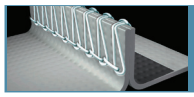
Pyrolon™ Plus 2

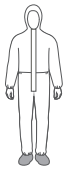


TYPE 5 | TYPE 6 | EN 1073-2 | EN 1149-1 | EN 14116 INDEX 1

Flame retardant Type 5 & 6 breathable coverall

- Pyrolon garments meet the requirements of EN 14116 (Index 1) for garment for protection against flames and heat.
- Fabric will not ignite, chars at low temperature and unlike standard disposables does not continue burning after the ignition source is withdrawn.
- Can safely be used over thermal protective garments without compromising thermal protection.
- Note that Pyrolon™ Plus 2 fabric will not ignite but is designed to wear OVER thermal protective garments and will not provide heat protection if worn alone.
- Intrinsic anti-static properties with very low surface resistance; anti-static does not wear off in use like standard disposables.
- 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 mazimise freedom of movement and negate the need for thumbloops.
- Two piece crotch gusset – enhances freedom of movement and reduced crotch splitting.

Pyrolon® Plus 2 Style



Style Code: 428
Coverall with elasticated hood, cuffs, waist and ankles.
Sizes: S - XXXL

Available in: White

Physical Properties

		Pyrolon™ Plus 2	Pyrolon™ XT	FR SMS Brand A	FR SMS Brand B
Property	**EN Std**	**CE Class**	**CE Class**	**CE Class**	**CE Class**
Abrasion Resistance	EN 530	**3**	2	2	1
Flex Cracking	ISO 7854	**6**	6	6	5
Trapezoidal Tear	ISO 9073	**2**	4/3	2	1
Tensile Strength	EN 13934	**2/1**	3/2	1	1
Puncture Resistance	EN 863	**2**	2	1	1
Burst Strength	EN 13938	**3**	2	n/a	n/a
Seam Strength	EN 13935	**2**	3	3	2

Chemical Repellency and Penetration EN 6530

	Pyrolon™ Plus 2		Pyrolon™ XT		FR SMS Brand A		FR SMS Brand B	
Chemical	**R**	**P**	**R**	**P**	**R**	**P**	**R**	**P**
Sulphuric Acid 30% CAS No. 67-64-1	**2**	**3**	3	3	3	3	3	3
Sodium Hydroxide CAS No. 1310-73-2	**3**	**3**	3	2	3	3	3	3
O-Xylene CAS No. 75-15-0	NT	NT	NT	NT	n/a	n/a	n/a	n/a
Butanol CAS No. 75-09-2	NT	NT	NT	NT	n/a	n/a	n/a	n/a

Note:-
Columns 3 and 4 contain comparative data for two commonly available FR SMS-based garment brands. The tests show that in most cases the Lakeland Pyrolon™ options feature superior properties.

However, whereas thermal mannequin testing to show predicted body burn when worn over a thermal protecting EN 11612 garment has been conducted on Pyrolon™, no such testing is available from the manufacturers of Brands A and B. Lakeland has conducted such testing for comparison purposes. The results are shown below:-

Thermal Mannequin Testing

	FSPE	Standard SMS	FR SMS	Pyrolon™ Plus 2	Pyrolon™ XT
Total % predicted body burn	23.9%	20.5%	19.6%	**7.4%**	**8.2%**
2nd degree burns	15.6%	12.8%	14.7%	**7.4%**	**8.2%**
3rd degree burns	8.3%	7.7%	4.9%	**0%**	**0%**

Note:-
1. The predicted body burn performance shows little difference between FSPE, Standard SMS and FR SMS with total body burn being close to 20% and including 3rd degree body burns of 5 to 8%.
2. The total predicted body burn for Pyrolon™ products is much lower at 7 to 8% with no 3rd degree burns apparent.
3. This proves both that Pyrolon™ products show a superior FR performance when worn over EN 11612 protective garments and that the additional cost of FR SMS garments over Standard SMS garments results in very little improvement in FR performance.

Why Use Pyrolon™ ?

Many applications require **both** thermal protection **and** chemical protection. How do you safely provide both?

- Why is wearing standard chemical suits with thermal protective garments a hazard?
- How do FR standards EN 14116 and EN 11612 standards differ?
- What is Thermal Mannequin testing and how do different garment types perform?

Why is wearing standard chemical suits with thermal protective garments a hazard?

Currently users often wear a Thermal Protective Garment (TPG) certified to EN 11612 for flame/heat protection and wear a standard chemical suit OVER it for the required liquid or dust protection.

This creates a HAZARD!

Why?

Standard disposable suit fabrics are based on polypropylene/polyethylene and in contact with flames will ignite and burn

Being thermoplastic they will melt and drip, adhering to the TPG fabric below, transferring heat energy to the skin beneath and to other surfaces, thus potentially spreading the fire.	In a flash fire situation this will dramatically increase the heat energy contacting the skin and thus the incidence of body burn.	Even in the case of contact with a small flame, a standard chemical suit fabric may ignite and cause burns.

Wearing a standard disposable suit over a TPG can dramatically compromise thermal protection.

How do FR standards EN 14116 and EN 11612 standards differ?

EN 11612

EN 11612 is the standard for measuring PROTECTION against different types of heat; convective, radiant, contact etc *(see page 38)*.

EN ISO 14116 INDEX 1/0/0

EN 14116 does not indicate any PROTECTION against flames or heat but is to indicate a fabric's flammability - the tendency to ignite and burn in contact with flame.

For Flame & Heat Protection a Thermal Protective Garment (TPG) certified to EN 11612 should be worn.

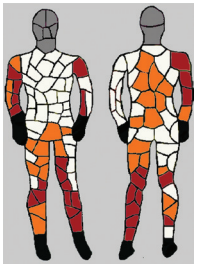
EN 14116 Index 1 garments can be worn over a TPG without compromising protection.

Lakeland Pyrolon™ garments use a unique viscose based fabric which will not ignite and are certified to EN 14116,

However, Pyrolon™ TPCR is certified to EN 11612 and, can REPLACE a standard EN 11612 TPG and provides chemical protection to Type 3 & 4.

What is Thermal Mannequin testing and how do different garment types perform?

Thermal Mannequin Testing provides a method of assessing the effectiveness of heat protective workwear by using e thermal mannequin (a mannequin covered in heat sensors) and simulating flash fires.



This test produces a body map showing Predicted 2nd and 3rd degree burns and so indicates how effectively a garment protects the wearer.

The table indicates how different Type 3 & 4 and Type 5 & 6 suits perform in this test when worn **over** a Thermal Protective Garment.

Type 3 & 4 coverall tests		TPG with Standard Chemical Suit **PBB = 53% including 3rd degree burns**		TPG with Pyrolon™ CRFR Coverall **PBB = 24% NO 3rd degree burns**	
Tests show Pyrolon™ CRFR results in a much lower incidence of body burn than with standard chemical suits.					
Type 5 & 6 coverall tests	TPG with FSPE coverall **PBB = 23.9% including 3rd degree burns**	TPG with Standard SMS Coverall **PBB = 20.5% including 3rd degree burns**	TPG with FR SMS Coverall **PBB = 19.6% including 3rd degree burns**	TPG with Pyrolon™ XT coverall **PBB = 8.2% NO 3rd degree burns**	TPG with Pyrolon™ Plus 2 coverall **PBB = 8.2% NO 3rd degree burns**
Tests show Pyrolon™ Type 5 & 6 coveralls result in a much lower incidence of body burn than with standard chemical suits. Note: there is almost no difference in performance between a standard SMS and an FR SMS. **PBB = predicted body burn**					