

ChemMax® 1 Encapsulating PAPR Suit



ChemMax® 1 fully encapsulating suit for use with the “e-breathe” Powered Air Purifying Respirator (PAPR)

- ChemMax® 1 fabric uses a single layer High Density PE barrier film to offer a light and flexible permeation barrier against a broad range of lower hazard liquid chemical splash and spray along with infectious agents and hazardous dusts.
- Fully certified to EN 12941 and achieving class TH3 – an inward leakage of less than 0.2%*.
- The PAPR unit provides filtered air fed to the hood through the PAPR hose with shoulder or head mounting positions, providing breathing air for a cool and comfortable wearer experience.
- The PAPR unit is belt- worn inside the suit at the waist, with the filters attached through gaskets, so is protected from contamination.
- Wide-vision visor for full round visibility.
- Rear-mounted viewing window makes monitoring of PAPR unit display screen and control panel operation easy.
- Breathable SMS collar with drawstring ensures breathing air is primarily maintained in the hood where it is most needed.
- Quick release emergency rip tape.
- Attached socks and gloves using the Lakeland Push-Lock glove connection system and providing a full Type 3 jet-tested seal.
- Stitched and taped seams for a strong and effective seal.
- Horizontal front-mounted zipper with double storm flaps.

Certified to EN standards:

- EN 12941: protective hoods for use with powered air purifying respirators.
- EN 14126: Infectious agent protection (Highest class in all pathogen resistance tests).
- EN 13034: Type 6 liquid aerosol spray protection.
- EN 14605: Type 4 liquid spray protection.
- EN 14605: Type 3 liquid jet spray protection.
- EN 1149-5: Anti-static: static dissipative clothing.

*Note: certified only for use with the PM Atemschutz e-breathe PAPR unit

PAPR Design and Features



Physical Properties

ChemMax® 1		
Property	EN Standard	CE Class
Abrasion Resistance	EN 530	2
Flex Cracking	ISO 7854	1
Trapezoidal Tear	ISO 9073	3
Tensile Strength	EN 13934	2
Puncture Resistance	EN 863	2
Surface Resistance	EN 1149-1	Pass* ($<2.5 \times 10^9 \Omega$)
Seam Strength	EN 13935-2	4

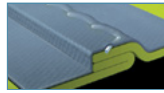
Infectious Agent / Biological Hazard Protection

Tested according to EN14126. This consists of 4 tests assessing resistance against different forms of pathogen contamination of the fabric only. Protective properties of the whole garment are defined by the chemical protective clothing type. We would always recommend a garment with sealed seams such as MicroMax® TS for protection against infectious agent hazards.

Test Description	Test No.	ChemMax® 1
Synthetic blood test*	ISO 16603 -class	6 (max is 6)
Protection against blood and body fluids	ISO 16604:2004	6 (max is 6)
Protection against biologically contaminated aerosols	ISO 22611:2003	3 (max is 3)
Protection against dry microbial contact	ISO 22612:2005	3 (max is 3)
Protection against mechanical contact with substances containing contaminated liquids	ISO 22610:2007	6 (max is 6)

The synthetic blood test ISO 16603 is a screening test for ISO 16604, does not carry a classification and should not be used as an indication of protection. The information is included here purely for comparison purposes only.

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Stitched & Taped Seams



TYPE 3-B



TYPE 4-B



TYPE 4-B



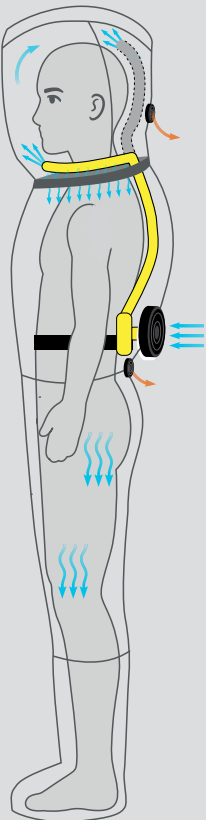
EN 1149-5



EN 14126

Superior Protection with the comfort of a constant air supply

How Does the PAPR Suit Work?



Secure Fastening

The PAPR unit is fastened to the waist with a belt, providing a secure and convenient placement.

External Filter Connection

The filters are connected through gaskets provided. The PAPR unit remains protected inside the suit, with the control screen accessible through the monitor window.

Purified Air Distribution

Drawing purified air through the filters, the PAPR unit effectively prevents the entry of hazardous elements into the suit. The air is then channeled through the unit's hose to the hood, which can be secured using hook and loop straps. The hood offers two supply options - over the shoulder or over the head - ensuring maximum comfort and flexibility.

Semi Permeable Collar

The maintenance of breathing air is crucial, and the semi-permeable collar with an adjustable drawstring is designed to keep the primary air supply in the hood before filtering it into the rest of the suit. This feature guarantees that the air supply remains pure and uncontaminated.

Effective Ventilation

To ensure effective ventilation, the suit features three one-way valves for exhaling air. Two valves are located at the back of the hood, while the third valve is positioned at the waist, providing efficient and safe airflow.

Note: It is the users responsibility to ensure the correct filters to protect against the relevant hazard are selected for the PAPR Unit.

Key Benefits of Choosing a PAPR Suit...



Superior protection compared to coveralls

Although not gas-tight, air-fed PAPR suits maintain a positive pressure inside the suit, so any air-flow (through valves, zipper or other construction elements) is from inside to outside, making ingress of gases or vapours unlikely.



Superior comfort compared to coveralls and gas-tight suits

Chemical suits are uncomfortable to wear by nature, but PAPR units provide a constant, filtered air flow into the suit, initially to the hood for breathing purposes, and then into the rest of the suit through the semi-permeable neck collar. This gentle, continuous air flow helps regulate temperature and keeps the wearer cooler and more comfortable.



Enhanced mobility

Unlike suits with remote, attached airlines that limit movement to the length and flexibility of the line, PAPR suits allow greater mobility, enabling the wearer to move freely as needed. With the e-breathe unit's 8 to 10 hour battery life, the wearer has the ultimate in mobility.



Work for longer periods

Compared to wearing a PAPR hood, use of a full PAPR suit allows longer working periods with greater flexibility whilst maintaining comfort.



Electrostatic-Discharge (ESD)-Safe

All Lakeland PAPR suit fabrics are certified to the EN 1149 anti-static standard, to ensure the fabric will dissipate electro-static charges without causing harmful ESD*. Additionally, since the battery-operated PAPR unit is worn inside the suit instead of externally, it does not need to be anti-static.

*Note: Static dissipation requires a suitable route to earth

The PM Atemschutz e-breathe e-flow PAPR Unit - a tough, flexible, all-rounder

Over three decades P.M. Atemschutz have become leading experts in respiratory protection and gas warning devices. Based in Mönchengladbach, product design, development and production are maintained in Germany, so users benefit from the confidence of German know-how and engineering. The partnership between Lakeland and P.M. Atemschutz for the new PAPR range of protective clothing combines the expertise of two world-leading PPE manufacturers.



Fully flexible modular system with comprehensive filter and accessories range

The modular e-breathe Powered Air Purifying Respirator is a tough yet flexible all-round option, perfect with Lakeland's PAPR overall.

- Slim, light, ergonomic, user-friendly design.
- Filter system provides effective protection from gases, vapours and particles, with quick and easy replacement when saturated.
- Modular design with interchangeable filter boxes allows flexible configuration, whether connecting to DIN round filters, an e-breathe ecoPAD filter, or a three-filter system.
- Three-stage adjustable air-flow with 160, 180 and 200L/min settings means flexibility to adjust to working conditions.
- Smart system performs a complete check at switch-on, ongoing monitoring and audible, visual and vibration warning alarms for low volume, full filter, and low battery power.
- The quick-charge Li-ion battery (up to 80% in 1 hour & full charge in 3 hours) has a life of up to 8 to 10 hours.
- Easy-access control screen (visible through the PAPR suit viewing port) displays full range of control data
- USB interface allows read-out and configuration on a PC or laptop.