

# ChemMax® 1



Stitched & Taped Seams



## Lightweight coverall for Type 3 & 4 protection against a wide range of chemicals - 87gsm.

- Very lightweight, soft and flexible fabric.
- Low noise level - improved comfort and safety.
- Very cost effective Type 3 & 4 chemical protection.
- Infectious Agent Barrier - passes at highest classes in all four EN 14126 bio-hazard tests (version used extensively by UK Government health workers in 2015 West African Ebola Crisis).
- Cushioned double-layer knee pads for increased comfort and safety.
- Improved Super-B style coverall: superior fit, wearability and durability.
- Three-piece hood, inset sleeves and diamond crotch gusset results in best fitting garment on the market.
- New design three-piece hood with tapered center piece for superior face and respirator mask fit.
- New higher neck and zip flaps for improved face/neck protection.
- Double zip & storm flap front fastening for safe and secure protection

### Physical Properties

Property	EN Standard	ChemMax® 1 CE Class	Brand A CE Class	Brand B CE Class
Abrasion Resistance	EN 530	2	5	3
Flex Cracking	ISO 7854	2	3	6
Trapezoidal Tear	ISO 9073	4/3	1	2
Tensile Strength	EN 13934	2	3	2
Puncture Resistance	EN 863	2	2	2
Surface Resistivity	EN 1149	Pass	Pass	Pass
Seam Strength	EN 13935-2	3 / 170N	>125N	>125N

### Permeation Test Data \*

Liquid chemicals from EN 6529 Annex A. For a full list of chemicals tested see Permeation Data Tables or Chemical Search at [www.lakeland.com/europe](http://www.lakeland.com/europe). Tested at saturation unless stated.

Chemical	CAS No.	ChemMax® 1 CE Class	Brand A CE Class	Brand B CE Class
Acetone	67-64-1	NT	NT	1
Acetonitrile	70-05-8	NT	NT	Imm
Carbon Disulphide	75-15-0	NT	NT	Imm
Dichloromethane	75-09-2	NT	NT	Imm
Diethylamine	209-89-7	3	NT	Imm
Ethyl Acetate	141-78-6	NT	NT	Imm
n-Hexane	110-54-3	Imm	NT	Imm
Methanol	67-56-1	Imm	NT	6
Sodium Hydroxide (30%)	1310-73-2	6	6	6
Sulphuric Acid (96%)	7664-93-9	6	6	6
Tetrahydrofuran	109-99-9	NT	NT	Imm
Toluene	95-47-6	NT	NT	Imm

\* NB = normalised breakthrough. This is the time taken for the PERMEATION RATE to reach 1.0µg/minute/cm<sup>2</sup> in controlled laboratory conditions at 23°C. It is NOT the point at which breakthrough first occurs. **For safe use times see Selection Guide and PermaSURE®.**

Areas shaded green indicate where ChemMax® 1 is either equal to or better than the equivalent brand A and B products.



ChemMax® 1 is available in Yellow



### ChemMax® 1 Styles



**428**

Coverall with elasticized hood, cuffs, waist & ankles. Double front zip fastening, cushioned kneepads.  
**Size: S - XXXL**



**430**

Coverall 'Plus' with hood and attached feet/boot flap. Elasticized cuffs and waist. Double front zip fastening, cushioned kneepads.  
**Size: S - XXXL**



**C1S27Y**

Smock / Gown with rear entry / ties and elasticized cuffs.  
**Size: One Size**



**C1S650**

Apron with ties  
**Size: M - XL**



**400**

Encapsulated suit with flat back. To be worn with a breathing mask fed by compressed air hose. This can be fed through the air inlet hose to the mask worn inside the suit.  
**Size: M - XXL**



**450**

Encapsulated suit with expanded back. To be worn with self-contained breathing apparatus for breathing purposes.  
**Size: M - XXL**



**C1S860**

Sleeves  
**Size: One size**



**C1S903**

Overboots with anti-slip sole  
**Size: L-XL**

# Clothing For Protection against Hazardous Chemicals

Selecting the right chemical suit for the job is vital to ensure not only are workers properly protected but that they are not over-protected – which could mean paying more than you need for PPE and that workers suffer more discomfort than necessary.

Chemical protection is defined by **three key standards:**

Consider three key factors when selecting the most appropriate clothing for an application

**Type 4  
EN 14605**  
protection against sprays of hazardous liquids



**Type 3  
EN 14605**  
protection against jet sprays of hazardous liquids



**Type 1  
EN 943-1&2**  
protection against hazardous vapours and gases



**Type 4 Garments:**  
ChemMax® 1 EB  
MicroMax® TS Cool Suit  
ChemMax® Cool Suits  
Pyrolon™ CRFR Cool Suit

**Type 3 & 4 Garments:**  
ChemMax® 1 and 2  
ChemMax® 4 and 4  
Pyrolon™ CRFR, CBF

**Type 1 Garments:**  
Interceptor® Plus

*Note: Type 2 has been removed in the 2015 version of EN 943 so no longer exists.*

## 1. The chemical

- 'Breakthrough time' provided by (EN 6529 or ASTM F739) permeation tests can be used for comparison of fabrics but provides no information about how long you are safe.
- Consider the hazard presented by the chemical:  
*How toxic is it?*  
*Is it harmful in very small quantities?*  
*Is it carcinogenic or causes long term harm in other ways?*
- Is the application performed in a warm temperature? (permeation rates increase at higher temperatures). What effect does temperature have on the safe use time?
- Calculate a maximum safe use time using permeation rates, temperature & chemical toxicity.

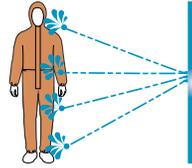
Use

**PermaSURE®**

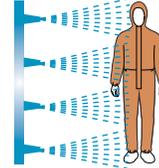
to calculate safe-use times for Lakeland chemical suits –  
**ChemMax® 3**  
**ChemMax® 4 Plus**  
**Interceptor® Plus**

## 2. Which hazard/spray type?

- Protection against gases and vapours may require a Type 1 gas-tight suit such as Interceptor® Plus
- The type of spray in the application indicates whether a Type 3, 4 or 6 garment is required.
- However, with a highly toxic chemical even if the spray type indicates a Type 6 garment, a higher level of protection might be appropriate.



**Type 3**  
Strong jet sprays



**Type 4**  
Shower sprays

Approximately 80% or more applications in the market are Type 4 and not Type 3.

## Type 3 or Type 4?

Determining that the application is Type 4 rather than Type 3 means selecting more comfortable options such as a **ChemMax® Cool Suit**.

## 3. Physical environment factors

- A variety of factors relating to the task and where it is performed can influence the choice of garment.
- Three groups of factors can be considered.

### Factors relating to :

The Task	The Environment	Others
For example: Kneeling / crawling? Climbing? Confined space? Mobility?	For example: Visibility?, Moving vehicles? Sharp edges?, Heat or flames? Warm conditions? Explosive atmosphere?	For example: Co-ordination with other PPE? Training required? Donning and doffing? Regulatory issues?

All such factors may influence the choice of fabric and garment design: (physical properties, colour, noise level and additional properties such as flammability).

CE Standard physical tests can be used to assess comparative performance in terms of durability using abrasion resistance, tear strength etc.



Use the QR Code or visit:

<https://www.lakeland.com/canada/brands/chemmax-1>

For more information about the factors that contribute to ensuring you select the most appropriate and effective chemical suit for the job, along with details on how to assess safe-wear times, download our **Guide to Chemical Suit Selection**



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