclohexylamine 99%	108-91-8		6
Dichloromethane 99%	75-09-2	6	
Diethylamine 99%	109-89-7	6	
Diethylenetriamine 98%	111-40-0	6	
Dimethyl Disulfide 99%	624-92-0		6
Dimethyl Ether (gas) 99%	115-10-6		6
Dimethyl Sulfoxide 99.9%	67-68-5	6	
Dimethylformamide 99%	68-12-2	6	
Di-n-Butyl Ether 99%	142-96-1	6	
Ethyl Acetate 99%	141-78-6	6	
Ethyl Acrylate 99%	140-88-5	6	6
Ethyle Ether 98%	60-29-7	6	
Ethyl Methacrylate 99%	97-63-2		6
Ethyl Vinyl Ether 99%	109-92-2		6
Ethylamine (gas) 97%	75-04-7		6
Ethylene Oxide 99.7%	75-21-8	6	
Ferric Chloride saturated	7705-08-0		6
Fluorobenzene 99%	462-06-6	6	
Fluorosilic Acid (25 wt% aqueos sol.) 25%	16961-83-4	6	
Formic Acid 99%	64-18-6	6	
Hexachloro-1,3 Butadiene 99%	87-68-3	6	

Chemical	CAS NO	ChemMAX 4	Interceptor
Hexane 99%	110-54-3	6	
Hydrazine Hydrate (64% hydrazine) 100%	10217-52-4		6
Hydrochloric Acid 56.5%	10034-85-2	6	
Hydrofluoric Acid 48-50%	7664-39-3	4	6
Hydrogen Chloride 99%	7647-01-0	6	
Hydrogen Fluoride Gas 99%	7664-39-3	6	
Isobutane 99%	75-28-5		6
Isobutylbenzene99.5%	538-93-2		6
Isoprene 98%	78-79-5		6
Maleic Acid saturated	110-16-7		6
Maleic Anhydride (solution) 65% saturated	108-31-6		6
Methacrylic Acid 99%	79-41-4	6	6
Methanol 99.9%	67-56-1	6	
Methyl Chloride 99.5%	74-87-3	6	
Methyl Chloroformate 99%	79-22-1		6
Methyl Formate 97%	107-31-3		6
Methyl Iodide 99.9%	74-88-4	6	
Methyl Mercaptan 99%	74-93-1	6	
Methylamine (40% w/w in H2O)	74-89-5	6	
N,N-Dimethylaniline 99%	121-69-7	6	
n-Butyl Acetate 99%	123-86-4	6	
Nitric Acid 90%	7697-37-2	6	
Nitric Oxide 99%	10102-43-9		6
Nitrobenzene 99%	98-95-3	6	
Nitrochloro Benzene (ethanol solution) saturated	201-854-9		6
Nitrogen Tetroxide (<10°C) 99%	10102-44-0	6	6
Nonylamine 98%	112-20-9		6
Oleum 98%	7664-93-9, 7446-11-9		6
Oxalic Acid (solution) 75% saturated	144-62-7		6
Phenol 90%	108-95-2	6	6
Phosphoric Acid 85%	79-41-4	6	
Potasium Hydroxide 88%	1310-58-3	6	
Propionaldehide 99%	123-38-6		6
Propionic Acid 99.5%	79-09-4		6
Sodium Hydroxide 50%	1310-73-2	6	
Sulfuric Acid 98%	7664-93-9	6	
Sulfur Trioxide Saturated	7446-11-9*		6
Tetrachloroethylene 99%	127-18-4	6	
Tetrahydrofuran 99%	109-99-9	6	
Thionyl Chloride 99%	7719-09-7	2	
Tiethoxysilane 95%	998-30-1		6
Toluene 99%	108-88-3	6	
Toluene-2,4-Diisocyanate 98%	584-84-9	6	
Trichloroethylene 99%	79-01-6	6	
Vinyl Acetate 99%	108-05-4	6	
Vinyl Bromide 99%	593-60-2		6

Note: These permeation times represent a "normalised" breakthrough time defined as the time taken for the permeation rate to reach 150ug under laboratory controlled conditions. This is intended to give an indication of the barrier of the fabric against specific chemicals and not of the duration of "safe use" for a garment. Note that seams and closures may have lower breakthrough times than fabrics: as required by Type 3 & 4 standard EN 14605:2005 seams have also been tested to prove a minimum breakthrough of 10 mins on at least one chemical. Please note that it is the users' final responsibility to determine the suitability of a garment for a specific application

Permeation Key - breakthrough in mins	
Class 1 >10M	Class 4 >120M
Class 2 >30M	Class 5 >240M
Class 3 >60M	Class 6 >480M
Unclassified : < 10M (immediate)	
Untested	

GLOBAL PREMIER LOGO

Introducing Lakeland Global Premier.

The first range of limited life protective clothing certified to all major global standards simultaneously.

The Global Premier brand is fully certified to relevant EN Standards and the new North American ASTM IEEE 103

The range includes garments for light liquid splash and particulate penetration

The **Global** Leader for Global Protective Clothing

Lakeland Industries Inc ...
Protection for workers the world over

Lakeland Industries is one of the largest manufacturers of industrial protective clothing in the world. Over 600,000 garments per week are manufactured in a global manufacturing base where the best quality control systems combine with low cost manufacture. The diverse product range includes disposables for protection against liquid chemicals, dusts and biological contaminants, flame and heat protective workwear, firefighters structural and wildland turnout gear, aluminised heat proximity suits, specialist polyester clean room clothing and a range of knitted and dipped gloves for heat, chemical and mechanical protection.

Global Manufacturing – Global Distribution – Global Certification - Global Support
Increasingly major end users of safety equipment are looking to standardise PPE throughout global manufacturing sites thus reducing PPE spend and ensuring PPE is correctly supplied for all employees. As the only manufacture of protective clothing with own manufacturing, distribution and sales centres throughout the world Lakeland is ideally positioned to provide such global solutions – including product design, specification, certification, logistics and technical support. In fact, Lakeland will shortly offer the first range of single use protective clothing to meet all major regional certification requirements.

Lakeland manufacturing supports a global sales network headed by key regional distribution centres in North America, Canada, Europe, Asia Pacific, the Middle East and Latin America. Each focuses on providing high quality products at competitive prices backed by excellent service to local markets through safety and industrial distributors. Throughout Lakeland's global manufacturing and distribution network quality is factor number one; quality derived from good manufacturing practices, quality derived from a clear recognition of the needs of customers; but also the quality of service resulting from sales staff with decades of knowledge of the industry and the products. When it comes to industrial protective clothing, Lakeland are the experts.

These are the reasons that workers worldwide are turning to Lakeland for their protective clothing requirements.

Because they want to Be Sure.
They want to Be Safe.

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