Technical Data Sheet

Summary	
Product	**Pyrolon TPCR**
Description	Multi-risk protection suit. Chemical (Type 3 & 4), heat and flame (EN16112), Arc (EN 61482) and anti-static in a single highly visible bright orange coverall. Ideal for on-site contractors where multiple hazards may be present.
Fabric & weight	Proprietary FR treated needle punched non-woven fabric coated with an FR PVC Film. 330 gsm.
Style *(see overleaf)	ETPCR428
Seam Type	Stitched and taped
Colour	Orange

Certification

EN Standard*	Description	Result
EN ISO 13688	Protective Clothing : General Requirements	Pass
EN 14605	Type 3 & 4: Protection against splashes and sprays of liquid chemicals	Pass
EN ISO 11612	Clothing to protect against heat and flame	A1/A2/B1/C1/D1/E1/F1
EN ISO 11611	Protective clothing for use in welding and allied processes	Pass A1 and A2
EN 61482-1-2	Protective clothing against the thermal hazards of an electric arc	4ka Class 1
ASTM F1959M-06a	ATPV / Arc Rating	E_{BT50} = 29.1Cal/Cm^2 ATPV 21.9Cal/Cm^2
EN 1149-1 EN 1149-5	Anti-static garment requirements: (Includes approval for ATEX requirements)	0.42 x 10^9

** All Lakeland garments are certified to the latest version of standards where possible*

Mechanical Properties

EN Standard	Description	Result	EN Class
EN 13934	Tensile Strength	74.2/79.3 N	Class 2
EN 530	Abrasion Resistance	500 Cycles	Class 2
EN 863	Puncture Resistance	15 N	Class 2
ISO 2960	Burst Strength	90 kPa	Class 2
ISO 7854	Flex Cracking	Cycles	Class 4
ISO 9073	Trapezoidal tear md/cd	65.2/63.2 N	Class 4
ISO 9073	Trapezoidal tear-mean	64.2 N	Class 4
ISO 5082	Seam Strength	347 N	Class 5

Chemical Repellency – EN 368 (for Type 6)

Chemical	EN Class	
	Repellency	Penetration
Sulphuric Acid 30%	Class 3	Class 3
Sodium Hydroxide 10%	Class 3	Class 3
O-Xylene	Class 3	Class 3
Butan-1-ol	Class 3	Class 3

Chemical Permeation – EN 6529 – For Types 1 to 4

The chemical list below is from EN 6529 Annex A2 and is intended to provide a broad spectrum of chemical types if general chemical suit assessment

Chemical	CAS No	Result / EN Class
Acetone	67-64-1	-
Acetonitrile	75-05-8	-
Carbon Disulphide	75-15-8	-
Dichloromethane	75-09-2	-
Diethylamine	109-89-7	-
Ethyl Acetate	141-78-6	-
n-Hexane	110-54-3	-
Methanol	67-56-01	-
Sodium Hydroxide (10%)	1310-73-2	Class 6
Sulphuric Acid (30%)	7664-93-9	Class 6
Tetrahydrafuran	109-99-9	-
Toluene	108-88-3	-

Breakthrough times are a reflection controlled lab tests measuring "Normalised Breakthrough" as the time to reach a *permeation rate* of 1.0µg/min/cm^2.
This does not imply "no breakthrough" and is not intended to indicate any duration of "safe-use" in any specific application. It is always the users' final responsibility to ensure a garment is suitable for the application.

Key Features

- Multi-risk protection limited life coverall with excellent heat protective properties and chemical protective properties
- Chemical barrier film with taped seams for Type 3 & 4 protection
- Double storm-flap front for added protection
- Dense fabric means excellent arc-flash protection with high ATPV of 21.9 Cal/cm2
- Bright orange in colour for easy identification
- Tough and durable, can be used several times if the garment is uncontaminated and undamaged

Suggested Applications

- Petrochemical industry – dirt areas where multi-risk protection is required
- On-site temporary contractors – supply all protection required in one suit

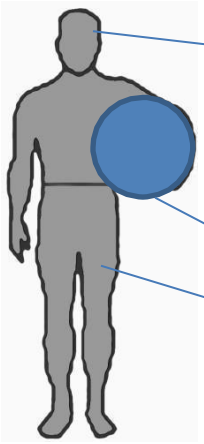
Lakeland

Technical Data Sheet

Other Information

Lakeland Super-B Style Pattern – ergonomic design for freedom of movement, comfort and durability

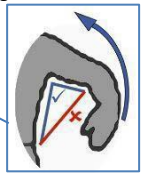
All Lakeland coveralls are constructed using Lakeland's "Super-B" style pattern. Using the company's global knowledge and experience of protective clothing this takes European CE and North American ANSI styles to produce a garment design which combines the best elements of both to produce a garment which is generous in size yet better fitting and allows greater freedom of movement.



The Super-B style consists of 3 key elements:-

Three Piece Hood

Many cheaper garments feature a 2 piece hood. Lakeland's 3-piece hood creates a 3D profile which fits the head better and allows greater freedom of movement. It also fits better with face masks when worn.



Inset Sleeves

Most European styles use a "bat-wing" style (red line) in which the under-arm reaches down to the waist. The argument is that it creates more room in the chest. However, THIS CLEARLY RESTRICTS MOVEMENT WHEN THE USERS REACHES ABOVE HIS HEAD, PLACING STRESS ON THE CROTCHAREA.
However, Lakeland use an inset sleeve (blue line) which follows the contours of the body and allows much greater freedom of movement

Two-piece diamond crotchgusset

Commonly garments have four seams – two body and two leg – that meet at one point in the crotch. This is a key weak point and often results in tearing and rip-outs. Lakeland inserts a two-piece diamond shaped crotch that spreads the stress and creates a more 3D fitting shape, improving wearer movement, comfort and enhancing coverall durability

The unique combination of three key elements of the Super-B style coverall makes Lakeland garments the best designed available

Other Design Features

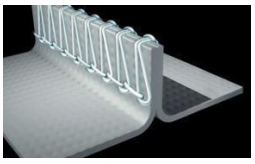
All Lakeland chemical suits (TomteX & ChemMAX) feature afront fastening consisting of a double zip with storm flaps. Thisensures both full protection against sprays to the front of the garment and easy donning anddoffing.
In addition ChemMAX garments (Except ChemMAX 4) featurewide double layer knee-pads to enhance comfort, durability and safety.

Sizing

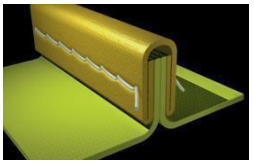
Size	Body Height	Chest
S	164-170cm	84-92cm
M	170-176cm	92-100cm
L	176-182cm	100-108cm
XL	182-188cm	108-116cm
XXL	189-194cm	116-124cm
XXXL	194-200cm	124-132cm

Seams

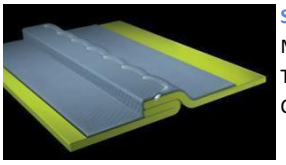
Lakeland garments use 3 types of seams:-



Serged or Stitched
Safegard GP
MicroMAX NS



Bound
Safegard 76 / Diamant
MicroMAX
Cool Suit



Stitched & Taped
MicroMAX TS
TomteX
ChemMAX

Storage, Shelf-life and Disposal

Storage

Lakeland garments can be stored in normal storage areas and require no special condition. Keep in cool, dry areas where possible and away from direct heat and sunlight

Shelf-Life

Lakeland coveralls are primarily manufactured from inert polymers (usually polypropylene and/ or polyethylene which should normally degrade over longer periods in excess of 10 years. Garments are supplied in sealed bags and so a shelf life of ten years or more should be reasonable under normal conditions. However, we recommend that after 5 years Type 3 and 4 chemical suits should be disposed of and replaced or used for training only. Some discoloration of especially white fabrics may occur over time though this will not affect performance. In any circumstances it is the users responsibility to check garments for damage tears or wear before use

Disposal

Polymers used in Lakeland garments are generally inert, non-harmful and non-toxic and can be disposed of by incineration or to landfill according to local regulations. However, any garments contaminated with chemicals must be disposed of according to the requirements of the chemical or cleaned before disposal