

The CBRN
Protective Suits

TESIMAX[®]

» NEXT LEVEL
« PROTECTION

CPS Workbook 2024

PROVEN IN EXTREME SITUATIONS

TURNOUT GEAR FROM TESIMAX™



Glossary	
CPS	Chemical protective suit
SCBA	Self-contained breathing apparatus
F-AU	Forced ventilation system with automatic changeover
NBC	= Nuclear, Biological, Chemical
CBRN	= Chemical, Biological, Radioactive, Nuclear
ET*	Unlimited use for emergency teams/firefighters
B	Protection against biological hazards
TESIMAX protective suits	
• ESK	Light-duty protective clothing (particle/liquid-tight, according to EN types 3–6, B) ESK 1, ESK 2, ESK 3, ... (-> the higher the ESK number, the higher the protection level)
• VSF 21	Totally encapsulated suits with forced ventilation (powered filter units, according to EN 943/EN 1073 type 1c/3B)
• GS 3	Gas-tight protective suit with SCBA outside (gas-tight, according to EN 943 type 1b, B (ET))
• GS 3	Like GS 3 but with permanently integrated mask (gas-tight according to EN 943 type 1b, B (ET))
• VS 5	Totally encapsulated suits (gas-tight, according to EN 943 type 1a, B (ET)) with permanently integrated 3-layer laminated visor / 130 cm, gas-tight zip; alternatively with 180 cm gas-tight zip or upgrade to VS 20 series (ex factory)
• VS 20	Totally encapsulated suits (gas-tight, according to EN 943 type 1a, B (ET)) with triple laminated interchangeable mask window (for ANGEL SENSOR systems), 180 cm gas-tight zip (Smart Handling)
• VSF 20	Totally encapsulated suits with compressed air forced ventilation system (gas-tight)
• VSF 5	according to EN 943 type 1c, B (ET) with triple laminated mask window, 130/180 cm (Smart Handling), gas-tight zip

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TESIMAX international



We are here for you



The intelligent protective suits

Who we are We make the best chemical protective suits and turnout gear in the world – for when it really matters. That is our guiding principle. It is what emergency services need at the “front line”.

We can look back on more than 40 years of success in achieving this aim, rooted in the leading-edge developments and motivation of our company founder and first-generation managing director Winfried Altinger. And we will continue to succeed.

People are at the core of our corporate culture. After all, team and network performance are vital for providing the most sophisticated technology and superior safety. That is our greatest strength.

Together with you, our employees and our partners, we will continue along this path. Step by step, following the TESIMAX philosophy. Join us in achieving this aim.

Sabine Egner & Sven Altinger

Managing Partners



EN 1149-5
(permanent)



High Performance
Plastics



PARA-ARAMID



High Performance
Elastomer



See for yourself

TESIMAX customers are welcome to visit us by appointment at our headquarters in the Black Forest region between Karlsruhe and Stuttgart.

Take advantage of personal, face-to-face advice for our core product areas:

- Chemical Protection
- Turnout gear

We also offer a fringe programme that is tailored to your specific needs. We will help you find accommodation and with your journey to our premises (for example from Pforzheim railway station or Stuttgart airport).

PASSION AND PRECISION

In the TESIMAX factory, you will gain valuable insights into the construction of chemical protective suits for firefighters:

- Our guided tour covers all production areas – from the cutting room to final assembly.
- Around 40 employees and apprentices work here.

Incorporated into our European production network, gas-tight protective suits for firefighters and industry are produced here every day. On your visit, you can also gain an insight into the fabrication of personal protective equipment at our production network sites.

Contact us for your personal day at TESIMAX.





Technology, safety, maximum

Three strong words which, for us, form one entity: TESIMAX

1990: The revolution. The VS 10 SYKAN 3 with HPE para-aramid.
Or the SILVERFLASH. Full heat and chemical protection in a single suit.

Light into the dark? ANGEL LIGHT will guide you.
Innovations resulting from this entity.

Like the protective suits in the SYKAN 4 series, for instance. Tested and approved in accordance with European guidelines, these products exceed the minimum requirements by a wide margin. In emergency situations, the chemical and mechanical protection characteristics provide thermal resilience from approx. -200 to +1000 °C. Continuous testing guarantees safety right down to the finest detail before equipment is delivered anywhere in the world.

TESIMAX protective suits have proven themselves in many extreme situations for more than 40 years: on high seas, in industry, in gas and oil fires, nuclear power stations, with fire brigades and disaster control units around the globe.

Consistent development ensures our position as technology leaders in personal protective equipment.

**Welcome to the world of intelligent protective suits
from TESIMAX. Suits that give you more.**



Looking for a patented solution? Look no further than ANGEL LIGHT.

A fully automatic LED lighting system integrated into the visor that turns night into day, without additional lamps.

This leaves the wearer's hands free to concentrate on the job in hand.

**Other TESIMAX inventions, too, help the wearer and
make their job easier even in extremely hazardous situations:**

- ANGEL SIGNAL – the unique LED head-up display
- ANGEL EYE – the unique video transmission system
- ANGEL CONTROL – the unique smart sensor system

Patents & property rights

TESIMAX protective suits not only provide the highest protection level; they also redefine this benchmark.

This is reflected in numerous EU (PCR) patents and (DE) reg. utility models, such as:

- ANGEL SIGNAL, ANGEL LIGHT, ANGEL EYE, ANGEL CONTROL
- SEAM COVER TAPES for SYKAN and SILVERFLASH
- TESIMAX CPS fabric structures (protected processes)
- TESIMAX CPS breathing air supply system
- TESIMAX CPS interchangeable mask window and visor structure (VS 20 & VS 5 series)
- Safe ventilation technology at the interface between powered filter unit and protective suit (VSF 21 series) and when using the protective suits & units in action
- Components such as CPS brace systems, integrated firefighter rescue harness systems and firefighter functional wear in PPE combination (EN 469)

We are pioneers that pave the way for new ideas.
For more than 40 years, TESIMAX has been continually extending its leading position as a developer.

**Further details at www.tesimax.de and on our so-
cial media channels**

Modular design of TESIMAX products

At TESIMAX, customers can choose from a wide range of products to assemble a personal protection system best suited for the application. This avoids all excess and focuses on what is important, which also helps save resources.

TESIMAX real reusable products

In this age of throw-away culture, TESIMAX has achieved a reusability of its products of up to 90 %, both before and after operations. This is made possible by our extensive expertise.

All reusable chemical protective suits have a service life of 10 years plus optionally a further 5 years.

All reusable products can be repaired as long as economically viable.



REAL-REUSABLE

Product sustainability

Product lifecycle

At TESIMAX, sustainability begins with product development. Every idea in the field of personal protective equipment is also scrutinised for its physiological (e.g. stress-reducing) psychological (e.g. mental stress) and environmental aspects (e.g. reusability). As well as benefiting from the products' characteristics, you profit from 100% sustainability and efficiency throughout their lifecycle.

And then? TESIMAX is committed to taking back all protective suits for controlled disposal. To save resources, some of the suit fabrics can be reconditioned for reuse and reusable CPS components can be recycled.

Social responsibility

To ensure our continued success, secure jobs and the economic viability of our operational sites, sustainability is a core element of the TESIMAX strategy (see also "Product sustainability") – an opportunity for commercial, ecological and social progress.

This policy is integrated into our processes with clearly defined, transparent sustainability targets for all business units. As our customer, you can join us in achieving this aim.

In addition to the ongoing development and qualification of our employees, our company philosophy covers equal opportunities, diversity, participation in the decision making process, an ongoing improvement of work-life balance as well as fair, performance oriented pay. These are the core values of our family-owned company.

We fight against corruption and practice fair competition, respect adherence to internationally recognised human rights and categorically reject forced and child labour of any form.

TESIMAX supports, for example, the European Support Team in setting up a regional fire brigade and ambulance service in western Kenya.

TESIMAX is committed to the principles of the "Ethical Trading Initiative Base Code". These recommendations comply with the standards of the International Labour Organisation (ILO).

Environmental protection

The responsible use of natural resources is a further key aim of our company. This includes minimising the environmental impact of our development and production processes. Along the entire value chain, environmental compatibility and the efficient use of energy are continually monitored and improved where necessary.

Our electricity needs are drawn entirely from our own modern photovoltaic installation and other green energy sources.

This catalogue has been printed and produced according to FSC® guidelines.

The FSC® (Forest Stewardship Council) is a globally active independent organisation that promotes responsible, sustainable forest management to conserve the world's forests. It specifies strict criteria that are intended to prevent uncontrolled deforestation, breaches of human rights and environmental damage.



The fire salamander

The fire salamander is at home mostly in woodlands. In Germany, it is found especially in the central, western and south-western regions.

Being common in the region of Württemberg, in which the TESIMAX head office is located, the fire salamander stands for environmental protection at TESIMAX.



Confidence in textiles & quality

TESTED QUALITY

All TESIMAX products are tested, approved and monitored.

PPE EU STANDARDS/QM System

- PPE Regulation (EU) 2016/425
- ISO 9001 QM (NATO AQAP)
- Marine Equipment Directive according to module D
- PPE monitoring according to module C

NOTIFIED BODIES/INSPECTION BODIES

- EU NOB Institute: OETI (CE 0543) & Hohenstein (CE 0555)
- BG VERKEHR (CE 0736)

Our employees

TESIMAX is committed to a team-oriented working practice. Our modern production facilities, as well as ensuring high quality at reduced energy consumption (geothermal energy, photovoltaics, etc.) guarantee a safe and healthy working environment for our employees.

Because only a motivated team can guarantee quality state-of-the-art products. And as our products are designed to protect lives, that is extremely important.

Textiles you can trust

The textiles are made of fabrics that are free from toxic substances. In our turnout gear, we use only fabrics tested to the OEKO-TEX 100 standard.

In production and assembly, we use state-of-the-art processes to protect also our employees' health.

Quality management and monitoring according to European PPE Regulation (EU) 2016/425, to which TESIMAX PPE is tested and certified (CE).

"Our products reflect our exceptionally high quality standards."
(EN ISO 9001)

The TESIMAX QM systems according to EN ISO 9001, PPE Regulation (EU) 2016/425 Module C/Module D comply with the basic requirements of the NATO AQAP QM system.

"To maximise quality, we work together with experts, such as the maritime employers' liability insurance association in Hamburg."
Production quality control (Module D) – EC marine equipment/PPE Regulation (EU) 2016/425

CE Audit (PPE Regulation (EU) 2016/425)
Additional PPE monitoring through our partner institutes NOB & Hohenstein (Module C QM system)

Disclaimer

The use of these systems is at the end user's own risk. Always observe the product guidelines and all relevant safety regulations for your application, in particular the corresponding TESIMAX user manual for your protective suit. This document does not in any way represent a warranty by TESIMAX. TESIMAX is not under any circumstances liable for damages incurred by the buyer or commercial user of a protective suit in the event of injuries (including death), material loss or damage, consequential costs, loss of income or other damage or losses of any kind.



Experience that you can trust

Innovative developments, such as SYKAN®, SILVERFLASH® and the patented ANGEL SENSOR SYSTEMS products (ANGEL LIGHT®, ANGEL SIGNAL®, ANGEL CONTROL® and ANGEL EYE®) clearly demonstrate:

We are committed to saving and protecting human lives. And don't think that it just stops there! Remaining true to our conviction we will continue to do what we do best!

Quality of the future

Technology Made in Germany

"There are companies in the world that are larger than TESIMAX," says Sven Altinger, who manages the company together with his sister Sabine Egner, "but in our sector, we are the technology leaders." And not just in Germany: Whether in Russia or China – wherever we go, we are understood, in a growing number of countries. With a worldwide centrally managed network, we are seen as a streamlined, convincing and flexible enterprise."



TESIMAX
YouTube channel



Black Forest Performance

Automotive sector

The fire departments of numerous car manufacturers in Germany value the premium products from TESIMAX, especially in the field of chemical protection and firefighter turnout gear.

Chemical industry

"In my long and intensive working life, I was always impressed by the suits' protection performance and the excellent cooperation with TESIMAX... Highly recommended!"
(manager of a works fire brigade)

Utilities

"The safety requirements in German power stations are among the strictest in the world. That's why we have been using TESIMAX products for more than 25 years."
(Experts and managers of various utility companies and nuclear power stations in Germany)

(Maritime) industry

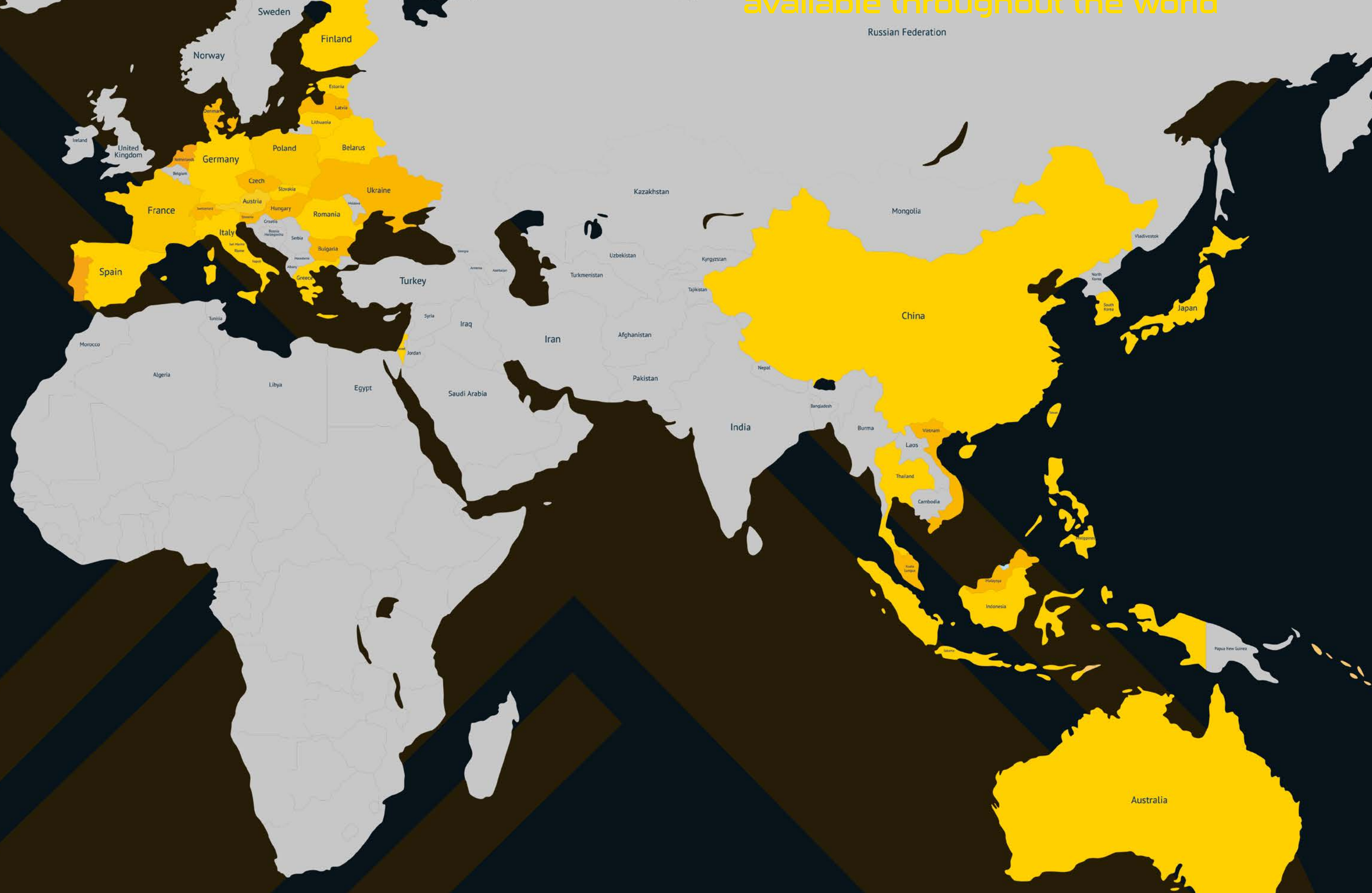
In industry, "Made in Germany" is synonymous with quality. This goes for every one of our products – down to the smallest detail. That's what matters.

Military and national authorities

Our products serve only to protect human life. We emphasize this fact with all of our customers.



Made in Europe -
available throughout the world





Technical data

The intelligent chemical protective suits

Every product of the TESIMAX® brand provides maximum safety, reliability and quality.

Our chemical protective suits, such as the VS 20 SILVERFLASH®, are considered state of the art throughout the world and provide the highest available protection level – products you can rely on to keep you safe in extreme situations.

Chemical protective clothing – types

For all activities in the field of NBC (nuclear, biological, chemical) requiring special (chemical) protective clothing, we offer special solutions with a modular design:

1. Work and emergency assistance in the hazard areas with a very high hazard potential
(Type 1, e.g. CPS VS 5/20, VSF 5/20 and GS 3/M series)
2. Measurement and monitoring tasks at the perimeter of hazard areas with a manageable hazard potential (Type 3, e.g. ESK series S3–S5 PE and VSF 21 series)
3. Tasks with a low hazard potential, such as decontamination
(Types 4–6, e.g. ESK series ESK 1 PE, ESK 1 T plus, ESK 1 T)

Chemical protective clothing – applications

We manufacture chemical protective suits for firefighters, with built-in full-face masks for industry and military, suits with forced ventilation, training suits, contamination protective clothing for firefighters and nuclear installations, light chemical protective clothing for industry and civil authorities (disaster relief and prevention, police and fire prevention).

CHEMICAL PROTECTION



Industry



Military
Civil defence



Chemistry
Pharmaceuticals



Shipping



Clinics



Power utilities



Fire services



The PPE* EN standards (*PPE = Personal Protective Equipment)

Classification of personal protective clothing according to European PPE Directive 89/686/EEC (PPE Regulation (EU) 2016/425)

Types 1a, 1b and 1c (ET) – gas-tight protective suits

EN 943-1:2019-06 (CPS/protective suits permissible for industry/works fire brigades in Europe)
Protective clothing against dangerous solid, liquid and gaseous chemicals, including liquid and solid aerosols - Part 1: Performance requirements for Type 1 (gas-tight) chemical protective clothing, including supplementary standards:

- EN ISO 13688:2013: Protective clothing - General requirements (ISO 13688:2013)
- EN 388: Protective gloves against mechanical risks
- EN 14325:2018 Protective clothing against chemicals - Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages
- EN 1073-1:2016+A1:2018: Protective clothing against solid airborne particles including radioactive contamination - Part 1: Requirements and test methods for compressed air line ventilated protective clothing, protecting the body and the respiratory tract
- EN standards for breathing apparatus: EN 132, EN 136, EN 12021, EN 13274, EN 14593, EN 14594

EN 943-2:2019-06 (CPS/protective suits permissible for voluntary and professional firefighters in Europe)
Protective clothing against dangerous solid, liquid and gaseous chemicals, including liquid and solid aerosols - Part 2: Performance requirements for Type 1 (gas-tight) chemical protective clothing for emergency teams (ET), including supplementary standards:

- EN 943-1:2015+A1:2019 and its supplementary standards
- EN 15090:2012, Footwear for firefighters
- ISO 17491-1: Protective clothing against dangerous solid, liquid and gaseous chemicals, including liquid and solid aerosols.
 - Test method: Determination of leak tightness of gas-tight protective suits (internal pressure test)

EN 943: INFO IDENTIFICATION IN ACCORDANCE WITH STANDARD (product label/user manual)
Code 1a, b and c = type classification (according to EN 943-1:2019-06)
1a = internal SCBA/totally encapsulated suit, gas-tight
1b = external SCBA/totally encapsulated suit, gas-tight
1c = without SCBA, with compressed/external air/
totally encapsulated suit, gas-tight (only for industry)

“ET” stands for Emergency Teams and includes approval for firefighting (according to EN 943-2:2019-06)

EN 943: Worldwide acceptance

- EN 943 for protective clothing has been the European standard since 2002 and is recognized and used throughout the world and applied in Asia, the Middle East, South America and Australia.
- Protective suits for the US economic area, where the NFPA Regulation applies, are excluded. The US NFPA regulations cannot be compared in detail with the European standards. The aim of protecting the wearer/end user (gas-tightness, heat and chemical resistance) is guaranteed independently by both standards (EN/USA). However, a protective suit can only be used with the correct approval (i.e. either EN (EU) or NFPA (USA)) in the respective economic area. A combination of standards for a protective suit is misleading for the end user and irrelevant for the respective economic area.
- ISO 17723-1:2019-08
PPE ensembles for firefighters undertaking hazardous materials response activities - Part 1: Gas-tight, vapour-protective ensembles for emergency response teams (“type 1”). Protective suits according to EN 943 Parts 1 and 2 comply with ISO 17723-1:2019.

EN ISO: WARNINGS

- Only the EN standards apply Europe – without additional requirements or directives (inadmissible).
- Only EN 943-1:2019 (industry)/EN 943-2:2019 (firefighting) including their tested supplementary standards (see above) guarantee the maximum (gas-tight) protection for the end user and insurance coverage according to European law.
- Any national supplementary regulations are not legally sound and do not comply with the law.
- Any additional national guidelines cannot form a basis for insurance, as they “bypass” EN ISO standards and are therefore misleading.

- Protective suits that are advertised as “gas- and air-tight” but do not comply with the EU minimum requirements (chemical, mechanical, gas-tight) of EN 943 (for industry/fire brigades) are not permitted. TESIMAX defines these as “FAKE SUITS”!

- Always observe the manufacturer’s label of the CPS (Types 1–6, ET, standard, pictogram, CE mark, test number, notified body).
- Observe the validity of the product certificate (only with unique identifier/type declaration according to EN standards).
- Observe the validity of the necessary QM system (ISO, Module C, Module B, MED, etc.).



Type 3 – Liquid-tight protective suits
EN 14605:2009-08
Protective clothing against liquid chemicals – Performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4])



Type 4 – Spray-tight protective suits
EN 14605:2009-08
Protective clothing against liquid chemicals – Performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4])



Type 5 – Particle-tight protective suits
EN ISO 13982-1:2011-02
Protective clothing for use against solid particulates - Part 1: Performance requirements for chemical protective clothing providing protection to the full body against airborne solid particulates (type 5 clothing) (ISO 13982-1:2004 + Amd. 1:2010)



EN ISO 13982-2:2005-03
Protective clothing for use against solid particulates - Part 2: Test method of determination of inward leakage of aerosols of fine particles into suits (ISO 13982-2:2004)

Type 6 – Protective suits with limited spray-tightness
EN 13034:2009-08
Protective clothing against liquid chemicals - Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] impregnation)



Extended standards, specifications, material tests:

Protective clothing against infective agents
EN 14126:2004-01
Protective clothing - Performance requirements and test methods for protective clothing against infective agents
EN 14126 corrigenda 1:2005-02
Corrigenda to EN 14126:2004-01



Protective clothing tested according to EN 14126 guarantees resistance to the penetration of biologically contaminated liquids (germ penetration when wet). The special requirements for protective clothing materials against infective agents guarantee the protection of the skin and the wearer against possible contact with biological substances and help to prevent the spread of germs. Protective suits certified according to EN 14126 can be recognized by the pictogram for biological hazards and by the suffix “B” in the label/designation (e.g. type 3-B).
The EN 14126 standard stipulates the following tests for the material of protective clothing:
Penetration test with artificial blood (ISO/FDIS 11603)
Resistance to viruses (ISO/FDIS 16604)
Resistance to bacteria (ISO/DIS 22610)
Resistance to bio aerosols (ISO/DIS 22611)
Resistance to contaminated dust (ISO/DIS 22612)

NOTE: Letter “B” in the product label (B = biological)

Protective suits with antistatic properties
Observe explosion protection (EN 1149-1) for working in explosion risk areas (Zones 0–22). The static inhibitor is effective only when the relative humidity lies above 30 percent. Note that only the clothing fabric is dissipative. To avoid sparks generation, make sure that protective clothing and wearer are properly earthed and use static inhibitor.



Protective suits for maritime use
(maritime shipping)
Protective suits tested and approved according to the MED (Maritime European Directive) Annex A1. SOLAS 74/88 Chapter II/2 Regulation 19.3.6.1



Protective suits for nuclear protection
EN 1073-1:2018-10
Protective clothing against solid airborne particles including radioactive contamination - Part 1: Requirements and test methods for compressed air line ventilated protective clothing, protecting the body and the respiratory tract

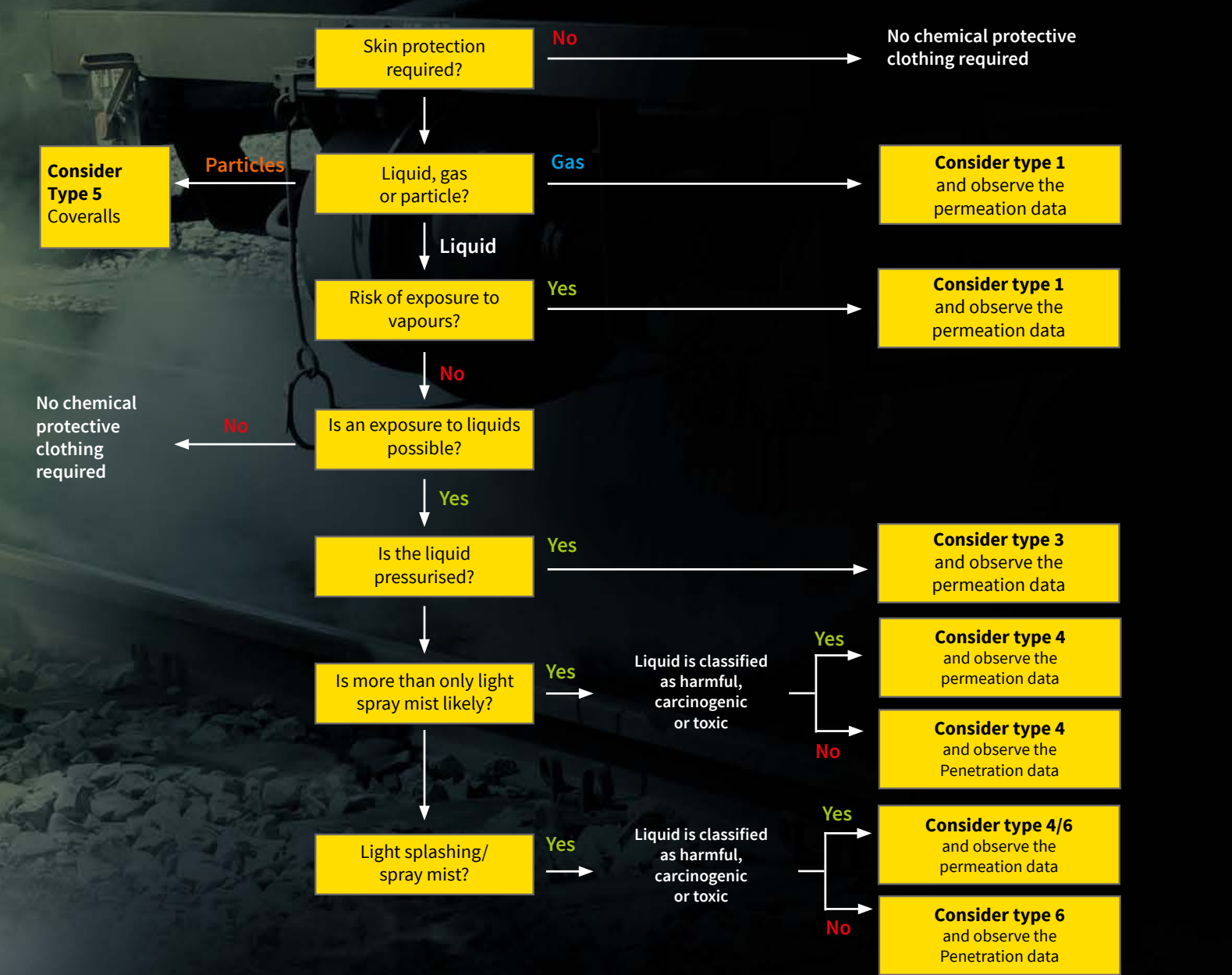


Your guide for the right chemical protective suit (CPS of types 1 to 6 according to EN standards)

Protective suit quick selector by specifications and protection level (Types 1 to 6)

Important note:
This chart is a highly simplified quick selection aid. To determine the right chemical protective clothing for your specific application, a personal consultation with TESIMAX is always necessary. The responsibility for assessing the risks and hazard potential ultimately always lies with the end user, who therefore also has full liability (risk analysis according to national/international regulations). The end user should be a suitably qualified safety specialist.

- For further (detailed) information see also:**
- The technical Appendix of this catalogue
 - The user manual, incl. maintenance videos (separate customer information; please enquire)
 - Our website (short CPS presentation videos)
 - Contact TESIMAX directly; see www.tesimax.de.



The base layer made of 100% para-aramid

In extreme situations, take advantage of the safety of TESIMAX para-aramid advanced quality Used in protective suits made of SYKAN® 4 and SILVERFLASH®:

Basic properties:

In extreme situations, take advantage of the safety of TESIMAX protection suits with para-aramid base fabric. Used in protective suits made of SYKAN® 4 and SILVERFLASH® with the following performance characteristics:

- Excellent resistance to decomposition under heat
- Outstanding tensile strength and fatigue resistance:< the fibres have five times the strength of steel at the same weight
- Excellent cut and puncture resistance
- Para-aramid fabrics are very lightweight
- Superior resistance against chemicals
- Long-term dimensional stability
- Low weight
- Heat- and low-temperature resistant
 - Up to +180 °C, para-aramid retains its room-temperature properties almost unchanged.
 - Does not melt and is self-extinguishing
 - Its charring point is at +425 °C.
 - No significant embrittlement or strength reduction down to -196 °C.

TESIMAX is known throughout the world for its use of this high-performance material in its SYKAN® 4 and SILVERFLASH® chemical protective suits, having used para-aramid for more than 40 years. Our suits thus protect the suit wearer in extreme conditions – with a proven track record throughout the world.

Available only for models made of SYKAN and SILVERFLASH



PARA-ARAMID

INSIDE/OUTSIDE COATING made of 100% HPE (high-performance elastomer)

In extreme situations, take advantage of the safety of TESIMAX HPE elastomer – Advanced Quality Used in protective suits made of SYKAN® 4 and SILVERFLASH®:

Basic properties:

- Very good resistance to chemicals and gasses (low air permeability)
- Very high mechanical strength
- Self-extinguishing – the flame-retardant materials are incorporated in the fabric's fibres and remain harmless when they decompose (environment-friendly and safe for wearer)
- No fabric softener (environmentally friendly and safe for wearer)
- Electrically insulating (very good protection in hazardous (Ex) areas)
- Excellent ageing resistance (extremely ozone-resistant and long-term colourfast)
- A long service life even under dynamic load and harsh deployment conditions.
- High elasticity and long service life, proven in practice
- Wide temperature range – continuous temperatures of -40 °C to +150 °C and -100 °C to +850 °C
- Excellent abrasion-resistance and mechanical strength
- High reuse potential – low operating costs and fewer non-usage times
- Nano-effect outer skin: very low to zero adhesion to all substances

Available only for models made of SYKAN and SILVERFLASH



High Performance Elastomer

The chemically resistant HPP protective barrier

In extreme situations, take advantage of the safety of TESIMAX HPP barrier – Advanced Quality Used in protective suits made of SYKAN® 4 and SILVERFLASH®:

Basic properties:

- Outstanding resistance to nearly all chemicals, gasses, particles and liquids.
- Excellent mechanical properties
- Flexible and elastic
- Outstanding electrical properties
- Free from additives – pure fabric of foodstuffs grade 9
- High temperature resistance
- Very low to zero adhesion to all substances

PERFORMANCE TP

Smart derivation of the described HPP technology but with limited chemical protection capabilities (e.g. solvent) and temperature range (-30 to +70 °C)



High Performance Plastics



Performance PLASTICS



Performance TP



FABRIC SUPERSTRUCTURES

Fabric T/T plus

The T/T plus fabric is a newly developed spunbonded nonwoven, multi-layer polypropylene fabric with outstanding wearing and protection properties.

- Outstanding abrasion resistance, tear resistance and seam strength for a long service life
- Special protection is offered by the very high impermeability to dust (protection against radioactive dust) and the excellent impermeability index against numerous water-soluble chemicals. Despite these outstanding protection properties the fabric offers an excellent wearing comfort.
- Special feature, T:(Type 5-6, colour: white or blue), breathable, particle-tight, antistatic
- Special feature of T plus: (Type 4-6, colour: white), breathable, particle- and spray-tight, antistatic

T PLUS



PE-D fabric

The PE-D fabric (Duoform®) has good electrical properties, carries no electrostatic charge and has a residual potential discharge time that is neither too long nor too short. Protective clothing with seam covering with heat-activated adhesive tape (also Types 4, 5 and 6), with excellent NBC (nuclear, biological and chemical) protection and limited flame-retardance; self-extinguishing (Type 3b, colour: yellow)

- APPLICATION AREAS: Pest control; emergency operations after incidents with propagation and leakage of hazardous substances; petrochemical industry; metal processing; mining; production; treatment and transport of chemicals; military; waste processing; water treatment; veneering; PCB reconditioning, firefighters

The PE-T material: The Tessaform® PE-T fabric offers increased mechanical as well as biological and high-quality chemical protection and is particle-tight (radioactive particles), liquid-tight and antistatic.

- The fabric offers superior mechanical properties for a limited use protective suit (Type 3-B, colour: grey).

ESK 1 PE-D



S3/S5 PE-T

CHEMBA® fabric

The CHEMBA (Eptaform) fabric consists of a highly chemicals-resistant barrier laminate on the inside and outside (double wall construction), with a mechanically robust spun-lace fleece sandwiched between the two layers (two-fold safety). Provides maximum protection, especially against mechanical impact (puncture resistance class 3 according to EN 943). The unique technology offers the superior, unlimited safety in use. Nevertheless, the VS 5 CHEMBA protective suit is ultra-light and flexible. Bright orange signal colour for increased work safety.

- Excellent chemical protection and gas-tightness tested according to EN 943-2 ET for 15 reference chemicals, tested for over 150 chemicals with up to 8 h resistance
- Outstanding protection against gases, tested against liquid war gases according to Finabel 0.7 C, Nato standard with up to 24 h resistance
- Good protection against contaminated liquids (tested according to EN 14126 B)
- Good dust-tightness (e.g. radioactive particles; tested to EN 1073-2)
- High mechanical stability, including high-quality sewn and thermo-taped seam covers
- Gas-tight zip with cover panel made of suit material
- Good wearing comfort through ultra lightweight design (less than 2 kg for VS 5 CHEMBA!)
- Non-adhering top layers for better decontamination (nano effect)
- Good antistatic and insulating properties (tested to EN 1149 in combination with static inhibitor)
- Semi-rigid, flexible multi-layer barrier visor, antifog for a clear field of vision, excellent chemical resistance corresponding to the suit fabric.

Colour:  signal orange




CHEMBA®



POLYRAN®-L-S fabric

Solid PA base fabric coated on both sides with performance thermoplastic and permanently sealed with a special varnish (silk gloss/fungicidal finish).

Characteristics

- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Low gas permeability (single war gas test)
- Applications: In (maritime) industry, pharmaceuticals, clinics or as training suit for firefighters and for decontamination measures
- Colour:  yellow (L),  red (S) or  Nato olive (s)

TP
POLYRAN®-L-S






SYKAN® 1 fabric

The gas- and liquid-tight, chemical resistant fabric structure consists of five layers.

The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric and one under the fabric. This means:

- Outstanding chemical resistance; gas and liquid-tight (biological agents).
- Protection against all aerosols (viruses, bacteria) and particles (solids).
- Reinforced robust design (tensile and tear resistant, bending and abrasion resistant, puncture resistant, excellent seam strength)
- Superior flexibility, ultra-low weight
- Thermally stable at high and cryogenic temperatures
- Flame retardant with integrated protection against deflagration (flash fire tested at approx. +850 °C)
- Decontamination-resistant, washable, reusable, sustainable
- Good ageing, weathering and ozone resistance, simple storage
- With antistatic coating

- Exterior colour: Signal colour yellow  or orange  for increased occupational safety
Nato-olive  for protection and defence

- Applications: Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire brigades (unlimited)

Together with the patented Ultra seam, superior suit components and innovative extras, TESIMAX suits offer the ultimate CBRN protection for the wearer – a world first. Safe in use. Reusable. Chemicals and thermally resistant, reinforced robust design.

For further information, see the material sample card and the technical data.

SYKAN® 1




FABRIC SUPERSTRUCTURES

SYKAN® 2 fabric

The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. This means:

- Outstanding chemical resistance; gas and liquid-tight (biological agents).
- Protection against all aerosols (viruses, bacteria) and particles (solids).
- Reinforced robust design (tensile and tear resistant, bending and abrasion resistant, puncture resistant, excellent seam strength)
- Maximum flexibility, low noise, low weight
- Thermally stable at high and cryogenic temperatures
- Flame retardant with integrated protection against deflagration (flash fire tested at approx. +850 °C)
- Decontamination-resistant, washable, reusable, sustainable
- Good ageing, weathering and ozone resistance, simple storage
- With antistatic coating

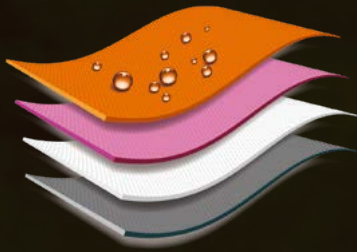
- Exterior colour: Signal colour orange  for increased occupational safety
- Nato-olive  for protection and defence

- Applications: Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire brigades (unlimited)

Together with the patented Ultra seam, superior suit components and innovative extras, TESIMAX suits offer the ultimate CBRN protection for the wearer – a world first. Safe in use. Reusable. Chemicals and thermally resistant, reinforced robust design.

For further information, see the material sample card and the technical data.

SYKAN® 2



SYKAN® 4 fabric

The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HP para-aramid) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. This means:

- Outstanding chemical resistance; gas and liquid-tight (biological agents).
- Protection against all aerosols (viruses, bacteria) and particles (solids).
- Reinforced robust design (tensile and tear resistant, bending and abrasion resistant, puncture resistant, excellent seam strength)
- Maximum flexibility, low noise, low weight
- Thermally stable at high and cryogenic temperatures:
 - Permanently stable at temperatures from -30 to +60 °C
 - Short-term stable at temperatures from -100 to +100 °C in active use
 - Short-term contact up to -178 °C (liquid nitrogen, hydrogen, nitrogen)
 - Hot steam temperatures: material tested at approx. 350 °C for up to 30 s, full contact at approx. 6 bar steam pressure
- Flame retardant with integrated protection against deflagration (flash fire tested, short-term approx. +850 °C)
- > Original Shield or Max FR functional wear/undersuits from TESIMAX recommended

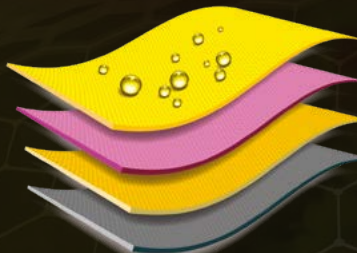
- Decontamination-resistant, washable, reusable, sustainable
- Good ageing, weathering and ozone resistance, simple storage
- With antistatic coating

- Exterior colour: Signal colour yellow  for increased occupational safety
- Nato-olive  for protection and defence

- Applications: Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire brigades (unlimited)

Together with the patented Ultra seam, superior suit components and innovative extras, TESIMAX suits offer the ultimate CBRN protection for the wearer – a world first. Safe in use. Reusable. Chemicals and thermally resistant, reinforced robust design. For further information, see the material sample card and the technical data.

SYKAN® 4



SILVERFLASH® fabric

The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The outer fabric is a permanently antistatic heat and radiation shield combined with internal and external chemical barriers (HPP film). The fabric has a robust high-performance base fabric (HP para-aramid) and is coated on the inside with HPE elastomers (red).

The unique features:

- Outstanding chemical resistance; gas and liquid-tight (biological agents).
- Protection against all aerosols (viruses, bacteria) and particles (solids).
- Reinforced robust design (tensile and tear resistant, bending and abrasion resistant, puncture resistant, excellent seam strength)
- Superior flexibility, ultra-low weight
- Thermally stable at high and cryogenic temperatures:
 - Permanently stable at temperatures from -30 to +60 °C
 - Short-term stable at temperatures from -100 to +100 °C in active use
 - Short-term contact up to -178 °C (liquid nitrogen, hydrogen, nitrogen)
 - Hot steam temperatures: material tested at approx. 350 °C for up to 30 s, full contact at approx. 6 bar steam pressure
 - Flame retardant with integrated protection against deflagration (flash fire tested, short-term approx. +850 °C)
- > Original Shield or Max FR functional wear/undersuits from TESIMAX recommended
- Blocks radiant heat, tested at approx. 1000 °C wall of flame in a closed/open space
- Decontamination-resistant, washable, reusable, sustainable
- Good ageing, weathering and ozone resistance, simple storage
- Permanently antistatic

Exterior colour: Silver reflective  for increased occupational safety

- Applications: Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire brigades (unlimited)

Together with the patented Ultra seam, superior suit components and innovative extras, TESIMAX suits offer the ultimate CBRN protection for the wearer – a world first. Safe in use. Reusable. Chemicals and thermally resistant, reinforced robust design.

For further information, see the material sample card and the technical data.

SILVERFLASH®



High Performance Elastomer



High Performance Plastics



SEAM TECHNOLOGY

High-performance seam technology

On normal protective suits, the seam is often the weak point. The TESIMAX-developed seam technology, which his used on all of our protective suits, is superior to conventional seams:

The TOP seam, for:

- The TESIMAX limited use protective suits (made of SMS50/Puntiform, Duoform, Tessaform or Eptaform/CHEMBA)
- The TESIMAX industry and training protective suits as well as environmental protection products (made of POLYRAN-L-S)
- Here the high-strength seams are sealed with seam covers made of the same material.
- This process fuses the materials together to form a homogeneous, 100 % impermeable fabric
- Exceptionally resilient against liquids, gasses, particles and chemicals, while retaining outstanding elasticity

The ULTRA seam with thermo-tape for secure seam coverage for TESIAMX protective suits made of SYKAN and SILVERFLASH

- High quality sewn with chemically and thermally resistant para-aramid thread.
- External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric.
- The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric. This is necessary for the tape to offer the same resistance as the protective suit fabric, especially against diffusion-prone aggressive solvents and gases.
- The outer tape of the SILVERFLASH suit is additionally aluminised and is applied using a special process.
- Additional, internal HPE welded tape for increased safety

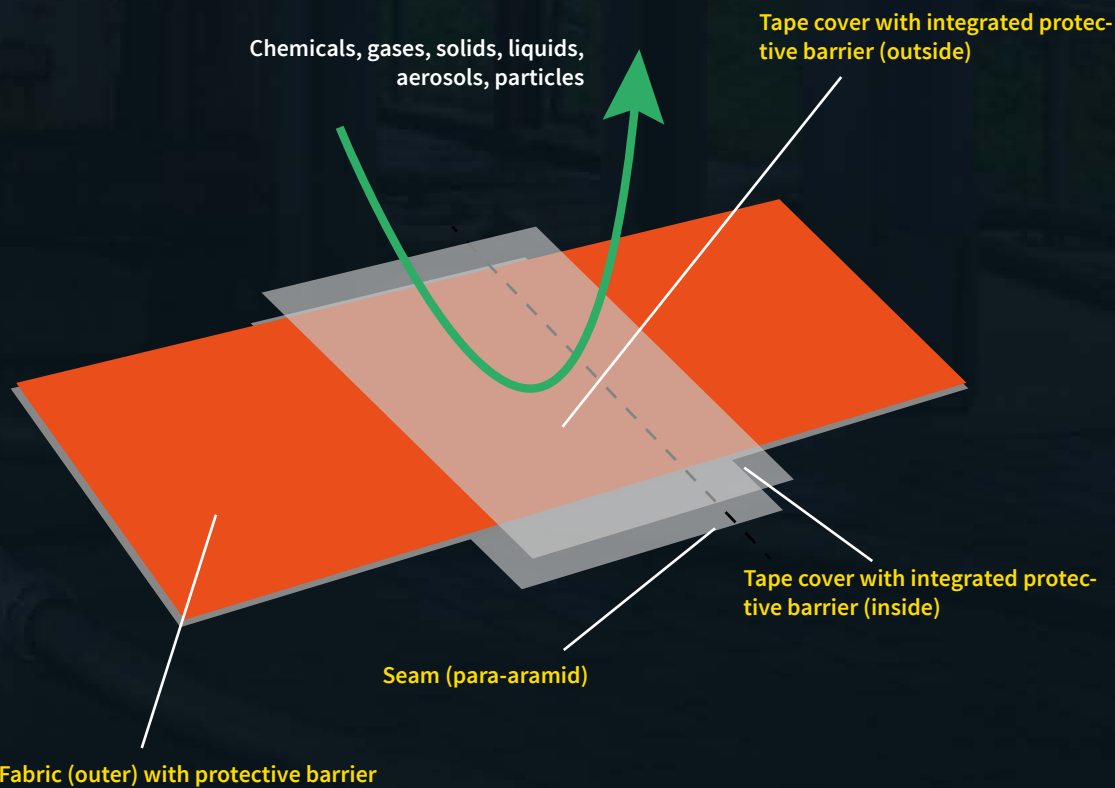
Advantages

- Outer protective barrier that is exceptionally resilient against high and low temperatures, gasses, particles and aggressive chemicals, while retaining outstanding elasticity.
- Facilitates repairs – REAL REUSABLE
- Safety sewing thread made of para-aramid used in all protective suits – thermally stable and chemical resistant.

The TOP/ULTRA seam provides this protective layer already on the outside and not just on the inside.

- This also optimizes reparability – REAL REUSABLE.
- The SILVERFLASH features the ULTRA (inner) seam together with a high-performance combination of a seal and a barrier film that also offers mechanical and chemical protection (outer).

POWER PERFORMANCE SEAM TECHNOLOGIES



The ULTRA seam cover

- Outside: Seam covered with HPE welded tape with unique, integrated chemical barrier (HPP film)
- Middle: Protective suit base fabric
- Inside: Protective suit fabric
Seams covered with HPE welded tape



Chemical resistance

Material tables: Chemical permeation values according to EN 943 and EN 14325
Note: For further (chemical) data, please enquire (see TESIMAX permeation list)

GENERAL INFORMATION FOR ALL CHEM TABLES:

EN 943 – TESIMAX PERFORMANCE LEVEL

Classification of the chemical resistance performance according to EN 943. Fifteen reference chemicals incl. resistance to war gases as well as further permeation data per material. The reference chemicals specified in EN 943 are usually the least harmful of their kind (see reason, EN 943-2)

Use against chemical, biological and nuclear risks

An important measure of safety is the permeation time. To determine how long a fabric withstands permeation by a particular chemical, the breakthrough time – the time it takes for the chemical at a specific concentration to reach the inner side of the fabric – is timed. This permeation time is one of the most important measures for the possible deployment duration of a chemical protective suit.

• Gas-tight protective suits with a good performance, e.g. (Class 6, x > 8.0 h) usually also have a good general chemical permeation resistance. -> The higher the permeation time, the safer and more suitable is the protective suit or fabric for active operations.

• Based on their permeation times, chemical protective suits are categorised into six classes according to the test procedure specified in EN ISO 6529 (see table Classification by minutes above). Protective suits to EN 943 must have a permeation resistance of at least Class 2 (TESIMAX LEVEL: x > Class 3 (permeation time x > 60 minutes) for 15 reference chemicals. This is the (chemical) minimum requirement for use by emergency teams (ET) or firefighting.

• EN 14325:2018-08 specifies that, in addition to the permeation time (TESIMAX permeation list), the end user/CPS wearer must be informed about the time that a specified amount of chemical takes to penetrate through a known area of material. For further information on conversion, see the TESIMAX user manual. Since the classification of the TESIMAX permeation resistance is based on an evaluation of the permeation time at a rate of 0.1 µg/cm²/min or a permeation time x ≥480 min, neither a review nor a reanalysis of existing data is necessary.

• The performance bar is based on the chemical minimum requirements of EN 943 (see above) and provides a summary for each fabric or protective suit.

EN 943 – TEST METHODS

The most important test methods for determining permeation times and permeation rates:

- 1) EN 374-3 defines a standardised permeation rate of 1.0 µm/cm²/min
- 2) ISO 6529:2001 defines the determination of results with the normalised permeation rates of 1.0 µm/cm²/min or 0.1 µm/cm²/min (->TESIMAX REAL REUSABLE TEST STANDARD up to x ≥ 480 minutes)
- 3) ASTM F739 specifies that the results must be recorded as permeation time at 0.1 µm/cm²/min.
- 4. EN 14325:2018 Protective clothing against chemicals – Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages
- 5. EN ISO 6530 Protective clothing - Protection against liquid chemicals - Test method for resistance of materials to penetration by liquids (ISO 6530:2005); German version EN ISO 6530:2005

EN 943/EN14325 – CLASSIFICATION

TESIMAX CHEM SPECIFICATIONS ACCORDING TO EN 943 always apply to “the entire protective suit per material/type”, i.e.:

• Permanently integrated protective gloves (WIPAN B+/C/CK/CK+/overglove) and boots (HPE versions 1–4), footlets made of suit material and their assemblages (exchange system or permanently integrated)

• Pressure relief valves (covered with protective material and angle prechamber) and forced air feedthrough (F-AU series)

• Closures (zip, covered with protective suit material): HPE-ULTRA (ET version)/P-L-S (industrial version)

• Seams (TOP/ULTRA seam)

• Visors VS 5/VS 20/VSF 20/VSF 5/VSF 21 (type 1a – ET/type 1c)

• Face seals (HPE elastomer) with respiratory mask (GS 3/GS 3M type 1b – ET).

Cross-references/details about permeation data for reusable protective suit tables:

*/1 = Class 1/2 not reached: This chemical protective suit is not suitable for prolonged exposure to this substance.

** = the permeation resistance to ingress/diffusion of the reference chemicals/substances according to EN 943 is increased through the additional suit-material zip cover
Cover made of suit fabric (for values see column 1, Material). A possible ingress of gaseous materials can further be reduced with a higher internal suit pressure, provided the protective cover is intact. The zip cover made of suit fabric is resistant to solid, aerosol and liquid warfare agents (see Finabel Conv.0.7.C material report).

*** If the protective suit has footlets with drip cuffs made of suit fabric, also observe the safety instructions in the usage and care instructions (“Putting on the protective suit”). An approved protective boot is required.

**** Suitable safety gloves must be selected through risk assessment by the end user (for mechanical and chemical values, please enquire). TESIMAX always recommends the tested safety protective gloves (see Details per material table or accessories catalogue or enquire). The optional MECH Blue overglove improves mechanical and chemical protection.

***** For further permeation times/values, CHEMICALS/WAR GASSES (CWA/CWS), see the TESIMAX chemicals permeation list (please enquire).

Classification in minutes

Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
> 10 minutes	> 30 minutes	> 60 minutes	> 120 minutes	> 240 minutes	> 480 minutes

SAFETY NOTE:

If the protective suit has been contaminated or exposed to thermal or mechanical strain, it must be serviced and tested before reuse. Otherwise it presents a risk of death. If necessary, have the protective suit disposed of following testing by a specialist service centre or by TESIMAX. If in doubt, contact your TESIMAX Servicepool contact (see TESIMAX Servicepool leaflet). Further information on safe testing and reusability, see the TESIMAX user manual.

Chemical resistance

Overview of permeation resistance against chemicals, gasses and warfare agents for TESIMAX protective suits according to EN 943 Parts 1 and 2 (ET)

Chemical	Protective suit fabric	Chemical	protective suit fabric	Chemical	
• Dichloromethane	(1) - 6	• Toluene	(1) - 6	• Mustard gas (HD)	x > 17 h
• n-heptane/n-hexane	(1) - 6	• Methanol	(1) - 6	• Lewisite (L)	x > 1.5 h
• Acetone	(1) - 6	• Ethyl acetate	(1) - 6	• Soman (GD)	x > 2.0 h
• Acetonitrile	(1) - 6	• Tetrahydrofuran	(1) - 6	• Sarin (GB)	x > 2.0 h
• Diethylamine	(1) - 6	• Carbon disulphide	(1) - 6	• Tabun (GA)	x > 6.0 h
• NaOH-sol40%	(1) - 6	• Sulphuric acid 96%	(1) - 6	• VX	x > 6.0 h
• Ammonia	(1) - 6	• Chlorine	(1) - 6		
• Hydrogen chloride gas	(1) - 6				

* Breakthrough times according to EN 943 Parts 1 and 2 (ET); for individual values see test certificate

The chart gives the reference values for the materials/seams Class 6 according to EN 943 Part 2 (ET). For other tested values, see the respective user manual or the Technical data appendix in the catalogue.

** Permeation times according to Finabel 0.7.L (given are minimum values for SILVERFLASH and SYKAN); the following are also CWA-tested: seam, visor (respiratory mask), protective gloves (WIPAN B+/C/CK/CK+/overglove), protective boots (HPE versions 1–4) and the zip with cover/assemblages.

Note: Further information and performance characteristics, see the corresponding user manual and the TESIMAX Chem Data list. For further information please enquire.

Correlation of classification and time

Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
< 10 min	> 30 min	> 60 min	> 120 min	> 240 min	> 480 min

PERFORMANCE LEVEL

Classification of Chemical Resistance rating to EN 943

15 reference chemicals, including war gasses, and further permeation data by fabric. The reference chemicals specified in EN 943 are usually the least harmful of their kind (for the reason, see EN 943-2 D Appendix A and for further information, the TESIMAX Chemguide).

Gas-tight protective suits with a good performance, e.g. (Class 6, $x > 8.0$ h) usually also have a good general chemical permeation resistance.

The normalized permeation time (permeation resistance in minutes) of the reference chemicals according to EN 943 for TESIMAX protective suits are mostly >480 minutes (maximum, for the criterion 0.1 µg/min/cm²; see TESIMAX chem data list).

These suits therefore offer outstanding protection for the end user.

The performance bar is based on the chemical minimum requirements of EN 943 (see above) and provides a summary for each fabric or protective suit.

Chemical resistance:

0% 100%



The most important test methods for determining permeation times and permeation rates:

1. EN 374-3 defines a standardised permeation rate of $1.0 \mu\text{m}/\text{cm}^2/\text{min}$
2. ISO 6529:2001 defines the determination of results with the normalised permeation rates of $1.0 \mu\text{m}/\text{cm}^2/\text{min}$ or $0.1 \mu\text{m}/\text{cm}^2/\text{min}$ (->TESIMAX REAL REUSABLE TEST)
3. ASTM F739 specifies that the results must be recorded as permeation time at $0.1 \mu\text{m}/\text{cm}^2/\text{min}$.
4. EN 14325:2018
EN 14325:2018: Protective clothing against chemicals – Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages
5. EN ISO 6530
Protective clothing - Protection against liquid chemicals - Test method for resistance of materials to penetration by liquids (ISO 6530:2005)

Chemical resistance

Choosing the right protective suit/fabric for chemical, biological and radiation risks

An important measure of safety is the permeation time. To determine how long a fabric withstands permeation by a particular chemical, the breakthrough time – the time it takes for the chemical at a specific concentration to reach the inner side of the fabric – is timed.

This permeation time is one of the most important measures for the possible deployment duration of a chemical protective suit. The higher the permeation time, the safer and more suitable is the protective suit or fabric for active operations.

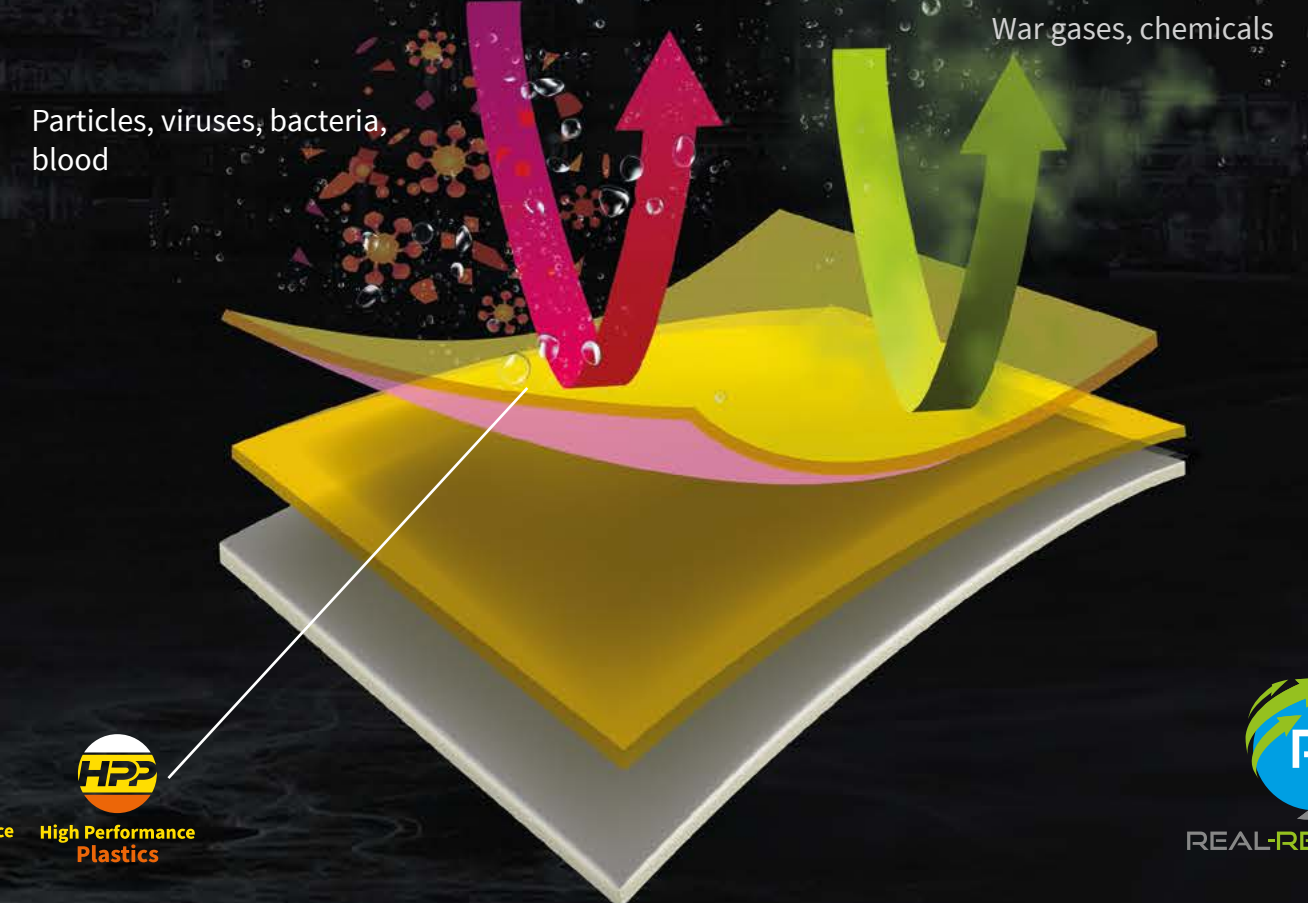
Based on their permeation times, chemical protective suits are categorised into six classes according to the test procedure specified in EN ISO 6529 (see table Classification by minutes above).

Protective suits to EN 943 must have a permeation resistance of at least Class 2 (permeation time $x > 30$ minutes) for 15 reference chemicals. This is the (chemical) minimum requirement for use by emergency teams (ET) or firefighting.

For further information please enquire.

Protective suits made of SYKAN or SILVERFLASH fabric have the following key advantage over all other protective suits in the world:

Only protective suits with an outer chemically resistant, gas and liquid tight barrier film (protective barrier) provide maximum safety and reusability. It is crucial that the protective barrier lies outside the base fabric. -> This is the only way of guaranteeing that no gas or chemical attacks the base fabric through contamination and the mechanical properties (puncture, tensile, tear and tear propagation strengths) remain permanently intact.



Mechanical resistance

Laboratory-determined permeation data does not always reflect real-life conditions. Variables such as temperature, pressure and mechanical loads can influence the permeation times. When selecting chemical protective clothing, these physical properties must therefore also be tested. European standard EN 943 provides the best basis for comparing the physical properties of chemical protective suits (CPS). Even the best barrier fabric has no effect if it is torn, cut, punctured or otherwise damaged.

For limited use and reusable CPS, observe the following performance characteristics according to EN 943 and EN 14325:

Requirement	Limited use	Reusable
Abrasion resistance	Class 4	Class 6**
Flex cracking resistance	Class 1	Class 4**
Flex cracking resistance at low temperatures (-30 °C)	Class 2	Class 2**
Tear propagation strength (trapeziom method)	Class 3	Class 3**
Tensile strength	Class 4	Class 6**
Puncture resistance	Class 2	Class 3**
Ignition resistance	Class 1	Class 3**
Seam strength:	Class 5	Class 5

Further classes:
TENSILE FORCE TESTING to EN 943
Class 1 (lowest) to Class 6 (highest)


*NOTE ACCORDING TO EN 943-2
The difference between normal durability (limited use) and increased durability (TESIMAX REAL REUSABLE) protective suits lies in the strength and durability of the fabric or the suit design or both. Increased durability is provided for those tasks where the suits are expected to be exposed to high mechanical stress or will be repeatedly reused.

-> The EN 943 standard clearly states that only reusable protective suits (TESIMAX REAL REUSABLE made of POLYRAN, SYKAN and SILVERFLASH) must be used in the front line under all types of risk without limitation.

**Note:
- For performance characteristics, see the respective user manual.
- Protective suits to 943 Part 1 have lower performance levels.

What mechanical performance criteria must a protective suit for my application fulfil?

Basic rule:
Light-duty use: Limited use with standard durability
Heavy-duty use: Reusable suit with increased durability



REAL-REUSABLE

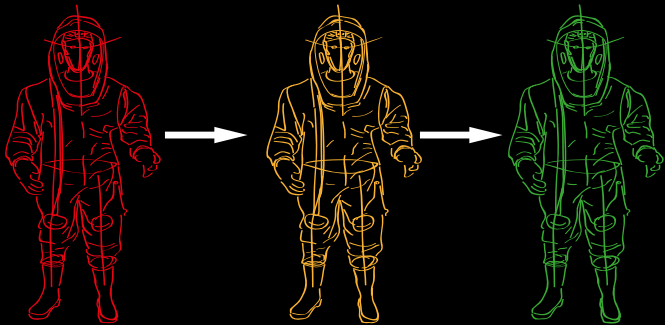
“REAL REUSABLE” protective suits must exceed the more stringent mechanical minimum requirements for reusable suits according to EN 943.

These minimum requirements are necessary for uses in which the suits are likely to be exposed to high mechanical stresses or if the suit will be used multiple times.

These suits also have a higher resistance to chemicals (see Chemical performance).

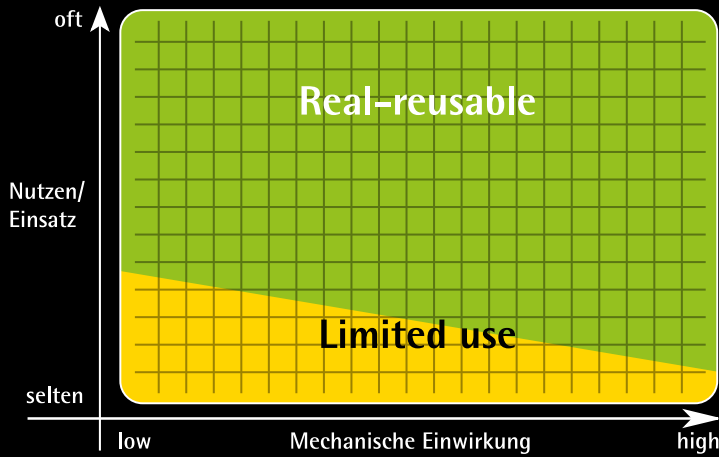
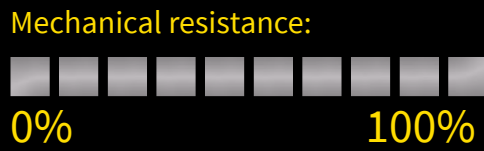
They are therefore the first choice for maximising the safety of emergency teams that are faced with unknown hazards.

For further information please enquire.



PERFORMANCE LEVEL: Classification of fabric performance properties (Table 3):

The performance bar is based on the mechanical minimum requirements of EN 943/EN 14325 (see above) and provides a summary for each fabric or protective suit.



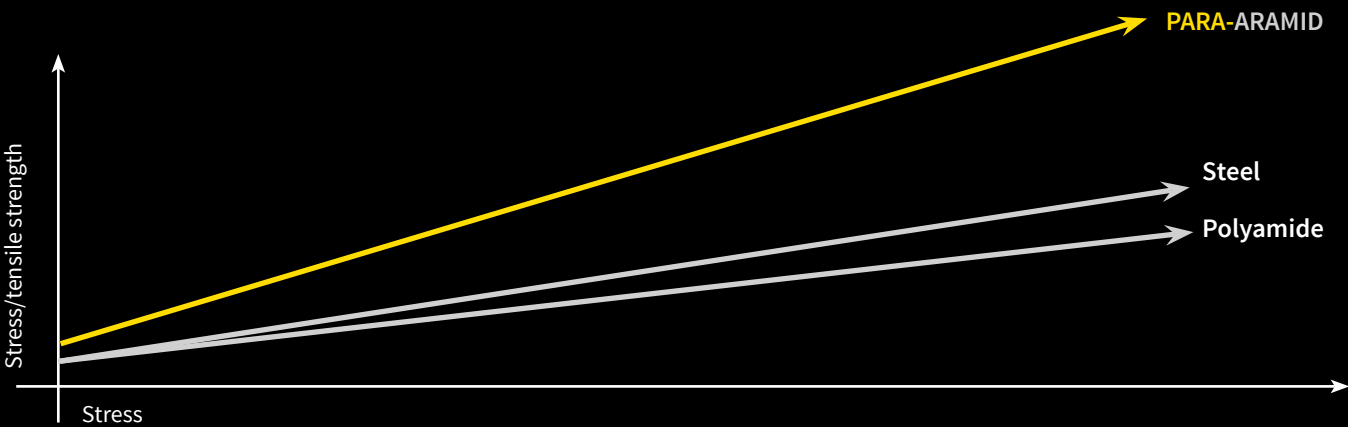
Further TESIMAX facts on mechanical resistance:

In extreme situations, take advantage of the safety of TESIMAX protection suits with para-aramid base fabric. Used in protective suits made of SYKAN® 4 and SILVERFLASH® with the following performance characteristics:

- Excellent resistance to decomposition under heat
- Outstanding tensile strength and fatigue resistance: the fibres have five times the strength of steel at the same weight
- Excellent cut and puncture resistance
- Para-aramid fabrics are very lightweight
- Superior resistance against chemicals
- Long-term dimensional stability
- Low weight
- Heat- and low-temperature resistant
 - Up to +180 °C, para-aramid retains its room-temperature properties almost unchanged.
 - Does not melt and is self-extinguishing
 - Its charring point is at +425 °C.
 - No significant embrittlement or strength reduction down to -196 °C.

TESIMAX is known throughout the world for its use of this high-performance material in its SYKAN® 4 and SILVERFLASH® chemical protective suits, having used para-aramid for more than 40 years. Our suits thus protect the suit wearer in extreme conditions – with a proven track record throughout the world.

FOCUS: Mechanical resistance





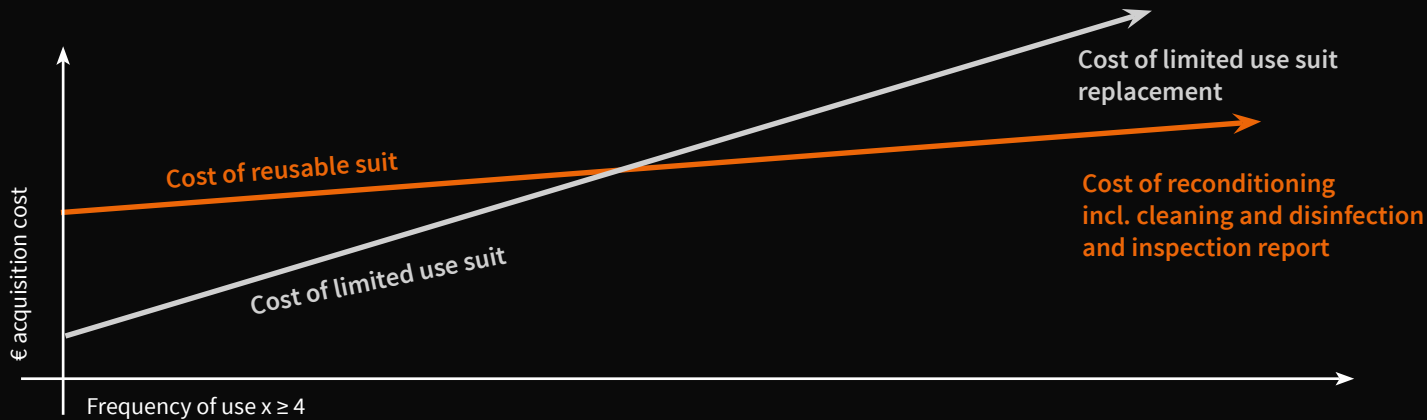
Economic viability of the TESIMAX REAL REUSABLE protective suits:

If suit will be used, for example, more than four times within 15 years, we recommend reusable protective suits. These offer a higher protection level and are more cost-effective in the long term than limited use protective suits, which must be replaced with new ones after each use.

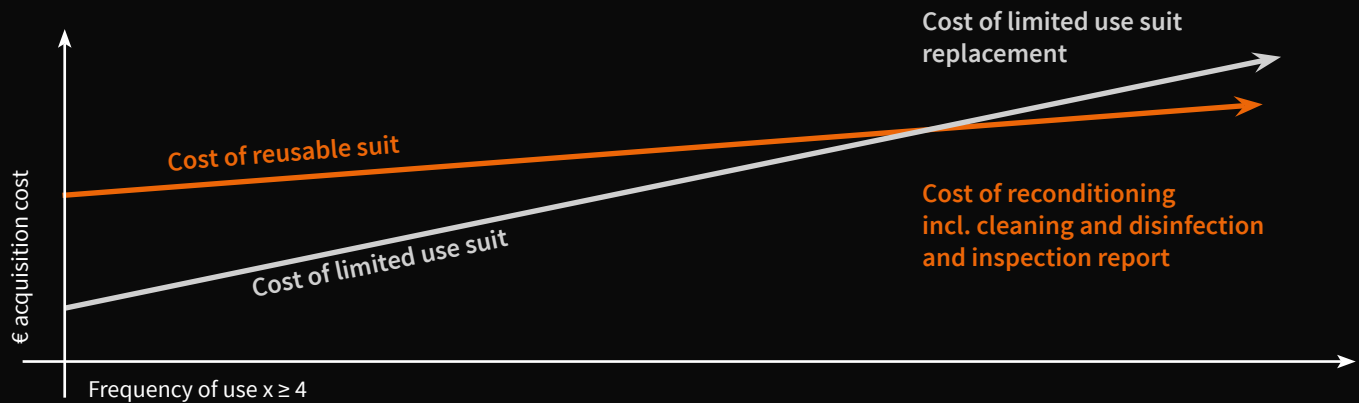
More than 90 % of reusable protective suits can be reconditioned (see also our Servicepool leaflet).

LIMITED USE VS. REUSABLE

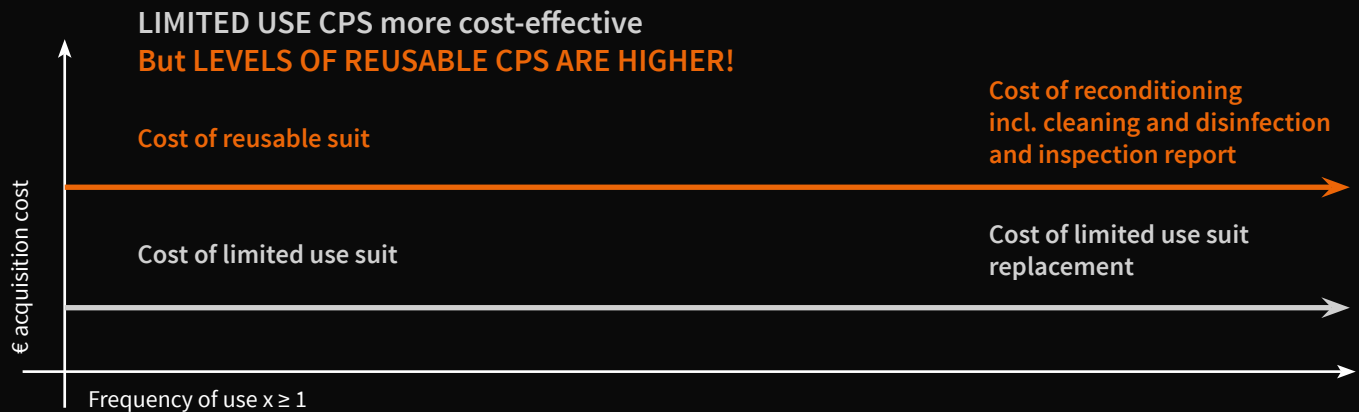
Economic efficiency for use under mechanical strain: REUSABLE CPS more cost-effective in 90% of cases



Economic efficiency for use under light/moderate contamination: REUSABLE CPS more cost-effective in 90% of cases



Economic efficiency in case of severe contamination: DISPOSABLE CPS more cost-effective in 90 % of cases



Thermal resistance

PERFORMANCE LEVEL	0%	100%
Classification of fabric performance properties		
The performance bar is based on the thermal minimum requirements (see above) and provides a summary for each fabric or protective suit.		
Heat: Contact heat at approx. 850 ± 50 °C (approx. 5 seconds, then still gas-tight) according to EN 13274-4	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
Contact heat at approx. 850 ± 50 °C (approx. 10 seconds, then still gas-tight) according to EN 13274-4 2 (double):	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
* Superheated steam at approx. 350 ± 25 °C (approx. 30 seconds, then still gas-tight/reusable) at up to 10 bar pressure/ full contact	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
*/** Flashover Test at approx. 850 ± 50 °C (approx. 8 seconds, then still gas-tight) according to ISO 13506:2008	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
*/** Radiant heat at approx. 1000 °C Distance approx. 2–3 m (approx. 1–3 minutes, then still gas-tight) plus EN ISO 11612	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
Cold: Contact cold* at -30 °C according to EN 943 (for up to 4 minutes, then still gas-tight/ reusable) e.g. ambient temperatures in winter	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
Contact cold* at -80 °C according to EN 943 (for up to 30 minutes, then still gas-tight/reusable), e.g. ammonia	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
Contact cold* at -100 °C according to EN 943 (for up to 30 minutes, then still gas-tight/reusable), e.g. liquid nitrogen	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	
*In combination with TESIMAX FR underclothing **Only with appropriate TESIMAX real-time training (RTT) with CPS: VS 20 SILVERFLASH	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	

EXPANSION RISK

At high (up to 850 °C at 8 seconds full contact) or low temperatures (-196 °C at 10 seconds full contact or -80 to -100 °C at up to 30 minutes full contact), the risk of, for example, mechanical material fatigue increases, which can result in tearing or leakage of the protective fabric.

For suits that protect against this situation, see the Heat/cold resistance performance bar graph for each suit or fabric.

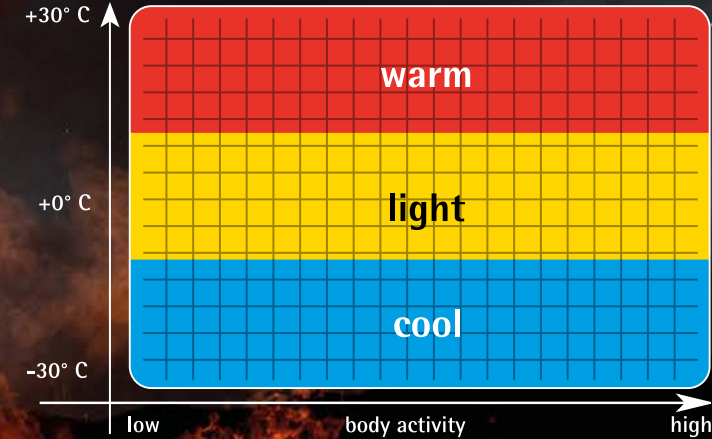
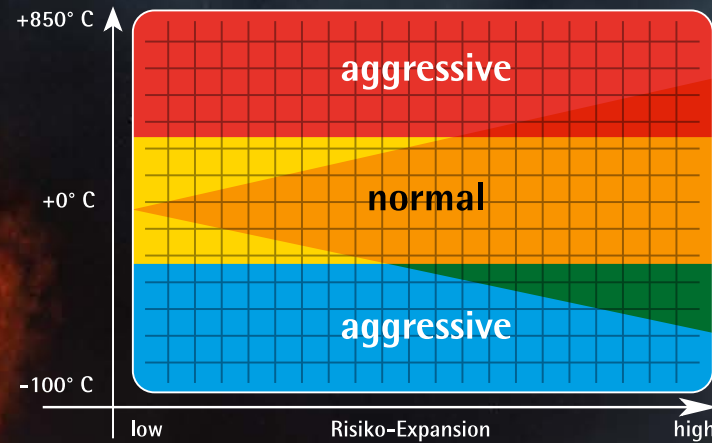
For further information please enquire.

Body activity

Note:
Increase your personal performance by using the right tested functional underwear systems from TESIMAX.

PPE (personal protective equipment) combinations (respiratory protection, functional underwear, helmets, gloves, forced ventilation systems, etc.) are tested and approved for use with TESIMAX protective suits (see user manual).

For further information please enquire.



TESIMAX protective suits - model overview and Performance characteristics

- = not suitable
• = suitable
.. = very suitable
... = ideal

Model	Material	Respiratory protection	Type	Solids**	Aerosols**	Liquids**	Gas-ses***	War gasses****
VS 5	CHEMBA	Inner: PA	Type 1a-ET	...	...	...	...	-
VS 5	POLYRAN-L/S	Inner: PA	Type 1a	...	...	....	...	-
VS 5	SYKAN 1	Inner: PA	Type 1a-ET	...	...	...	...	...
VS 5	SYKAN 2	Inner: PA	Type 1a-ET	...	...	...	...	...
VS 5	SYKAN 4	Inner: PA	Type 1a-ET	...	...	...	...	...
VS 20	POLYRAN-L/S	Inner: PA	Type 1a	...	...	...	...	-
VS 20	SYKAN 2	Inner: PA	Type 1a-ET	...	...	...	...	...
VS 20	SYKAN 4	Inner: PA	Type 1a-ET	...	...	...	...	...
VS 20	SILVERFLASH	Inner: PA	Type 1a-ET	...	...	...	...	...
GS 3/GS 3M	POLYRAN-L/S	Outer: PA/F	Type 1b	...	...	...	...	-
GS 3/GS 3M	SYKAN 1	Outer: PA/F	Type 1b-ET	...	...	...	...	...
GS 3/GS 3M	SYKAN 2	Outer: PA/F	Type 1b-ET	...	...	...	...	...
GS 3/GS 3M	SYKAN 4	Outer: PA/F	Type 1b-ET	...	...	...	...	...
GS 3/GS 3M	SILVERFLASH	Outer: PA/F	Type 1b-ET	...	...	...	...	...
VSF 5	SYKAN 2	Inner: O	Type 1c	...	...	...	...	...
VSF 20	SYKAN 2	Inner: O	Type 1c	...	...	...	...	...
VSF 20	SYKAN 4	Inner: O	Type 1c	...	...	...	...	...
VSF 21	POLYRAN-L/S	Inner: F (fan)	Type 1c/3	..	..	..	•	-
VSF 21	SYKAN 2	Inner: F (fan)	Type 1c/3	...	...	...	...	...
VSF 21 PE-D / T	Duoform/Tessaform	Inner: F (fan)	Type 3	..	..	..	-	-
ESK 3 P-S	POLYRAN-L/S	Outer: O/F/PA	Type 3	..	..	..	-	-
ESK S5 PE-T	Tessaform	Outer: O/F/PA	Type 3 (1c)	..	..	..	-	-
ESK S3 PE-T+/++	Tessaform	Outer: O/F/PA	Type 3	..	..	..	-	-
ESK 1PE +/++	Duoform	Outer: O/F/PA	Type 3	..	..	..	-	-
ESK 1T+	Puntiform	Outer: O/F/PA	Type 4	•	•	-	-	-
ESK 1 T	SMS 50	Outer: O/F/PA	Type 5-6	•	-	-	-	-

*Respiratory Protection:
SCBA = self-contained breathing apparatus
F = filter
O = no optional respiratory protection or integrated (VSF 20)

ET = emergency teams

**Solids/aerosols/liquids
Infective agents
Radioactive particles
Spray mist
See TESIMAX permeation list

*** Gasses
Known/
unknown gasses
See TESIMAX permeation list

****War gasses
to Finabel 0.7 protocol
See TESIMAX permeation list

Chemical resistance	Mechanical stress	Flameover	Supercooled media	EX	Maritime use	Weight
...	(low) limited use	•	•	•	•	...
•	(high) reusable	•	•	•	•	•
...	(high) reusable	..	..	•	•	•
...	(high) reusable	..	..	•	•	..
...	(high) reusable	...	...	•	•	•
•	(high) reusable	•	•	•	•	•
...	(high) reusable	..	..	•	•	..
...	(high) reusable	...	...	•	•	•
...	(high) reusable	...	...	..	•	•
•	(high) reusable	•	•	•	•	•
...	(high) reusable	..	..	•	•	•
...	(high) reusable	..	..	•	•	..
...	(high) reusable	...	...	•	-	..
•	(high) reusable	•	•	•	-	•
...	(high) reusable	...	...	•	-	•
...	(low) limited use	-	-	•	-	...
..	(low) limited use	-	-	•	•	...
•	(low) limited use	-	-	•	-	...
•	(low) limited use	-	-	•	-	...



VS 20 SILVERFLASH



VS 20 series



VS 5 series



VSF 5 series



GS 3 series



VSF 21 series



ESK 3 series



ESK 1 series

Table 0: CHEMICAL PROTECTIVE SUITS – OVERVIEW OF FEATURES						
		POLYRAN-L/S/	SYKAN 1	SYKAN 2	SYKAN 4	SILVERFLASH
Types/series/info						
ESK: Light-duty protective clothing (particle/liquid-tight, according to EN Types 3-6, B) ESK 1, ESK 3 (-> the higher the ESK number, the higher the protection level)		x			x	
GS 3: Gas-tight protective suit with SCBA outside (gas-tight, according to EN 943 type 1b, B (ET))		x	x	x	x	x
GS 3 M: As GS 3 but with permanently integrated mask (gas-tight according to EN 943 type 1b, B (ET))		x	x	x	x	x
VS 5: Totally encapsulated suits for SCBA (gas-tight, according to EN 943 type 1a, B (ET)) with permanently integrated triple laminated visor; 130 cm gas-tight, fused and covered zip		x	x	x	x	
VS 20: Totally encapsulated suits for SCBA (gas-tight, according to EN 943 type 1a, B (ET)) with triple laminated interchangeable mask window (for ANGEL SENSOR systems); 180 cm gas-tight, fused and covered zip (easier donning and doffing, Smart Handling)		x	x	x	x	x
VSF 21: Totally encapsulated suits with forced ventilation (powered filter units, according to EN 943/EN 1073 type 1c/3B)		x		x		
VSF 5: Totally encapsulated suits with forced ventilation system, steri-filter and flexible air valves, (gas-tight, according to EN 943 Type 1c, B (ET)) with triple laminated interchangeable mask window (for ANGEL SENSOR systems); 130 cm gas-tight zip		x		x		
VSF 20: Totally encapsulated suits with forced ventilation system (gas-tight, according to EN 943 type 1c, B (ET)) with triple laminated interchangeable mask window (for ANGEL SENSOR systems);180 cm gas-tight zip (Smart Handling)		x	x	x	x	
Standards & performance data	Where to find further information					
Basic standards	See standards overview in the catalogue	-	-	-	-	-
Performance according to standards/ap-plication	See Table 1 in the technical appendix	-	-	-	-	-
Mechanical protection & performance	See Table 2 in the technical appendix	-	-	-	-	-
Chemical protection & performance	See Table 3 in the technical appendix	-	-	-	-	-
Thermal protection & performance	See Table 4 in the technical appendix	-	-	-	-	-
Approvals & Verifications	See TESIMAX CPS approvals & certificates	-	-	-	-	-
User manual	See TESIMAX CPS instruction manual	-	-	-	-	-
Material & equipment	Where to find further information					
Material description and structure, colour:	See product description in catalogue	Yellow/red /Nato olive/ white	Yellow/ orange Nato olive	Orange/ Nato olive	Yellow/ Nato olive	Silver
Material and weight	See product description in catalogue	x	x	x	x	x
Material and seam description	See CPS, technical appendix	TOP seam	ULTRA seam	ULTRA seam	ULTRA seam	ULTRA seam
Standard & optional features	See product description in catalogue (stand-ard)	x	x	x	x	x
CPS service life	Note					
Storage period and service life	See catalogue, technical appendix and data (certificates, user manual)	15 years	15 years	15 years	15 years	15 years
Storage period and maintenance, CPS	Without SMART STOCK packaging	1 x per year				
Storage period and maintenance, CPS	With SMART STOCK packaging	5 years maintenance-free				
CPS Service	Note					
PPE and CPS: Service	See service, repair videos, equipment maintenance training courses	See CPS Servicepool leaflet				
PPE and CPS: Training	See Real-time training	See CPS Servicepool leaflet				

Table 1 – TESIMAX CHEMICAL PROTECTION: Standards		POLYRAN-L/S/	SYKAN 1	SYKAN 2	SYKAN 4	SILVER-FLASH
Categorization by standards	Note					
PPE: Quality Management system (QM)	EU 2016/425 (Modules C & D) / QM ISO 9001:2015	PASS	PASS	PASS	PASS	PASS
PPE: Basic requirements of CE protective equipment	EN 13688	PASS	PASS	PASS	PASS	PASS
PPE: CPS CE approval (depending on series/version)	EN 943-1/-2:2019 in conjunction with EN 14325	PASS	PASS	PASS	PASS	PASS
PPE: CPS combination/compatibility with other equipment	EN 943 (F-AU, helmets, SCBA, ...)	PASS	PASS	PASS	PASS	PASS
PPE: CPS maritime approval (depending on product)	Maritime approval (on-board)	PASS	PASS	PASS	PASS	PASS
PPE: CPS CE approval only ESK series/ version)	Liquid-tight chemical protective clothing EN 14605:2005	PASS	PASS	PASS	PASS	PASS
PPE: Biological protection (B) - Penetration resistance	EN 14126: Biological protection (labelled “B”)	PASS	PASS	PASS	PASS	PASS
	Penetration test with artificial blood (ISO/FDIS 11603)	PASS	PASS	PASS	PASS	PASS
	Resistance to viruses (ISO/FDIS 16604)	PASS	PASS	PASS	PASS	PASS
	Resistance to bacteria (ISO/DIS 22610)	PASS	PASS	PASS	PASS	PASS
	Resistance to bio aerosols (ISO/DIS 22611)	PASS	PASS	PASS	PASS	PASS
	Resistance to contaminated dust (ISO/DIS 22612)	PASS	PASS	PASS	PASS	PASS
	Disinfection/reuse after explosive ordnance contamina-tion, tested by the Robert Koch Institute (Gran PPE study)	PASS	PASS	PASS	PASS	PASS
PPE against particles including radioactive contamination	EN 1073-1: Protective clothing against solid airborne particles including radioactive contamination - Part 1: Requirements and test methods for compressed air line ventilated protective clothing, protecting the body and the respiratory tract (inward leakage test – partly tested for the VSF 21 series POLYRAN/SYKAN 2 in conjunction with powered filter units and EN 943; inward leakage tested according to EN 943 for CPS types 1a,1b and 1c).	PASS	PASS	PASS	PASS	PASS
PPE: use against particles, radioactive particle protection	EN 1073-2: Blocking behaviour against r. particles Protective clothing against radioactive contamination - Part 2: Requirements and test methods for non-ventilated protective clothing against particulate radioactive contamination (tested blocking behaviour according to EN 1073-2)	PASS	PASS	PASS	PASS	PASS
PPE: use in hazardous areas, antistatic discharge capability	according to EN 1149-5 (in combination with TESIMAX static inhibitor)	PASS	PASS	PASS	PASS	PASS
Comparison of EN 943 minimum require-ments with other standards worldwide	EN/NATO standard, further standards & individual tests					
PPE: TESIMAX CHECK* national guidelines	e.g. according to DGUV bgi_guv_i_8671	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to BGR 189-190	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to AMR-14-2 – G26 (BAUA)	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to NFPA (US standard)	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to GOST-R (Russian standard)	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to JIS T8xxxx (Japanese standard)	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to ÖBFV En (Austrian EN standard)	PASS	PASS	PASS	PASS	PASS
PPE: TESIMAX CHECK* national guidelines	e.g. according to GA-GB (Chinese standard)	PASS	PASS	PASS	PASS	PASS
* The comparison (EN 943, national guidelines and worldwide standards) is based on a manufacturer’s assessment.		PASS	PASS	PASS	PASS	PASS
Advanced tests: high performance tests	Manufacturers’ & national/international standards					
Minimum tensile strength requirements	According to EN 943 (for fitted boots, glove exchange system with approx. 1500 N and valves)	PASS	PASS	PASS	PASS	PASS
Combat gases test: material/seam	According to Finabel 0.7 C	PASS (mustard gas)	PASS	PASS	PASS	PASS
Combat gas test: assemblages, closures, components (mask, boot, glove)	According to Finabel 0.7 C	PASS (mustard gas)	PASS	PASS	PASS	PASS
Reuse rate after use with mechanical strain	Up to 100%: fully reusable	PASS	PASS	PASS	PASS	PASS
Reuse rate after use with chemical con-tamination	Up to 100%: fully reusable	PASS	PASS	PASS	PASS	PASS
Application restriction/recommendation according to EN 943 (DGUV, VFDB)	Unlimited	PASS	PASS	PASS	PASS	PASS

Table 2: MECHANICAL PROTECTION – Classification according to EN 943				POLRAN-L/S/	SYKAN 1	SYKAN 2	SYKAN 4	SILVERFLASH
EN standard/approval				EN 943-1	EN 943-2	EN 943-2	EN 943-2	EN 943-2
Mechanical material/seam properties	Minimum level according to EN 943 in conjunction with EN 14325			Mechanical classes				
See MECH performance rating table	EN 943 Part 1 (Industry)	EN 943 Part 2 (Emergency Teams) – limited use	EN 943 Part 2 (Emergency Team) – reusable	Real tested values according to EN 943 – EN 14325				
Abrasion resistance / EN ISO 12947-2	3	4	6	6 (6) *	6 (6) *	6 (6) *	6 (6) *	6 (6) *
Flex cracking resistance / EN ISO 7854	1	1	4	6 (6) *	6 (6) *	6 (6) *	6 (6) *	5 (6) *
Flex cracking resistance at -30 °C / EN ISO 7855 (-30 °C)	2	2	2	6 (6) *	6 (6) *	6 (6) *	6 (6) *	6 (6) *
Tear propagation strength / EN ISO 9073-4	4	3	3	4 (6)	3 (6) *	4 (6) *	5 (6) *	6 (6) *
Tensile strength / EN ISO 13934-1	3	4	6	6 (6)	6 (6) *	6 (6) *	6 (6) *	6 (6) *
Puncture resistance / EN 863	2	2	3	3 (6) *	3 (6) *	3 (6) *	4 (6) *	5 (6) *
Seam strength / EN ISO 13935-2	5	5	5	6 (6) *	6 (6) *	6 (6) *	6 (6) *	6 (6) *
Zip seam strength	3	3	3	6	6	6	6	6
Flame retardance	1	1	3	2	3	3	3	3

Value (value*) = values based on module C 2, each with +/-tolerances due to CIP (*as well as manufacturer's material performance data)

MECH	Abrasion resist- ance	Flex cracking resistance	Flex cracking resistance at -30 °C	Tear prop- agation strength	Puncture resistance	Permeation	Ignition	Seam strength	Permeation classes
Class 6	>2000	>50000	>4000	>150 N	>250 N	>480 min.	Passed*	>500 N	>480 min.
Class 5	>1500	>20000	>2000	>100 N	>150 N	>240 min.	-	>300 N	>240 min.
Class 4	>1000	>8000	>1000	>60 N	>100 N	>120 min.	-	>125 N	>120 min.
Class 3	>500	>3000	>500	>40 N	>50 N	>60 min.	-	>75 N	>60 min.
Class 2	>100	>1250	>200	>20 N	>10 N	>30 min.	-	>50 N	>30 min.
Class 1	>10	>500	>100	>10 N	>5 N	>10 min.	Not passed*	>30 N	>10 min.

MECH	Tensile strength
Class 6	>1000
Class 5	>500
Class 4	>250
Class 3	>100
Class 2	>60
Class 1	>30

Table 3a – CHEMICAL PROTECTION – Chemical permeation according to EN 943 – OVERVIEW 2020								
				POLY-RAN-L/S	SYKAN 1	SYKAN 2	SYKAN 4	SILVER-FLASH
				EN 943-1	EN 943-2	EN 943-2	EN 943-2	EN 943-2
Chemical resistance	Minimum performance class according to EN 943 in conjunction with EN 14325/ISO 6529			Chemical classes				
	EN 943 minimum requirements	TESIMAX HPE requirements						
EN 943-1 Industry (one test chemical)	At least class 3 (for one test chemical)			Pass*/**	Pass*/**	Pass*/**	Pass*/**	Pass*/**
EN 943-2 ET/firefighters (15 test chemicals)	EN 943-1	At least class 2–6 (for 15 reference chemical)		-	Pass*/**	Pass*/**	Pass*/**	Pass*/**

* For further chemical values, see chemical permeation tables for each material (user manual/certificate) and TESIMAX chem. permeation list (over 1000 substances listed, values for the whole suit, TESIMAX materials with maximum values for up to 8 h according to EN 14325. For permeation list, please enquire.)

** SYKAN/SILVERFLASH: Chemical permeation through contamination is effectively stopped already outside the fabric (material/seam with chemical barrier film – REAL REUSABLE)

Table 3b – CHEMICAL PROTECTION – Chemical permeation according to standard EN 943 – MATERIALS 2020								
Hazardous material	SYKAN 1		SYKAN 2		SYKAN 4		SILVERFLASH	
	Material	Seam	Material	Seam	Material	Seam	Material	Seam
Dichloromethane	6	6	6	6	6	6	6	6
Toluene	6	6	6	6	6	6	6	5
n-hexane	6	6	6	6	6	6	6	6
Methanol	6	6	6	6	6	5	6	6
Acetone	6	6	6	6	6	6	6	6
Ethyl acetate	6	6	6	6	6	6	6	6
Acetonitrile	6	6	6	6	6	6	6	6
Tetrahydrofuran	6	5	6	6	6	6	6	5
Diethylamine	6	6	6	6	6	6	6	6
Carbon disulphide	6	5	4	6	6	6	6	6
NaOH sol. 40%	6	6	6	6	6	6	6	6
Sulphuric acid 96%	6	6	6	6	6	6	6	6
Ammonia	6	6	6	6	6	6	6	6
Chlorine	6	6	6	6	6	6	6	6
Hydrogen chloride	6	6	6	6	6	6	6	6

Table 3c: CHEMICAL PROTECTION – Chemical permeation according to standard EN 943 – COMPONENTS 2020

	Visor		Face seal		WIPAN CK-PRO	Gloves	
	VS 5	VS 20	Without mask	With mask		WIPAN C WIPAN CK	WIPAN B+ WIPAN CK+
Dichloromethane	6	6	1	3	3	2	3 / 6
Toluene	6	6	2	3	6	6	6
n-hexane	6	6	1	3	6	6	6
Methanol	6	6	6	6	6	4	6
Acetone	6	6	6	6	4	1	6
Ethyl acetate	6	6	5	6	2	1	6
Acetonitrile	6	6	6	6	2	2	6
Tetrahydrofuran	6	6	2	3	1	1	6
Diethylamine	6	6	1	3	3	3	6
Carbon disulphide	6	6	6	3	5	6	6
NaOH sol. 40%	6	6	6	6	6	6	6
Sulphuric acid 96%	6	6	6	6	6	6	6
Ammonia	6	6	6	6	6	6	6
Chlorine	6	6	6	6	6	6	6
Hydrogen chloride	6	6	6	6	4	6	6
	Without tear-off visor		Must only be used with a mask		Over- and undergloves for special applications please enquire / P		

P: see permeation list for further information

Table 3c: CHEMICAL PROTECTION – Chemical permeation according to standard EN 943 – COMPONENTS 2020

	Boots		Footlets made of suit fabric		Zip (HPE-HPP)	
	HPE CHEM	HPE ULTRA CHEM/ P	Suit fabric	Plus boots	Zip without cover	Zip with cover
Dichloromethane	***	3 / 6	SILVERFLASH and SYKAN models with HPE ULTRA CHEM = Class 6 for all reference chemicals plus boots. For POLYRAN (SUPERLIGHT) and HPE CHEM, the class results from the permeation sum of the material and selected boots according to their properties.		4	6
Toluene	***	6 / 6			6	6
n-hexane	4	6 / 6			6	6
Methanol	***	6 / 6			6	6
Acetone	***	6 / 6			6	6
Ethyl acetate	***	6 / 6			6	6
Acetonitrile	***	6 / 6			6	6
Tetrahydrofuran	***	6 / 6			6	6
Diethylamine	***	6 / 6			6	6
Carbon disulphide	***	6 / 6			4	6
NaOH sol. 40%	6	6 / 6			6	6
Sulphuric acid 96%	6	6 / 6			6	6
Ammonia	6	6 / 6			6	6
Chlorine	6	6 / 6			6	6
Hydrogen chloride	6	6 / 6			6	6
	***For further values, please enquire					

Table 4: CHEMICAL PROTECTION – thermal properties/tests according to standard

				POLYRAN-L/S	SYKAN 1	SYKAN 2	SYKAN 4	SILVERFLASH
Thermal behaviour: Material/seam properties	Min. performance class acc. to EN 943			Thermal classes				
STANDARD TEST REUSABLE CPS – contact heat - Short-term contact at up to approx. 850 °C for >5 seconds with gas tightness test	Class 1 (1 seconds)	Class 2 (3 seconds)	Class 3 (5 seconds)	Class 2	Class 3	Class 3	Class 3	Class 3
STANDARD TEST according to Methods of test - Part 4: Flame test; German and English version (pr)EN 13274-4:2019				Pass	Pass	Pass	Pass	Pass
Thermal behaviour: + 4 h conditioning at approx. -30 °C/+20 °C up to approx. +65 °C (according to EN 943/EN ISO 139)				Pass	Pass	Pass	Pass	Pass
Thermal behaviour: + Contact heat (tested by TESIMAX) – short-term contact at up to approx. 850 °C for > 5 seconds				-	Pass	Pass	Pass	Pass
Thermal behaviour: + Contact heat (tested by TESIMAX) – short-term contact at up to approx. 850 °C for > 10 seconds				-	Pass	Pass	Pass	Pass
Thermal behaviour: + Superheated steam (tested by TESIMAX) – at about 350 °C for up to 30 seconds				-	Pass	Pass	Pass	Pass
Thermal behaviour: + Flashover test approx. 850 °C for 8 s (verified by inspection body)				-	-	-	Pass	Pass
Thermal behaviour: – Protective suit for not less than 4 h at a temperature of -30 ±3 °C (according to EN 943)				Pass	Pass	Pass	Pass	Pass
Thermal behaviour: Material tested by TESIMAX, (climatic test), for up to 10 min (verified by inspection body)				Pass	Pass	Pass	Pass	Pass
Thermal behaviour: - Material tested by TESIMAX, (climatic test), at -80 to approx. -100 °C for up to 10 minutes (verified by inspection body)				-	-	-	Pass	Pass
Thermal behaviour: - Material tested by TESIMAX (liquid nitrogen), short-term contact at approx. -196 °C for >10 s (verified by inspection body)				-	-	-	Pass	Pass
Protective clothing – Clothing for protection against heat and flame – Minimum performance requirements EN ISO 11612:2015)				-	-	-	-	Pass*

*Performance classes: A1, A2, B1, C3, D3, E3, N.A., W11

Size chart, VS 5/VSF 5/VSF 21 and VS 20/VSF 20 series						
Suit size	Overall height Stretched	Waist Circumference without backpack	Shoulder or sleeve length to gloves	Crotch to shoulder	Boot size Model: see * Standard: 46	Glove size (standard) Model: see Gloves table
S	Approx. 200 cm	Approx. 138 cm	Approx. 79 cm	Approx. 83 cm	43-48	10
M	Approx. 205 cm	Approx. 144 cm	Approx. 81 cm	Approx. 87 cm	43-48	10
L	Approx. 210 cm	Approx. 150 cm	Approx. 83 cm	Approx. 91 cm	43-48	10
XL (standard)	Approx. 215 cm	Approx. 156 cm	Approx. 85 cm	Approx. 95 cm	43-48	10
XXL	Approx. 220 cm	Approx. 162 cm	Approx. 87 cm	Approx. 99 cm	43-48	10

Body size chart/label		
Size	Chest meas- urement	Height
S	92-98 cm	150-165 cm
M	96-102 cm	160-175 cm
L	100-107 cm	170-185 cm
XL (standard)	105-113 cm	180-190 cm
XXL	110-118 cm	190-200 cm

Size chart, GS 3/GS 3 M series						
Suit size	Overall height Stretched	Waist Circumference without backpack	Shoulder or sleeve length to gloves	Crotch to shoulder	Boot size Model: see * Standard: 46	Glove size (standard) Model: see Gloves table
S	Approx. 205 cm	Approx. 105 cm	Approx. 58 cm	Approx. 85 cm	43-48	10
M	Approx. 210 cm	Approx. 110 cm	Approx. 60 cm	Approx. 90 cm	43-48	10
L	Approx. 215 cm	Approx. 115 cm	Approx. 62 cm	Approx. 95 cm	43-48	10
XL (standard)	Approx. 220 cm	Approx. 125 cm	Approx. 65 cm	Approx. 100 cm	43-48	10
XXL	Approx. 225 cm	Approx. 130 cm	Approx. 68 cm	Approx. 105 cm	43-48	10

Body size chart/label		
Size	Chest meas- urement	Height
S	92-98 cm	150-165 cm
M	96-102 cm	160-175 cm
L	100-107 cm	170-185 cm
XL (standard)	105-113 cm	180-190 cm
XXL	110-118 cm	190-200 cm

* Model SYKAN-SV; STANDARD: HPF
Ultra Chem Black SA-BF (alternatively: Ultra Chem Green Hazguard® EN) /
POLYRAN model: HPF Chem Black
Acifort® EN

GLOVE MODEL (5-finger protective gloves)	Size	Protective suit	Material
LIMITED USE protective suits			
NEO NBC elastomer protective glove	7-11 (depending on size)	ESK 1 PE-D+ and VSF 21 PE-D	Duoform
NEO NBC elastomer protective glove	7-11 (depending on size)	S3 PE+	Tessaform
NBC barrier protective glove (over- and undergloves recommended, optional)	7-11 (depending on size)	S3 PE++, S5 PE-T and VSF 21 PE-T	Tessaform
Reusable protective suits (Real Reusable)			
5-finger protective glove MECH-BLUE 351	8-10	VS 5, VS 20, VSF 5/20, GS 3 (M), VSF 21	POLYRAN-L-S
WIPAN B+ system: CBRN protective glove (IIR) in combination with integrated chemical protection barrier (HPP)/BW underglove	7-11	VS 5, VS 20, VSF 5/20, GS 3 (M), VSF 21	SYKAN/SILVERFLASH/ CHEMBA
WIPAN C system: CBRN protective gloves (HPE elastomer with triple protection) and integrated liner, with replacement system	9-10	VS 5, VS 20, VSF 5/20, GS 3 (M), VSF 21	SYKAN/SILVERFLASH
WIPAN CK system: CBRN protective gloves (HPE elastomer with triple protection) and integrated liner, reinforced with para-aramid	9-10	VS 5, VS 20, VSF 5/20, GS 3 (M), VSF 21	SYKAN/SILVERFLASH
WIPAN CK+ system: CBRN protective gloves (IIR) in combination with integrated chemical protection barrier (HPP) and integrated liner, reinforced with para-aramid	7-11	VS 5, VS 20, VSF 5/20, GS 3 (M), VSF 21	SYKAN/SILVERFLASH
WIPAN CK-PRO system: CBRN protective gloves and integrated liner, reinforced with para-aramid	8-11	VS 5, VS 20, VSF 5/20, GS 3 (M), VSF 21	SYKAN/SILVERFLASH
OVERGLOVES (optional)			
MECH BLUE 351 overgloves (mechanical protection, short cuff)	8-10	All	All
MECH BLACK overglove (mechanical protection, long cuff, own production)	12	All	All
MECH SILVER overglove (mechanical protection, long cuff, own production)	12	All	All
Overglove 1000 V (electrical insulation protection, long cuff)	7-11	All	All
UNDERGLOVES (optional)			
Underglove ESD (for optimisation of electrical discharge, arc fault protection, for all CPS	7-11	All	All
Underglove cotton (for ESK series and WIPAN B+ protective glove system)	6-11	All	All

PERFORMANCE in hazardous areas

What are Ex (explosion risk) areas?
According to the German ordinances on occupational safety and hazardous substances (BetrSichV and GefStoffV), an explosion risk area – also referred to as ex-area, hazardous area or hazardous location (HazLoc) – is an area in which an hazardous explosive mixture of air and flammable gases, vapours or mists is present either continuously, for long periods or frequently.

What is an explosion risk area?
An explosion risk (or hazardous) area is a place where a potentially explosive atmosphere may occur. A potentially explosive atmosphere exists when a mixture of gases, vapours, mists or dusts combines in such a way that it can ignite under certain conditions.

Classification into equipment groups
Equipment is divided into groups I and II, whereby group I covers underground/deep mining and group II all other applications.

Zone classification
Potentially explosive areas are classified into six zones, the classification being based on the likelihood, likely duration and likely frequency of a hazardous explosive atmosphere occurring. A distinction is made between flammable gases, mists, vapours and flammable dusts.

EN 1149-5: Protective clothing - Electrostatic properties - Part 5: Material performance and design requirements: What does this standard cover?
Antistatic clothing prevents electrostatic charges from creating sparks that can cause a fire or explosion. The pictogram for this standard is a lightning bolt with the standard designation EN 1149-5 below it. The standard specifies the requirements for electrically conductive protective clothing. This protective clothing is part of a fully earthed system (e.g. in combination with conductive footwear: see FIREMAN SA/BF and TESIMAX FR Safe/Shield clothing and socks) and prevents sparks and thus explosions. Clothing that complies with this standard should always also comply with the standard for flame-retardant clothing (EN 531 or ISO 11612). Areas of application are places where there is a risk of explosion and therefore fire. Protective clothing that complies with the EN 1149-5 standard is often used in companies that have to comply with the ATEX directive.

TESIMAX chemical protective clothing complies with the requirements of EN 1149-5.
The TESIMAX ANGEL SENSOR SYSTEM complies with the ATEX directive. Contact us for further details.

		POLY-RAN-L/S/SU-PERLIGHT	Duoform Tessaform CHEMBA	SYKAN 1-2-4	SILVERFLASH
Zone 0	An area in which an explosive atmosphere consisting of a mixture of air with flammable substances in the form of gas, vapour or mist is present continuously or for long periods.	✓	✓	✓	✓
Zone 1	An area in which an explosive atmosphere consisting of a mixture of air with flammable substances in the form of gas, vapour or mist is likely to occur under normal operating conditions.	✓	✓	✓	✓
Zone 2	An area in which an explosive atmosphere consisting of a mixture of air with flammable substances in the form of gas, vapour or mist could occur under abnormal conditions and is not likely to occur under normal operating conditions.	✓	✓	✓	✓
Zone 20	An area in which an ignitable concentration of dust is present in the air continuously, for long periods or frequently.	✓	✓	✓	✓
Zone 21	An area in which an ignitable concentration of dust in the air is likely to occur occasionally under normal operating conditions.	✓	✓	✓	✓
Zone 22	An area in which an ignitable concentration of dust in the air may occur for brief periods and is not likely to occur under normal operating conditions.	✓	✓	✓	✓

The Ex (explosion risk) zone classification tests were carried out at 23 °C and 30% relative humidity (inside and outside). For an optimal result (for the reusable protective suits), we use TESIMAX static inhibitor. This is applied to the protective suits at the factory (5-year storage capability with SMART STOCK packaging). The protective suit made of SILVERFLASH fabric is permanently conductive due to its chemical barrier outer layer (colour: silver metallic).

Note that only the clothing fabric is dissipative. Work in explosion risk zones: In your risk assessment, take into account that the integrated socks can have an insulating effect. It may therefore not be possible to earth the protective suit and wearer via the footwear, so that other measures must be taken to earth the suit and wearer. We recommend TESIMAX Safe/Shield or THERMO-FLEECE functional wear and socks treated with static inhibitor.

To avoid sparks generation, make sure that protective clothing and wearer are properly earthed. Note: Work and (TESIMAX) protective clothing must not be changed in explosion risk areas, i.e. donned and doffed, if there is a risk of minimum ignition spark energy.





VS 20 SERIES

VS 20 SERIES



Gas- and liquid-tight triple visor assemblage, universally chemical resistant, thermally stable and mechanically extremely robust, UV-resistant, crystal clear, antifog inner with antibacterial characteristics. 15-year long-life warranty. (antifog) with ANGEL LIGHT & SENSOR SYSTEMS (optional)



ANGEL
SENSOR SYSTEMS

Gas-tight protective gloves: WIPAN C-CK-CK+ made of HPE elastomers, partially (CK+) with chemically resistant, gas- and liquid-tight barrier film



Gas- and liquid-tight protective boots with HPE elastomers, extremely robust, antistatic, highly resistant to chemicals, safety sole – flexible and safe



Gas-tight protective material (SYKAN/SILVERFLASH) with chemical resistant, gas- and liquid-tight protective barrier film

Ultra seam (SYKAN/SILVERFLASH) Patented safety seam made of para-aramid with a chemicals resistant tape cover including barrier film, facing outwards

HPF ULTRA zip (SYKAN/SILVERFLASH) Gas-tight safety zip with chemical resistant, gas- and liquid-tight protective barrier film

VS 20 series: gas-tight totally encapsulated chemical protective suit – type 1a (ET) – internal SCBA

The standard equipment varies depending on the model:

- One-piece (gas-tight) totally encapsulated chemical protective suit with a triple Interchangeable VS 20 visor (with mechanical protective visor, chemical barrier and permanent antifog coating on the inside), a gas-tight zip (180 cm), partly with fabric cover, integrated protective gloves and boots, integrated braces and pressure relief valves, with double protective fabric cover (incl. high-quality HPE membrane).
- CPS (chemical protective suit) for unlimited use in firefighting, industry, works fire brigades and military.
- Classification by standard: Type 1a (ET) = gas-tight chemical protective suit with breathing air supply worn inside the chemical protective suit, for example compressed air equipment.
- This CPS unites an excellent workmanship with high-grade materials.
- All popular firefighter helmets and industrial hard hats can be worn under the suit.
- We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).
- Service life: 15 years, then inspection; +5 years (10 years for limited use CHEMBA)
- Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)
- Sizes: Five individual sizes (M to XXL)
- Optimum fit through range of sizes
- Perfect design also at critical points

Protective suits – special features

- Reusable chemical protective suits according to protection level EN 943-1-2: 1a-b (ET)/1c and 2 ET (type 1a-b-c) and EN 14126 (type 3).
- HARMLESS MATERIALS:
 - PH-neutral behaviour, confirmed by AZO test (material colours).
 - PFOA-free and skin-friendly materials
 - Visors not made of PVC, thus no highly toxic gassing on combustion (flashover); free from heavy metals, asbestos, formaldehyde, CFCs, PCBs and PCTs
 - FREE FROM ADHESIVE: TESIMAX suits are produced without adhesives, making them extremely robust, better washable, more sustainable than other suits and safely reusable.
- Unique fabric structure consisting of gas-tight, chemically and thermally resistant, abrasion-resistant elastomers (TP, HPE), on robust, lightweight and super-flexible base fabrics (PA, HPA and HP para-aramid)
- Unique fabric structure with outward facing chemical barrier (HPP film) that reliably stops hazardous substances without affecting the base fabric as with other protective suits (REAL REUSABLE)
- Outstanding chemical protection for up to 8 h (chemicals tests according to EN 943 Parts 1 and 2) & according to 24-hour gas tests (CWA standard: Finabel 0.7 C NATO)
- Chemical permeation data list for approx. 1000 hazardous substances
- Outstanding flame retardance according to EN 13274-4 (approx. 850°C), EN 11612 (SILVERFLASH) and flash-over test according to ISO 13506 (SYKAN and SILVERFLASH)
- Outstanding cold protection according to EN 943 and cryogenic tests (-80 °C down to -178 °C)
- Superior tensile and tear propagation strengths, puncture and abrasion resistance as well as seam strength offer extreme mechanical robustness and ensure the wearer's safety – according to EN 14325.
- Approved for use in hazardous areas – reliable protection against arcing.
- Available in different versions: Totally encapsulated suit type 1a ET (SCBA inside), 1b ET (SCBA outside) for work in confined spaces as well as 1c (without SCBA, with compressed air forced ventilation) and Type 3 liquid-tight protective suits as coveralls or powered filter unit protective suits.
- Extensive range of accessories: sensors, light, forced ventilation, functional underwear, optional extras.
- Comprehensive service: professional decon system. Total Care. Safe and sustainable – worldwide.
- These protective suits unite excellent quality with high-grade materials and components.
- Optimum fit through range of sizes
- Perfect design also at critical points





Suit description, VS 20 POLYRAN®-L or S

- One-piece, gas-tight chemical protective suit/totally encapsulated suit, for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With integrated interchangeable visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and firmly integrated protective gloves and boots (optionally footlets and drip cuffs)
- CPS (chemical protective suit) for unrestricted use by fire brigades/ industry/works fire brigades/military, classification according to EN 943-1/-2 standard: type 1a

POLYRAN®-L or S FABRIC

- Extremely robust base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (and fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%)
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight P-L-S elastomer zip (180 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Interchangeable protective boot standard:

HPE 2 ACIFORT® – standard size 46
HPE elastomer protective boot according to EN ISO 20345 S5 SRA AN
• Colour: black
-> Other sizes: 43 to 47 (please specify when ordering)
-> Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
-> Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

OPTIONAL FEATURES

- See Accessories

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear -> CBRN protective suit
- NBC risks: Nuclear, biological, radioactive -> ABC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to EU PPE Regulation 2016/425)

for protective suits made of SYKAN® 1-2-4, POLYRAN-L-S as well as SILVERFLASH® protective suits:
• EN ISO 13688 = protective clothing – General requirements
• EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1a (internal SCBA)
• SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 20 POLYRAN®-L-S
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg
- POLYRAN-L colour: yellow ■ POLYRAN-S Colour: ■ red

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))

Sizes 150 to 165 cm	Order no.: 0220-151 S
Sizes 160 to 175 cm	Order no.: 0220-151 M
Sizes 170 to 185 cm	Order no.: 0220-151 L
Sizes 180 to 190 cm,	Order no.: 0220-151 XL (standard)
Sizes 190 to 200 cm	Order no.: 0220-151 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 20 POLYRAN-L-S

Chemical resistance	■■■■■
Mechanical resistance	■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■
Heat: Hot vapour at about 350 °C	■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested





Suit description, VS 20 SYKAN 1

- One-piece, gas-tight chemical protective suit (firefighter totally encapsulated suit for emergency teams (ET)), for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With integrated interchangeable visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1a

SYKAN® 1 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric and one under the fabric.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287;

- colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
 - > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
 - > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

OPTIONAL FEATURES

- See Accessories

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear -> CBRN protective suit
- NBC risks: Nuclear, biological, radioactive
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS
(according to PPE Regulation (EU) 2016/425)

- For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:
- EN ISO 13688 = protective clothing – General requirements
 - EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1a (internal SCBA)
 - SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:



- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 20 SYKAN 1
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  signal yellow (outer) or  Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

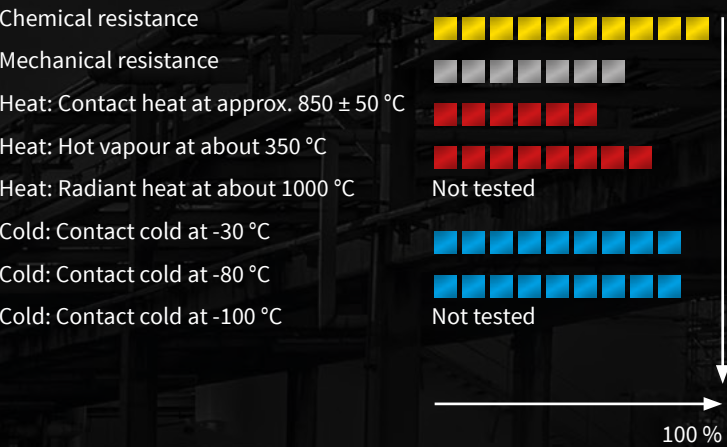
- > Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))
- Sizes 150 to 165 cm Order no.: 0220-250 S
- Sizes 160 to 175 cm Order no.: 0220-250 M
- Sizes 170 to 185 cm Order no.: 0220-250 L
- Sizes 180 to 190 cm, Order no.: 0220-250 XL (standard)
- Sizes 190 to 200 cm Order no.: 0220-250 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 20 SYKAN 1:



A full-body photograph of a person wearing a bright orange Tychem chemical protective suit. The suit includes a hood with a large, clear, curved face shield and a black respirator mask covering the nose and mouth. The person is also wearing black gloves and black rubber boots. The suit has "TYCHEM" printed vertically on the left leg and a small logo on the right chest. The background is a dark, industrial environment with metal structures.



VS 20 SILVERFLASH

Suit description, VS 20 SILVERFLASH®

- One-piece, gas-tight chemical protective suit (firefighter totally encapsulated suit for emergency teams (ET)), for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With integrated interchangeable visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and firmly integrated protective gloves and boots (optionally footlets and drip cuffs)
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1a

SILVERFLASH® FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The outer fabric is a permanently antistatic heat and radiation shield combined with internal and external chemical barriers (HPP film). The fabric has a robust high-performance base fabric (HP para-aramid) and is coated on the inside with HPE elastomers (red).

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%)
- > Integrated: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side
- > Integrated: fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN CK – standard size 10 HPF elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system. -> Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287;

- colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

OPTIONAL FEATURES

- See Accessories

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, radioactive
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARD – APPROVALS (according to PPE Regulation (EU) 2016/425)


- For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:
- EN ISO 13688 = protective clothing – General requirements
 - EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1a (internal SCBA)
 - SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 20 SILVERFLASH®
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  silver reflective (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)



ORDERING DATA

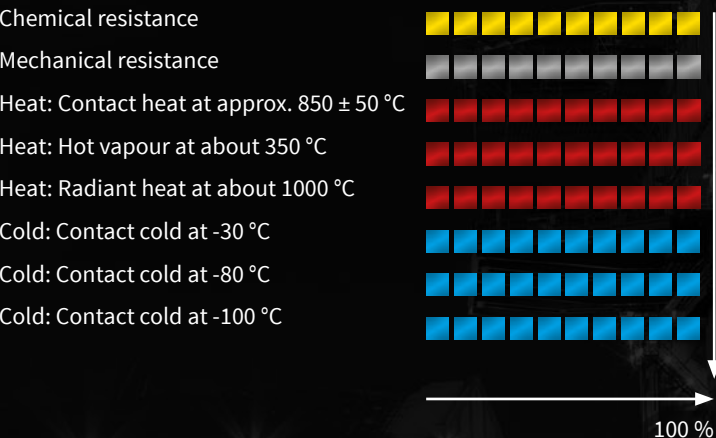
- > Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))
- | | |
|---------------------|-----------------------------------|
| Sizes 150 to 165 cm | Order no.: 0220-222 S |
| Sizes 160 to 175 cm | Order no.: 0220-222 M |
| Sizes 170 to 185 cm | Order no.: 0220-222 L |
| Sizes 180 to 190 cm | Order no.: 0220-222 XL (standard) |
| Sizes 190 to 200 cm | Order no.: 0220-222 XXL |

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
 - Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
 - Standard nylon storage bag, black
 - Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 20 SILVERFLASH



VS 20 SILVERFLASH

SILVERFLASH® fabric

The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The outer fabric is a permanently antistatic heat and radiation shield combined with internal and external chemical barriers (HPP film). The fabric has a robust high-performance base fabric (HP para-aramid) and is coated on the inside with HPE elastomers (red).

The unique features:

- Outstanding chemical resistance; gas and liquid-tight (biological agents).
- Protection against all aerosols (viruses, bacteria) and particles (solids).
- Reinforced robust design (tensile and tear resistant, bending and abrasion resistant, puncture resistant, excellent seam strength)
- Superior flexibility, ultra-low weight
- Thermally stable at high and cryogenic temperatures:
 - Permanently stable at temperatures from -30 to +60 °C
 - Short-term stable at temperatures from -100 to +100 °C in active use
 - Short-term contact up to -178 °C (liquid nitrogen, hydrogen, nitrogen)
 - Hot steam temperatures: material tested at approx. 350 °C for up to 30 s, full contact at approx. 6 bar steam pressure
 - Flame retardant with integrated protection against deflagration (flash fire tested, short-term approx. +850 °C)
- > Original Shield or Max FR functional wear/undersuits from TESIMAX recommended
- Blocks radiant heat, tested at approx. 1000 °C wall of flame in a closed/open space
- Decontamination-resistant, washable, reusable, sustainable
- Good ageing, weathering and ozone resistance, simple storage
- Permanently antistatic



High Performance
Elastomer



PARA-ARAMID



High Performance
Plastics





VS 5 SERIES

VS 5 SERIES



Gas- and liquid-tight triple visor assemblage, universally chemical resistant, thermally stable and mechanically extremely robust, UV-resistant, crystal clear, antifog inner with antibacterial characteristics. 15-year long-life warranty



Gas-tight protective gloves: WIPAN C-CK-CK+ made of HPF elastomers, partially (CK+) with chemically resistant, gas- and liquid-tight barrier film



Gas- and liquid-tight protective boots with HPE elastomers, extremely robust, antistatic, highly resistant to chemicals, safety sole – flexible and safe



Gas-tight protective material (SYKAN/SILVERFLASH) with chemical resistant, gas- and liquid-tight protective barrier film



Ultra seam (SYKAN/SILVERFLASH) Patented safety seam made of para-aramid with a chemicals resistant tape cover including barrier film, facing outwards

HPF ULTRA zip (SYKAN/SILVERFLASH) Gas-tight safety zip with chemical resistant, gas- and liquid-tight protective barrier film

VS 5 series: gas-tight totally encapsulated chemical protective suit – type 1a (ET) – Internal SCBA

The standard equipment varies depending on the model:

- One-piece (gas-tight) totally encapsulated chemical protective suit with a firmly integrated triple Interchangeable VS 5 visor (with mechanical protective visor, chemical barrier and permanent antifog coating on the inside), a gas-tight zip (130 cm, optionally 180 cm), with partial fabric cover, integrated protective gloves and boots, integrated braces and pressure relief valves, with double protective fabric cover (incl. high-quality HPE membrane). CPS (chemical protective suit) for unlimited use in fire brigades, industry, works fire brigades and military.
- Classification by standard: Type 1a (ET) = gas-tight chemical protective suit with breathing air supply worn inside the chemical protective suit, for example compressed air equipment.
- These CPS unite excellent workmanship with high-grade materials.
- All popular firefighter helmets and industrial hard hats can be worn under the suit. We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).
- Service life: 15 years: 10 years, then inspection; +5 years (10 years for limited use CHEMBA)
- Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)
- Sizes: Five individual sizes (M to XXL)
- Optimum fit through range of sizes
- Perfect design also at critical points

Protective suits – special features

- Reusable chemical protective suits according to protection level EN 943-1-2: 1a-b (ET)/1c and 2 ET (type 1a-b-c) and EN 14126 (type 3).
- HARMLESS MATERIALS:
 - PH-neutral behaviour, confirmed by AZO test (material colours).
 - PFOA-free and skin-friendly materials
 - Visors not made of PVC, thus no highly toxic gassing on combustion (flashover); free from heavy metals, asbestos, formaldehyde, CFCs, PCBs and PCTs
 - FREE FROM ADHESIVE: TESIMAX suits are produced without adhesives, making them extremely robust, better washable, more sustainable than other suits and safely reusable.
- Unique fabric structure consisting of gas-tight, chemically and thermally resistant, abrasion-resistant elastomers (TP, HPE), on robust, lightweight and super-flexible base fabrics (PA, HPA and HP para-aramid).
- Unique fabric structure with outward facing chemical barrier (HPP film) that reliably stops hazardous substances without affecting the base fabric as with other protective suits (REAL REUSABLE).
- Outstanding chemical protection for up to 8 h (chemicals tests according to EN 943 Parts 1 and 2) & according to 24-hour gas tests (CWA standard: Finabel 0.7 C NATO).
- Chemical permeation data list for approx. 1000 hazardous substances.
- Outstanding flame retardance according to EN 13274-4 (approx. 850°C), EN 11612 (SILVERFLASH) and flash-over test according to ISO 13506 (SYKAN and SILVERFLASH)
- Outstanding cold protection according to EN 943 and cryogenic tests (-80 °C down to -178 °C)
- Superior tensile and tear propagation strengths, puncture and abrasion resistance as well as seam strength offer extreme mechanical robustness and ensure the wearer's safety – according to EN 14325.
- Approved for use in hazardous areas – reliable protection against arcing.
- Available in different versions: Totally encapsulated suit type 1a ET (SCBA inside), 1b ET (SCBA outside) for work in confined spaces as well as 1c (without SCBA, with compressed air forced ventilation) and Type 3 liquid-tight protective suits as coveralls or powered filter unit protective suits.
- Extensive range of accessories: sensors, light, forced ventilation, functional underwear.
- Comprehensive service: professional decon system. Total Care. Safe and sustainable. Worldwide.
- These protective suits unite excellent quality with high-grade materials and components.
- Optimum fit through range of sizes.
- Perfect design also at critical points.





Suit description, VS 5 POLYRAN®-L or S

- One-piece, gas-tight chemical protective suit/totally encapsulated suit for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With integrated visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and firmly integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military, classification according to EN 943-1/-2 standard: type 1a

POLYRAN®-L or S FABRIC

- Extremely robust base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (and fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Applications: Maritime industry pharmaceuticals, clinics and decontamination measures/applications
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight P-L-S elastomer zip (130 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 2 ACIFORT® – standard size 46
- HPE elastomer protective boot according to EN ISO 20345 S5 SRA AN; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

OPTIONAL FEATURES

- See Accessories

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS GS 3 (M) – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1a (internal SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 5 POLYRAN®-L
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR (outer): ■ signal-yellow, ■ signal-red or ■ Nato olive

LIFE CYCLE

15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

Sizes 150 to 165 cm	Order no.: 0201-151 S
Sizes 160 to 175 cm	Order no.: 0201-151 M
Sizes 170 to 185 cm	Order no.: 0201-151 L
Sizes 180 to 190 cm	Order no.: 0201-151 XL (standard)
Sizes 190 to 200 cm	Order no.: 0201-151 XXL

Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))
TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL. Order no.: Please enquire.

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- Optional: different textile storage bag (hanging or lying storage)
- Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 5 POLYRAN-L-S

Chemical resistance	■■■■■
Mechanical resistance	■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■
Heat: Hot vapour at about 350 °C	■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested





Suit description, VS 5 CHEMBA®

- One-piece (gas-tight) chemical/firefighter protective suit (ET: Emergency Team) with permanently integrated VS 5 visor (permanent antifog coating inside), gas-tight zip with protective cover, permanently fitted protective gloves and footlets with drip cuffs (protective boots can optionally be supplied or connected directly), integrated strain-relief belt and pressure relief valves, covered and protected (incl. HPE membrane).
- Subsequently referred to as “CPS” (chemical protective suit) for unrestricted operational tasks in fire services, industry, plant fire brigades and military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1a ET = gas-tight chemical protective suit with an ambient air-independent breathing air supply worn inside the chemical protective suit, e.g. compressed air equipment.

CHEMBA® FABRIC

- The CHEMBA® (Eptaform®) fabric consists of a highly chemical resistant multi-layer barrier laminate combined with a mechanically durable PA matrix base fabric. The unique FABRIC DUAL PROTECTION SHIELD TECHNOLOGY offers superior, unlimited safety in use and complies with EN 943 (puncture resistance class 3). Nevertheless, the VS 5 CHEMBA® protective suit is ultra-light and flexible. The bright orange signal colour ensures increased work safety.

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible visor, mechanically robust, firmly fitted to/integrated in the suit and antifog coating on the inside.

ZIP FASTENER

- With liquid- and gas-tight HPP zip (approx. 130 cm), chemicals and thermally resistant, sewn with protective suit and permanently joined to TOP seam cover. Closes from top to bottom for safety. Zip on the right side.
- > Including fabric cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN B+ – standard size 10, HPE elastomer CBRN protective glove with barrier laminate inner glove; colour: black
- Protective gloves-standard: permanently integrated, not changeable.
- 5-finger cotton undergloves included

FOOTLETS OF SUIT MATERIAL (STANDARD)

- The footlets made of suit material also have a drip cuff. This allows the wearer to slip into an optional protective boot and fold the drip cuffs over the boot for additional splash protection. -> Optional: PROTECTIVE BOOTS: As VS 5 CHEMBA ST variant also available with fixed protective boots.

RECOMMENDED ADDITIONAL EQUIPMENT

- Standard protective boot: HPE-1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black; can be delivered with packed suit (not fixed to suit).
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots HPE-3 HAZGUARD® / HPE-2 ACIFORT®

- PROTECTIVE BOOTS: As VS 5 CHEMBA ST version also available with fixed protective boots.
- Standard forced ventilation system: Narghilè system (360° rotatable external connection with internal Euro coupling – optionally available with TESIMAX F-AU T connector (internal air distribution with 2 plug-in nipples and a coupling for use with SCBA; see F-AU/CHEMBA user manual(s)).

INTEGRATED EQUIPMENT

- Permanently integrated strain relief belt for ergonomic stabilization of the suit during use
- Cotton undergloves
- Radio device pocket, inside

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS

(according to PPE Regulation (EU) 2016/425)
for CHEMBA® protective suits

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 in combination with EN 943-2-ET LIMITED USE; normal robustness: type 1a protective clothing (internal SCBA)
- S = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:


- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Four individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 5 CHEMBA®
- COUNTRY OF ORIGIN: Italy/Romania
- WEIGHT: approx. 2.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  signal orange (outer)

LIFE CYCLE

10 years

ORDERING DATA

-> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0201-163 S
Sizes 160 to 175 cm	Order no.: 0201-163 M
Sizes 170 to 185 cm	Order no.: 0201-163 L
Sizes 180 to 190 cm	Order no.: 0201-163 XL (standard)
Sizes 190 to 200 cm	Order no.: 0201-163 XXL

In the variant with forced ventilation Narghilè system:

0201-163 FNL (VS 5 CHEMBA FNL)

In the variant with permanently attached protective boot:

0201-163 ST (VS 5 CHEMBA ST)

In the variant with permanently attached protective boot:

0201-163 ST (VS 5 CHEMBA ST FNL)

Recommended accessories for VS 5 CHEMBA FNL:





T-connector air distribution with 2 Euro sealing nipples and 1 Euro coupling Order no.: 0250-025

ALL PRODUCTS INCLUDE

- Standard film packaging, transparent
- 5-finger cotton undergloves
- Technical documentation
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 5 CHEMBA

Chemical resistance	
Mechanical resistance	
Heat: Contact heat at approx. 850 ± 50 °C	
Heat: Hot vapour at approx. 350 °C	Not tested
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested

100 %



VS 5 SYKAN 1



Suit description, VS 5 SYKAN 1

- One-piece, gas-tight chemical protective suit (firefighter totally encapsulated suit for emergency teams (ET)), for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With integrated visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and firmly integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/ industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1a ET

SYKAN® 1 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric and one under the fabric.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (130 cm, optionally 180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover
- > Optional: 180 cm zip length

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size 10 HPF elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1a (internal SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 5 SYKAN' 1
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: ■ signal yellow (outer) or ■ Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))

Sizes 150 to 165 cm	Order no.: 0201-250 S
Sizes 160 to 175 cm	Order no.: 0201-250 M
Sizes 170 to 185 cm	Order no.: 0201-250 L
Sizes 180 to 190 cm	Order no.: 0201-250 XL (standard)
Sizes 190 to 200 cm	Order no.: 0201-250 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR instruction manual and online Tesimax Data Service (environmentally friendly)
- Optional: different textile storage bag (hanging or prone storage)
- Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 5 SYKAN 1:

Chemical resistance	■■■■■■■■■■
Mechanical resistance	■■■■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■■■■
Heat: Hot vapour at about 350 °C	■■■■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■■■■■■
Cold: Contact cold at -80 °C	■■■■■■■■■■
Cold: Contact cold at -100 °C	Not tested
100 %	



Suit description, VS 5 SYKAN 2

- One-piece, gas-tight chemical protective suit (firefighter totally encapsulated suit for emergency teams (ET)), for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With integrated visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and firmly integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1a ET

SYKAN® 2 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. SYKAN® 2 fabric is quiet and is more comfortable to wear than the stiffer foil protective suits.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (130 cm, optionally 180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Integrated: fabric labyrinth cover
- > Optional: 180 cm zip length

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
 - > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
 - > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS

(according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
 - EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH):
Protective clothing type 1a (internal SCBA)
 - SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:**
- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)

Advanced material testing:

- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 5 SYKAN' 2
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: signal orange (outer) or Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))







Sizes 150 to 165 cm	Order no.: 0201-212 S
Sizes 160 to 175 cm	Order no.: 0201-212 M
Sizes 170 to 185 cm	Order no.: 0201-212 L
Sizes 180 to 190 cm	Order no.: 0201-212 XL (standard)
Sizes 190 to 200 cm	Order no.: 0201-212 XXL


ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR instruction manual and online Tesimax Data Service (environmentally friendly)
Optional: different textile storage bag (hanging or prone storage)
Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

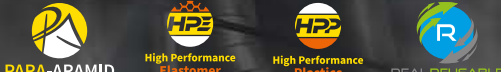
Property rating, VS 5 SYKAN 2:

Resistance	Resistance
Chemical resistance	
Mechanical resistance	
Heat: Contact heat at approx. 850 ± 50 °C	
Heat: Hot vapour at about 350 °C	
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	
Cold: Contact cold at -80 °C	
Cold: Contact cold at -100 °C	Not tested



 100 %





Suit description, VS 5 SYKAN 4

- One-piece, gas-tight chemical protective suit (firefighter totally encapsulated suit for emergency teams (ET)), for use with ambient air-independent breathing apparatus (SCBA, compressed air equipment). With permanently integrated visor, extremely resistant, flame retardant, flexible and permanent antifog coating, (covered) pressure relief valves, gas-tight (covered) zip and firmly integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1a ET

SYKAN® 4 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HP para-aramid) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (130 cm, optionally 180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Integrated: fabric labyrinth cover
- > Optional: 180 cm zip length

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN CK – standard size 10 HPF elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system.
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS
(according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1a (internal SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)



-> Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VS 5 SYKAN® 4
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  signal yellow (outer) or  Nato olive (outer)

LIFE CYCLE

15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

-> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))









Sizes 150 to 165 cm	Order no.: 0201-214 S
Sizes 160 to 175 cm	Order no.: 0201-214 M
Sizes 170 to 185 cm	Order no.: 0201-214 L
Sizes 180 to 190 cm	Order no.: 0201-214 XL (standard)
Sizes 190 to 200 cm	Order no.: 0201-214 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VS 5 SYKAN 4:

Chemical resistance	
Mechanical resistance	
Heat: Contact heat at approx. 850 ± 50 °C	
Heat: Hot vapour at about 350 °C	
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	
Cold: Contact cold at -80 °C	
Cold: Contact cold at -100 °C	
	





VSFF 5 VSFF 20 SERIES

VVSF 5/20 SERIES



Gas- and liquid-tight triple visor assemblage, universally chemical resistant, thermally stable and mechanically extremely robust, UV-resistant, crystal clear, antifog inner with antibacterial characteristics.
15-year long-life warranty



Gas-tight protective gloves: WIPAN C-CK-CK+ made of HPE elastomers, partially (CK+) with chemically resistant, gas- and liquid-tight barrier film



Gas- and liquid-tight protective boots with HPE elastomers, extremely robust, antistatic, highly resistant to chemicals, safety sole – flexible and safe.

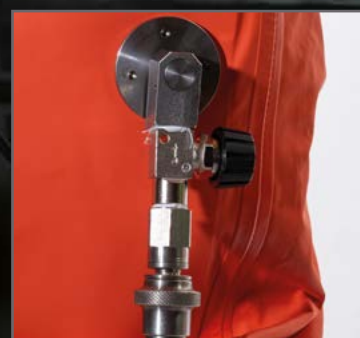


Gas-tight protective material (SYKAN/SILVERFLASH) with chemical resistant, gas- and liquid-tight protective barrier foil

HPF ULTRA zip (SYKAN/SILVERFLASH)
Gas-tight safety zip with chemical resistant, gas- and liquid-tight protective barrier film

Ultra seam (SYKAN/SILVERFLASH)
Patented safety seam made of para-aramid with a chemicals resistant tape cover including barrier film, facing outwards

Power forced ventilation system F-AU 3 with integrated noise reduction (internal) and Safety coupling



VVSF 5 series: gas-tight totally encapsulated chemical protective suit – type 1a (ET) – internal SCBA

The standard equipment varies depending on the model:

- One-piece (gas-tight) totally encapsulated chemical protective suit with a firmly integrated triple Interchangeable VVSF 5 visor (with mechanical protective visor, chemical barrier and permanent antifog coating on the inside), a gas-tight zip (130 cm, optionally 180 cm), with partial fabric cover, integrated protective gloves and boots, integrated braces and pressure relief valves, with double protective fabric cover (incl. high-quality HPE membrane).
- CPS (chemical protective suit) for unlimited use in firefighting, industry, works fire brigades and military.
- Classification by standard: Type 1a (ET) = gas-tight chemical protective suit with breathing air supply worn inside the chemical protective suit, for example compressed air equipment.
- These CPS unite excellent workmanship with high-grade materials.
- All popular firefighter helmets and industrial hard hats can be worn under the suit. We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).
- Service life: 15 years; 10 years, then inspection; +5 years (10 years for limited use CHEMBA)
- Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)
- Sizes: Five individual sizes (M to XXL)
- Optimum fit through range of sizes
- Perfect design also at critical points

Protective suits – special features

- Reusable chemical protective suits according to protection level EN 943-1-2: 1a-b (ET)/1c and 2 ET (type 1a-b-c) and EN 14126 (type 3).
- HARMLESS MATERIALS:
 - PH-neutral behaviour, confirmed by AZO test (material colours).
 - PFOA-free and skin-friendly materials
 - Visions not made of PVC, thus no highly toxic gassing on combustion (flashover); free from heavy metals, asbestos, formaldehyde, CFCs, PCBs and PCTs
 - FREE FROM ADHESIVE: TESIMAX suits are produced without adhesives, making them extremely robust, better washable, more sustainable than other suits and safely reusable.
- Unique fabric structure consisting of gas-tight, chemically and thermally resistant, abrasion-resistant elastomers (TP, HPE), on robust, lightweight and super-flexible base fabrics (PA, HPA and HP para-aramid).
- Unique fabric structure with outward facing chemical barrier (HPP film) that reliably stops hazardous substances without affecting the base fabric as with other protective suits (REAL REUSABLE).
- Outstanding chemical protection for up to 8 h (chemicals tests according to EN 943 Parts 1 and 2) & according to 24-hour gas tests (CWA standard: Finabel 0.7 C NATO).
- Chemical permeation data list for approx. 1000 hazardous substances.
- Outstanding flame retardance according to EN 13274-4 (approx. 850°C), EN 11612 (SILVERFLASH) and flash-over test according to ISO 13506 (SYKAN and SILVERFLASH)
- Outstanding cold protection according to EN 943 and cryogenic tests (-80 °C down to -178 °C)
- Superior tensile and tear propagation strengths, puncture and abrasion resistance as well as seam strength offer extreme mechanical robustness and ensure the wearer's safety – according to EN 14325.
- Approved for use in hazardous areas – reliable protection against arcing.
- Available in different versions: Totally encapsulated suit type 1a ET (SCBA inside), 1b ET (SCBA outside) for work in confined spaces as well as 1c (without SCBA, with compressed air forced ventilation) and Type 3 liquid-tight protective suits as coveralls or powered filter unit protective suits.
- Extensive range of accessories: sensors, light, forced ventilation, functional underwear, optional extras.
- Comprehensive service: professional decon system. Total Care. Safe and sustainable. Worldwide.
- These protective suits unite excellent quality with high-grade materials and components.
- Optimum fit through range of sizes.
- Perfect design also at critical points.





Suit description, VSF 5 SYKAN 2

- One-piece gas-tight chemical protective suit (industrial protective suit) for use with external (optional) compressed-air source in breathing air quality, with (optional) compressed-air hose for connection with a forced ventilation system (F-AU 3), with built-in sterile filter and air distribution system for internal ventilation and for breathing air without use of a mask, directly from the suit. With permanently integrated VSF 5 visor, extremely durable, flame retardant, flexible and with permanent antifog coating, 3 x covered pressure relief valves (spring-loaded, adjustable), gas-tight (covered) zip and permanently integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1c

SYKAN® 2 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. SYKAN® 2 fabric is quiet and is more comfortable to wear than the stiffer foil protective suits.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VSF 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (130 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side. -> Integrated: fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size, 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPF ULTRA-CHEM-GREEN HAZGUARD® / HPF ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS
(according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:



- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1c (without SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VSF 5 SYKAN 2
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  signal orange (outer) or  Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

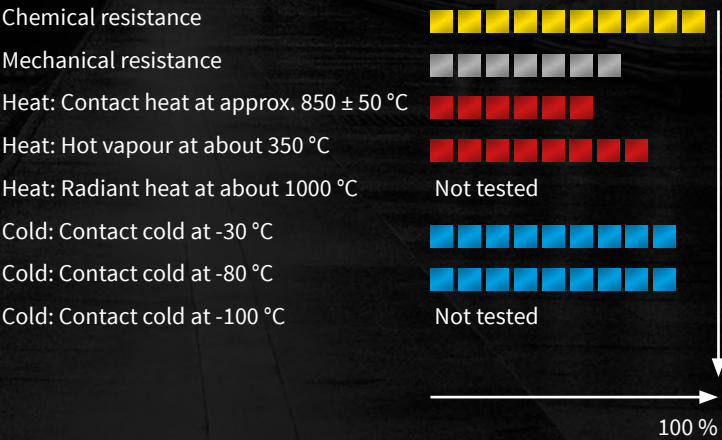
- > Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))
- Sizes 150 to 165 cm Order no.: 0202-212 S
- Sizes 160 to 175 cm Order no.: 0202-212 M
- Sizes 170 to 185 cm Order no.: 0202-212 L
- Sizes 180 to 190 cm Order no.: 0202-212 XL (standard)
- Sizes 190 to 200 cm Order no.: 0202-212 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 5 SYKAN 2:



The VSF 5 SYKAN 2 is also available without sterile filter and with standard Steel replacement system; please enquire.





Suit description, VSF 5 POLYRAN-L-S

- One-piece gas-tight chemical protective suit (industrial protective suit) for use with external (optional) compressed-air source in breathing air quality, with (optional) compressed-air hose for connection with a forced ventilation system (F-AU 3), with built-in sterile filter and air distribution system for internal ventilation and for breathing air without use of a mask, directly from the suit. With permanently integrated VSF 5 visor, extremely durable, flame retardant, flexible and with permanent antifog coating, 3 x covered pressure relief valves (spring-loaded, adjustable), gas-tight (covered) zip and permanently integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military, classification according to EN 943-1/-2 standard: type 1c

POLYRAN®-L or S FABRIC

- Extremely robust base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (and fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Applications: Maritime industry pharmaceuticals, clinics and decontamination measures/applications
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight P-L-S elastomer zip (130 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO

(with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)

- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPF CHEM POLYRAN ACI-FORT® – standard size 46 HPF elastomer protective boot according to EN ISO 20345 S5 SRA AN; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS
(according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1c (without SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VSF 5 POLYRAN®-L-S
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: ■ Signal yellow (outer), ■ signal red (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

Sizes 150 to 165 cm	Order no.: 0202-151 S
Sizes 160 to 175 cm	Order no.: 0202-151 M
Sizes 170 to 185 cm	Order no.: 0202-151 L
Sizes 180 to 190 cm	Order no.: 0202-151 XL (standard)
Sizes 190 to 200 cm	Order no.: 0202-151 XXL

Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))

TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL.

Order no.: Please enquire.

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 5 POLYRAN-L-S

Chemical resistance	■■■■■
Mechanical resistance	■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■
Heat: Hot vapour at about 350 °C	■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested

100 %

The VSF 5 SYKAN 2 is also available without sterile filter and with standard Steel replacement system; please enquire.



VSF 20 POLYRAN-L-S



Suit description, VSF 20 POLYRAN-L-S

- One-piece gas-tight chemical protective suit (industrial protective suit) for use with external (optional) compressed-air source in breathing air quality, with (optional) compressed-air hose for connection with a forced ventilation system (F-AU 3), with built-in air distribution system for internal ventilation and for breathing air without use of a mask, directly from the suit. With permanently integrated VSF 20 visor, extremely durable, flame retardant, flexible and with permanent antifog coating, 3 x covered pressure relief valves (spring-loaded, adjustable), gas-tight (covered) zip and permanently integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military, classification according to EN 943-1/-2 standard: type 1c

POLYRAN®-L or S FABRIC

- Extremely robust base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (and fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Applications: Maritime industry pharmaceuticals, clinics and decontamination measures/applications
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VSF 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight P-L-S elastomer zip (180 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
- > For other sizes please enquire.

- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPF CHEM POLYRAN ACIFORT® – standard size 46 HPF elastomer protective boot according to EN ISO 20345 S5 SRA AN; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1c (without SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VSF 20 POLYRAN®-L-S
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

- COLOUR (outer): signal yellow, signal-red or Nato olive

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

- | | |
|---------------------|-----------------------------------|
| Sizes 150 to 165 cm | Order no.: 0221-151 S |
| Sizes 160 to 175 cm | Order no.: 0221-151 M |
| Sizes 170 to 185 cm | Order no.: 0221-151 L |
| Sizes 180 to 190 cm | Order no.: 0221-151 XL (standard) |
| Sizes 190 to 200 cm | Order no.: 0221-151 XXL |
- Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))
- TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL.
- Order no.: Please enquire.

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 20 POLYRAN-L-S

Chemical resistance	<div><div></div><div></div><div></div><div></div><div></div></div>
Mechanical resistance	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Heat: Contact heat at approx. 850 ± 50 °C	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Heat: Hot vapour at about 350 °C	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested

Illustration with labyrinth cover



Suit description, VSF 20 SYKAN 1

- One-piece gas-tight chemical protective suit (industrial protective suit) for use with external (optional) compressed-air source in breathing air quality, with (optional) compressed-air hose for connection with a forced ventilation system (F-AU 3), with built-in air distribution system for internal ventilation and for breathing air without use of a mask, directly from the suit. With permanently integrated VSF 20 visor, extremely durable, flame retardant, flexible and with permanent antifog coating, 3 x covered pressure relief valves (spring-loaded, adjustable), gas-tight (covered) zip and permanently integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military; ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1c

SYKAN® 1 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric and one under the fabric.

ULTRA SEAM

- **Seam technology:** high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VSF 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size, 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
 - > For other sizes please enquire.
 - > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
 - > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
 - > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
 - > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1c (without SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- VSF 20 SYKAN' 1
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: signal yellow (outer) or Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

-> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))







Sizes 150 to 165 cm	Order no.: 0221-250 S
Sizes 160 to 175 cm	Order no.: 0221-250 M
Sizes 170 to 185 cm	Order no.: 0221-250 L
Sizes 180 to 190 cm	Order no.: 0221-250 XL (standard)
Sizes 190 to 200 cm	Order no.: 0221-250 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or prone storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 20 SYKAN 1:

Chemical resistance	
Mechanical resistance	
Heat: Contact heat at approx. 850 ± 50 °C	
Heat: Hot vapour at about 350 °C	
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	
Cold: Contact cold at -80 °C	
Cold: Contact cold at -100 °C	Not tested

100 %



Suit description, VSF 20 SYKAN 2

- One-piece gas-tight chemical protective suit (industrial protective suit) for use with external (optional) compressed-air source in breathing air quality, with (optional) compressed-air hose for connection with a forced ventilation system (F-AU 3), with built-in air distribution system for internal ventilation and for breathing air without use of a mask, directly from the suit. With permanently integrated VSF 20 visor, extremely durable, flame retardant, flexible and with permanent antifog coating, 3 x covered pressure relief valves (spring-loaded, adjustable), gas-tight (covered) zip and permanently integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1c

SYKAN® 2 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. SYKAN® 2 fabric is quiet and is more comfortable to wear than the stiffer foil protective suits.

ULTRA SEAM

- **Seam technology:** high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VSF 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
 - No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
 - Triple visor assemblage for three times the safety.
 - 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side. -> Integrated: fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size, 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
 - > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
 - > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:



- EN ISO 13688 – protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1c (without SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

PRODUCT REFERENCE

- VSF 20 SYKAN® 2
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  signal orange (outer) or  Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)



ORDERING DATA

-> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0221-212 S
Sizes 160 to 175 cm	Order no.: 0221-212 M
Sizes 170 to 185 cm	Order no.: 0221-212 L
Sizes 180 to 190 cm	Order no.: 0221-212 XL(standard)
Sizes 190 to 200 cm	Order no.: 0221-212 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
 - > Optional: different textile storage bag (hanging or lying storage)
 - > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 20 SYKAN 2:

Test condition	Test result
Chemical resistance	100 %
Mechanical resistance	100 %
Heat: Contact heat at approx. 850 ± 50 °C	100 %
Heat: Hot vapour at about 350 °C	100 %
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	100 %
Cold: Contact cold at -80 °C	100 %
Cold: Contact cold at -100 °C	Not tested



Suit description, VSF 20 SYKAN 4

- One-piece gas-tight chemical protective suit (industrial protective suit) for use with external (optional) compressed-air source in breathing air quality, with (optional) compressed-air hose for connection with a forced ventilation system (F-AU 3), with built-in air distribution system for internal ventilation and for breathing air without use of a mask, directly from the suit. With permanently integrated VSF 20 visor, extremely durable, flame retardant, flexible and with permanent antifog coating, 3 x covered pressure relief valves (spring-loaded, adjustable), gas-tight (covered) zip and permanently integrated protective gloves and boots (optionally footlets and drip cuffs).
- CPS (chemical protective suit) for unrestricted use by fire brigades/industry/works fire brigades/military: ET (Emergency Teams); classification according to EN 943-1/-2 standard: type 1c

SYKAN® 4 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HP para-aramid) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric.

ULTRA SEAM

- **Seam technology:** high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VSF 20), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
 - No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
 - Triple visor assemblage for three times the safety.
 - 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight HPE-ULTRA zip (180 cm), including barrier film, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Integrated: fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN CK – standard size 10 HPF elastomer CBRN protective glove with integrated cotton lining; colour: black
-> For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
-> Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside
- Backpack padding, inside (normative mandatory)

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
 - > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
 - > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYCRAN) and EN 943-2 (SYKAN and SILVERFLASH):
Protective clothing type 1c (without SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

PRODUCT REFERENCE

- VSF 20 SYKAN' 4
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 6.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: signal yellow (outer) or Nato olive (outer)

LIFE CYCLE

15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)



ORDERING DATA

-> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0221-214 S
Sizes 160 to 175 cm	Order no.: 0221-214 M
Sizes 170 to 185 cm	Order no.: 0221-214 L
Sizes 180 to 190 cm	Order no.: 0221-214 XL (standard)
Sizes 190 to 200 cm	Order no.: 0221-214 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 20 SYKAN 4:

Test condition	Test result
Chemical resistance	100 %
Mechanical resistance	100 %
Heat: Contact heat at approx. 850 ± 50 °C	100 %
Heat: Hot vapour at about 350 °C	100 %
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	100 %
Cold: Contact cold at -80 °C	100 %
Cold: Contact cold at -100 °C	100 %





GS 3 SERIES

GS 3/GS 3M



Gas-tight protective hood – optionally available with various full-face breathing masks.



Gas-tight protective gloves: WIPAN C-CK-CK+ made of HPE elastomers, partially (CK+) with chemically resistant, gas- and liquid-tight barrier film.



Gas- and liquid-tight protective boots with HPE elastomers, extremely robust, antistatic, highly resistant to chemicals, safety sole – flexible and safe.



Gas-tight protective material (SYKAN/SILVERFLASH) with chemical resistant, gas- and liquid-tight protective barrier foil

Ultra seam (SYKAN/SILVERFLASH) Patented safety seam made of para-aramid with a chemicals resistant tape cover including barrier film, facing outwards



HPF ULTRA zip (SYKAN/SILVERFLASH) Gas-tight safety zip with chemical resistant, gas- and liquid-tight protective barrier film on the back of the CPS

Description GS 3 (M) series: Gas-tight totally encapsulated suit – SCBA external (with mask)

One-piece (gas-tight) chemical/firefighter protective suit, with super-soft face seal in the hood, for safe (gas-tight) closure under full-face breathing masks, gas-tight zip (on GS 3 130 cm horizontal at back, with vertical option; on GS 3M 130 cm horizontal at back, with 180 cm on right side optional – please specify when ordering), partly with labyrinth cover, permanently fitted protective gloves, boots and pressure relief valves, dual cover/protection (incl. HPE membrane).

- CPS (chemical protective suit) for unlimited industry/firefighter use. This CPS unites an excellent workmanship with high-grade materials.
- GS 3 series, EN 943 type 1b – Protective suit with permanently fitted mask: The open field of vision is sealed with a special elastic high-performance elastomer (HPE) face seal for flexible use with an approved respiratory mask. The GS 3 series can be used with most (tested) breathing apparatus and full-face masks (for selection please enquire). Mask externally secured.
- GS 3 M series EN 943 type 1b – Protective suit with permanently fitted mask: The open field of vision is sealed with a special high-performance elastomer (HPE) face seal in combination with an integrated, permanently fitted, approved respiratory mask. The GS 3 M series can be used with most (tested) breathing apparatus and full-face masks (for selection please enquire) – mask internally secured.

Protective suits – special features

- Reusable chemical protective suits according to protection level EN 943-1-2: 1a-b (ET)/1c and 2 ET (type 1a-b-c) and EN 14126 (type 3).
- HARMLESS MATERIALS:
 - PH-neutral behaviour, confirmed by AZO test (material colours).
 - PFOA-free and skin-friendly materials
 - FREE FROM ADHESIVE: TESIMAX suits are produced without adhesives, making them extremely robust, better washable, more sustainable than other suits and safely reusable.
- Unique fabric structure consisting of gas-tight, chemically and thermally resistant, abrasion-resistant elastomers (TP, HPE), on robust, lightweight and super-flexible base fabrics (PA, HPA and HP para-aramid).
- Unique fabric structure with outward facing chemical barrier (HPP film) that reliably stops hazardous substances without affecting the base fabric as with other protective suits (REAL REUSABLE).
- Outstanding chemical protection for up to 8 h (chemicals tests according to EN 943 Parts 1 and 2) & according to 24-hour gas tests (CWA standard: Finabel 0.7 C NATO).
- Chemical permeation data list for approx. 1000 hazardous substances.
- Elastic, gas-tight face seal with exceptional comfort, ultimate chemical resistance to highly corrosive acids, ketones, esters and amine derivatives and unique flexibility.
- Outstanding flame retardance according to EN 13274-4 (approx. 850°C), EN 11612 (SILVERFLASH) and flash-over test according to ISO 13506 (SYKAN and SILVERFLASH)
- Outstanding cold protection according to EN 943 and cryogenic tests (-80 °C down to -178 °C)
- Superior tensile and tear propagation strengths, puncture and abrasion resistance as well as seam strength offer extreme mechanical robustness and ensure the wearer's safety – according to EN 14325.
- Approved for use in hazardous areas – reliable protection against arcing.
- Available in different versions: Totally encapsulated suit type 1a ET (SCBA inside), 1b ET (SCBA outside) for work in confined spaces as well as 1c (without SCBA, with compressed air forced ventilation) and Type 3 liquid-tight protective suits as coveralls or powered filter unit protective suits.
- Extensive range of accessories: sensors, light, forced ventilation, functional underwear, optional extras.
- Comprehensive service: professional decon system. Total Care. Safe and sustainable. Worldwide.
- These protective suits unite excellent quality with high-grade materials and components.
- Optimum fit through range of sizes.
- Perfect design also at critical points.





Suit description, GS 3/GS 3 M POLYRAN L-S

One-piece (gas-tight) chemical/firefighter protective suit, with super-soft face seal in the hood, for safe (gas-tight) closure under the full-face breathing masks, (covered) pressure relief valves, gas-tight (covered) zip, permanently integrated protective gloves and boots (optional footlets and drip cuffs).

POLYRAN®-L-S FABRIC

- Extremely robust base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (and fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Applications: Maritime industry pharmaceuticals, clinics and decontamination measures/applications
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

EQUIPMENT

- Face seal
- With HPF moulded rubber seal in the hood, for secure (gas-tight) closure under full-face breathing masks, mechanically robust, chemically resistant, permanently connected/integrated with the protective suit.
- Elastic, gas-tight face seal with exceptional comfort, ultimate chemical resistance to highly corrosive acids, ketones, esters and amine derivatives and unique flexibility

ZIP FASTENER

- With liquid- and gas-tight P-L-S elastomer zip (130 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the back.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system. Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPF CHEM POLYRAN ACI-FORT® – standard size 46 HPF elastomer protective boot according to EN ISO 20345 S5 SRA AN; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

OPTIONAL FEATURES

- Permanently integrated, exchangeable standard braces for size adjustment (type 1 or type 2)
- Radio device pocket, inside

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1b (external SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- GS 3 (M) POLYRAN®-L-S
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 4 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

CLOUR: ■ Signal yellow (POLYRAN-L) or ■ signal red (POLYRAN-S)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA, GS 3 POLYRAN®-L

- | | |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Sizes 150 to 165 cm | Order no.: 0222-151 S |
| Sizes 160 to 175 cm | Order no.: 0222-151 M |
| Sizes 170 to 185 cm | Order no.: 0222-151 L |
| Sizes 180 to 190 cm | Order no.: 0222-151 XL (standard) |
| Sizes 190 to 200 cm | Order no.: 0222-151 XXL |
| Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47)) | |

TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL.
Order no.: Please enquire.

ORDERING DATA, GS 3 M POLYRAN®-L

- | | |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Sizes 150 to 165 cm | Order no.: 0223-151 S |
| Sizes 160 to 175 cm | Order no.: 0223-151 M |
| Sizes 170 to 185 cm | Order no.: 0223-151 L |
| Sizes 180 to 190 cm | Order no.: 0223-151 XL (standard) |
| Sizes 190 to 200 cm | Order no.: 0223-151 XXL |
| Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47)) | |

TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL.
Order no.: Please enquire.

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR instruction manual and online Tesimax Data Service (environmentally friendly)
- Optional: different textile storage bag (hanging or prone storage)
- Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, GS 3 (M) POLYRAN-L-S

Chemical resistance	■■■■■
Mechanical resistance	■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■
Heat: Hot vapour at about 350 °C	■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested

100 %





Suit description, GS 3 & GS 3 M SYKAN 1

One-piece (gas-tight) chemical/firefighter protective suit, with super-soft face seal in the hood, for safe (gas-tight) closure under the full-face breathing masks, (covered) pressure relief valves, gas-tight (covered) zip, permanently integrated protective gloves and boots (optional footlets and drip cuffs).

SYKAN® 1 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric and one under the fabric.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- Face seal
- With HPF moulded rubber seal in the hood, for secure (gas-tight) closure under full-face breathing masks, mechanically robust, chemically resistant, permanently connected/integrated with the protective suit.
- Elastic, gas-tight face seal with exceptional comfort, ultimate chemical resistance to highly corrosive acids, ketones, esters and amine derivatives and unique flexibility.

ZIP FASTENER

- With liquid- and gas-tight HPE zip (130 cm), including chemical barrier, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the back.

-> Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size, 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black

-> Other sizes: 43 to 47 (please specify when ordering)
-> alternatively: protective boots: HPE 3 HAZGUARD® EN – green or HPE 4 HAZGUARD® NFPA – green.
-> Alternatively: footlets made of suit material with drip cuff

OPTIONAL FEATURES

- Permanently integrated, exchangeable standard braces for size adjustment (type 1 or 2)
- Radio device pocket, inside

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1b (external SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”

Advanced material testing:

- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)

-> Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- GS 3 (M) SYKAN® 1
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 4 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: signal yellow (outer) or Nato olive (outer)

LIFE CYCLE

15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA, GS SYKAN® 1:

-> Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0222-250 S
Sizes 160 to 175 cm	Order no.: 0222-250 M
Sizes 170 to 185 cm	Order no.: 0222-250 L
Sizes 180 to 190 cm	Order no.: 0222-250 XL (standard)
Sizes 190 to 200 cm	Order no.: 0222-250 XXL

ORDERING DATA, GS 3 M SYKAN® 1

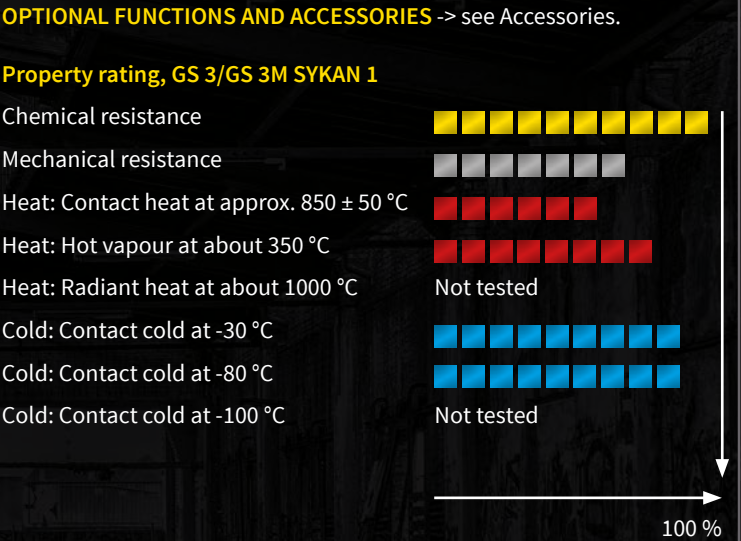
-> Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0223-250 S
Sizes 160 to 175 cm	Order no.: 0223-250 M
Sizes 170 to 185 cm	Order no.: 0223-250 L
Sizes 180 to 190 cm	Order no.: 0223-250 XL (standard)
Sizes 190 to 200 cm	Order no.: 0223-250 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)

-> Optional: different textile storage bag (hanging or lying storage)
-> Optional: plastic CPS transport boxes



GS 3/GS 3M SYKAN 2



Suit description, GS 3/GS 3 M SYKAN 2 (reusable):

One-piece (gas-tight) chemical/firefighter protective suit, with super-soft face seal in the hood, for safe (gas-tight) closure under the full-face breathing masks, (covered) pressure relief valves, gas-tight (covered) zip, permanently integrated protective gloves and boots (optional footlets and drip cuffs).

SYKAN® 2 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. SYKAN® 2 fabric is quiet and is more comfortable to wear than the stiffer foil protective suits.

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- Face seal
- With HPF moulded rubber seal in the hood, for secure (gas-tight) closure under full-face breathing masks, mechanically robust, chemically resistant, permanently connected/integrated with the protective suit.
- Elastic, gas-tight face seal with exceptional comfort, ultimate chemical resistance to highly corrosive acids, ketones, esters and amine derivatives and unique flexibility

ZIP FASTENER

- With liquid- and gas-tight HPE zip (130 cm), including chemical barrier, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the back.
- > Including fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN C – standard size, 10 HPE elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black

- > Other sizes: 43 to 47 (please specify when ordering)
- > alternatively: protective boots: HPE 3 HAZGUARD® EN – green or HPE 4 HAZGUARD® NFPA – green.
- > Alternatively: footlets made of suit material with drip cuff

OPTIONAL FEATURES

- Permanently integrated, exchangeable standard braces for size adjustment (type 1 or 2)
- Radio device pocket, inside

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
- EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1b (external SCBA)
- SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- GS 3 (M) SYKAN® 2
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 4 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: ■ signal orange (outer) or ■ Nato olive (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)



ORDERING DATA, GS SYKAN® 2:

- > Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0222-212 S
Sizes 160 to 175 cm	Order no.: 0222-212 M
Sizes 170 to 185 cm	Order no.: 0222-212 L
Sizes 180 to 190 cm	Order no.: 0222-212 XL (standard)
Sizes 190 to 200 cm	Order no.: 0222-212 XXL

ORDERING DATA, GS 3 M SYKAN® 2

- > Note: See size charts (standard gloves: size 10

(see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0223-212 S
Sizes 160 to 175 cm	Order no.: 0223-212 M
Sizes 170 to 185 cm	Order no.: 0223-212 L
Sizes 180 to 190 cm	Order no.: 0223-212 XL (standard)
Sizes 190 to 200 cm	Order no.: 0223-212 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, GS 3/GS 3M SYKAN 2

Chemical resistance	■■■■■■■■■■
Mechanical resistance	■■■■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■■■■
Heat: Hot vapour at about 350 °C	■■■■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■■■■■■
Cold: Contact cold at -80 °C	■■■■■■■■■■
Cold: Contact cold at -100 °C	Not tested
100 %	





Suit description, GS 3/GS 3 M SYKAN 4 (reusable)

One-piece (gas-tight) chemical/firefighter protective suit, with super-soft face seal in the hood, for safe (gas-tight) closure under the full-face breathing masks, (covered) pressure relief valves, gas-tight (covered) zip, permanently integrated protective gloves and boots (optional footlets and drip cuffs).

SYKAN® 4 FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HP para-aramid) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric.

ULTRA SEAM

- **Seam technology:** high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- Face seal
- With HPF moulded rubber seal in the hood, for secure (gas-tight) closure under full-face breathing masks, mechanically robust, chemically resistant, permanently connected/integrated with the protective suit.
- Elastic, gas-tight face seal with exceptional comfort, ultimate chemical resistance to highly corrosive acids, ketones, esters and amine derivatives and unique flexibility

ZIP FASTENER

- With liquid- and gas-tight HPE zip (130 cm), including chemical barrier, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the back.
- > Including fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN CK – standard size 10 HPF elastomer CBRN protective glove with integrated cotton lining; colour: black
 - > For other sizes please enquire.
 - > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
 - > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > alternatively: protective boots: HPE 3 HAZGUARD® EN – green or HPE 4 HAZGUARD® NFPA – green.
- > Alternatively: footlets made of suit material with drip cuff

OPTIONAL FEATURES

- Permanently integrated, exchangeable standard braces for size adjustment (type 1 or 2)
- Radio device pocket, inside

APPLICATIONS

Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:

- EN ISO 13688 = protective clothing – General requirements
 - EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH):
Protective clothing type 1b (external SCBA)
 - SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:**
- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)

-> Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- GS 3 (M) SYKAN® 4
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 4 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: signal yellow (outer) or Nato olive (outer)

LIFE CYCLE

15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA, GS SYKAN® 4:

-> Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0222-214 S
Sizes 160 to 175 cm	Order no.: 0222-214 M
Sizes 170 to 185 cm	Order no.: 0222-214 L
Sizes 180 to 190 cm	Order no.: 0222-214 XL (standard)
Sizes 190 to 200 cm	Order no.: 0222-214 XXL

ORDERING DATA, GS 3 M SYKAN® 4

-> Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0223-214 S
Sizes 160 to 175 cm	Order no.: 0223-214 M
Sizes 170 to 185 cm	Order no.: 0223-214 L
Sizes 180 to 190 cm,	order no.: 0223-214 XL (standard)
Sizes 190 to 200 cm	Order no.: 0223-214 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
- Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
- Standard nylon storage bag, black
- Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, GS 3/GS 3M SYKAN 4

Resistance	100 %
Chemical resistance	100 %
Mechanical resistance	100 %
Heat: Contact heat at approx. 850 ± 50 °C	100 %
Heat: Hot vapour at about 350 °C	100 %
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	100 %
Cold: Contact cold at -80 °C	100 %
Cold: Contact cold at -100 °C	Not tested



GS 3/GS 3M SILVERFLASH



Suit description, GS 3 & GS 3 M SILVERFLASH

One-piece (gas-tight) chemical/firefighter protective suit, with super-soft face seal in the hood, for safe (gas-tight) closure under the full-face breathing masks, (covered) pressure relief valves, gas-tight (covered) zip, permanently integrated protective gloves and boots (optional footlets and drip cuffs).

SILVERFLASH® FABRIC

- The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The outer fabric is a permanently antistatic heat and radiation shield combined with internal and external chemical barriers (HPP film). The fabric has a robust high-performance base fabric (HP para-aramid) and is coated on the inside with HPE elastomers (red).

ULTRA SEAM

- Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

EQUIPMENT

- Face seal
- With HPF moulded rubber seal in the hood, for secure (gas-tight) closure under full-face breathing masks, mechanically robust, chemically resistant, permanently connected/integrated with the protective suit.
- Elastic, gas-tight face seal with exceptional comfort, ultimate chemical resistance to highly corrosive acids, ketones, esters and amine derivatives and unique flexibility.

ZIP FASTENER

- With liquid- and gas-tight HPE zip (130 cm), including chemical barrier, chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) with ULTRA seam cover. Closes from bottom to top for safety. Zip on the back.
- > Including fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: WIPAN CK – standard size 10 HPF elastomer CBRN protective glove with integrated cotton lining; colour: black
- > For other sizes please enquire.
- > Alternative protective gloves (CBRN): WIPAN B+ (0.3, 0.5, 1.5), WIPAN C or CK (with para-aramid), WIPAN CK-PRO (with para-aramid) or WIPAN CK+ (with integrated para-aramid and protective barrier film)
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPE 1 SA-BF; standard size: 46; HPE elastomer protective boot with FPA approval according to EN 15090, EN ISO 20345 S5 HRO SRC, EN 13832-3, EN 13287; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > alternatively: protective boots: HPE 3 HAZGUARD® EN – green or HPE 4 HAZGUARD® NFPA – green.
- > Alternatively: footlets made of suit material with drip cuff

OPTIONAL FEATURES

- Permanently integrated, exchangeable standard braces for size adjustment (type 1 or 2)
- Radio device pocket, inside

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS
(according to PPE Regulation (EU) 2016/425)

For SYKAN® 1-2-4, POLYRAN-L-S and SILVERFLASH® protective suits:


- EN ISO 13688 = protective clothing – General requirements
 - EN 943-1 (POLYRAN) and EN 943-2 (SYKAN and SILVERFLASH): Protective clothing type 1b (external SCBA)
 - SOLAS = national BG Verkehr approval for “maritime (on board) uses”
- Advanced material testing:
- EN 14126 = protection against biological agents “B”
 - EN 1073-2 = particle-tight protective clothing
 - EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
 - CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
- > Note: The current product certificate and technical product documentation apply.

SIZES

- Five individual sizes (M to XXL)
- Optimum fit through range of sizes

PRODUCT REFERENCE

- GS 3 (M) SILVERFLASH®
- COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 4.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR:  silver reflective (outer)

LIFE CYCLE

- 15 years: 10 years, then inspection for an additional 5 years
- > Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)



ORDERING DATA, GS SILVERFLASH®

-> Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))

Sizes 150 to 165 cm	Order no.: 0222-222 S
Sizes 160 to 175 cm	Order no.: 0222-222 M
Sizes 170 to 185 cm	Order no.: 0222-222 L
Sizes 180 to 190 cm	Order no.: 0222-222 XL (standard)
Sizes 190 to 200 cm	Order no.: 0222-222 XXL

ORDERING DATA, GS 3 M SILVERFLASH®

-> Note: see size charts (standard gloves: size 10 (see size chart) or st. protective boots: size 46 (43-47))









Sizes 150 to 165 cm	Order no.: 0223-222 S
Sizes 160 to 175 cm	Order no.: 0223-222 M
Sizes 170 to 185 cm	Order no.: 0223-222 L
Sizes 180 to 190 cm	Order no.: 0223-222 XL (standard)
Sizes 190 to 200 cm	Order no.: 0223-222 XXL

ALL PRODUCTS INCLUDE

- Participation in TESIMAX SERVICEPOOL for reusable protective suits, available worldwide
 - Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany
 - Standard nylon storage bag, black
 - Technical documentation: QR user manual and online TESIMAX Data Service (environmentally friendly)
- > Optional: different textile storage bag (hanging or lying storage)
- > Optional: plastic CPS transport boxes

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, GS 3/GS 3M SILVERFLASH

Chemical resistance	
Mechanical resistance	
Heat: Contact heat at approx. 850 ± 50 °C	
Heat: Hot vapour at about 350 °C	
Heat: Radiant heat at about 1000 °C	
Cold: Contact cold at -30 °C	
Cold: Contact cold at -80 °C	
Cold: Contact cold at -100 °C	
	Not tested

100 %



VSF 21 SERIES

VSF 21 made of POYLRAN-L (colour: white)
Use with Chemical 2F without UniMask –
please enquire

VSF 21 SERIES



Gas- and liquid-tight triple visor assemblage, universally chemical resistant, thermally stable and mechanically extremely robust, UV-resistant, crystal clear, antifog inner with antibacterial characteristics. 15-year long-life warranty.



Powered filter unit Chemical-2F



Gas- and liquid-tight protective boots with HPE elastomers, extremely robust, antistatic, highly resistant to chemicals, safety sole – flexible and safe.



Gas-tight protective material (SYKAN/SILVERFLASH) with chemical resistant, gas- and liquid-tight protective barrier foil



Viewing/function window

Ultra seam (SYKAN/SILVERFLASH) Patented safety seam made of para-aramid with a chemically resistant tape cover including barrier film, facing outwards

HPF ULTRA zip (SYKAN/SILVERFLASH) Gas-tight safety zip with chemical resistant, gas- and liquid-tight protective barrier film on the back of the CPS

VSF 21: liquid-tight type 3 protective suits with powered filter unit and head section

The standard equipment varies depending on the model.

- CPS (chemical protective suit) for unlimited use in firefighting, industry, works fire brigades and military.
- One-piece, liquid-tight CPS with powered filter unit (type C2F with or without integrated UniMask ventilation system), which generates a permanent positive pressure inside the suit. The VSF 21 protective suit therefore offers outstanding respiratory protection (class TH3) as well as protecting the entire body from contaminants (see approvals, type 3b). The exhaled air is safely discharged from the suit via pressure relief valves.
- CPS classification according to standard: Type 3 = liquid-tight CPS
- According to EN 14605 and EN 14126/EN 12941 (C2F) standard: type 3b (TH3)

Special features

- Unique fabric structure consisting of gas-tight, chemically and thermally resistant, abrasion-resistant elastomers (TP, HPE), on robust, lightweight and super-flexible base fabrics (PA, HPA and HP para-aramid).
- SYKAN: Unique fabric structure with outward facing chemical barrier (HPP film) that reliably stops hazardous substances without affecting the base fabric as with other protective suits (REAL REUSABLE).
- P-L-S/SYKAN: Outstanding chemical protection for up to 8 h (chemicals tests according to EN 943 Parts 1 and 2) & according to 24-hour gas tests (CWA standard: Finabel 0.7 C NATO).
- Chemical permeation data list for approx. 1000 hazardous substances
- P-L-S / SYKAN: outstanding flame protection according to EN 13274-4 (approx. 850 °C) and flashover test according to ISO 13506 (SYKAN)
- SYKAN: Outstanding cold protection according to EN 943 and cryogenic tests (-80 °C down to -178 °C)
- P-L-S/SYKAN: Superior tensile and tear propagation strengths, puncture and abrasion resistance as well as seam strength offer extreme mechanical robustness and ensure the wearer's safety – according to EN 14325.
- HARMLESS MATERIALS:
 - PH-neutral behaviour, confirmed by AZO test (material colours).
 - PFOA-free and skin-friendly materials
 - Visors not made of PVC, thus no highly toxic gassing on combustion (flashover); free from heavy metals, asbestos, formaldehyde, CFCs, PCBs and PCTs
 - FREE FROM ADHESIVE: TESIMAX suits are produced without adhesives, making them extremely robust, better washable, more sustainable than other suits and safely reusable.
- Extensive range of accessories: sensors, light, forced ventilation, functional underwear, optional extras.
- Comprehensive service: professional decon system. Total Care. Safe and sustainable. Worldwide.
- Life cycle: 15 years: 10 years, then inspection; +5 years (10 years for limited use VSF 21 PE-T and PE-D/Panoramate)
- Optional: SMART STOCK with REAL REUSABLE CPS from P-L-S/SYKAN 2 (5 years maintenance-free, vacuum-packed with seal)
- Sizes: Five individual sizes (M to XXL)
- This CPS unites an excellent workmanship with high-grade materials.
- Optimum fit through range of sizes
- Perfect design also at critical points



VSF 21 made of POYLTRAN-L (colour: white)
Use with Chemical 2F without UniMask
– please enquire



Suit description, VSF 21 PE-D Duoform

• One-piece, liquid-tight CPS with powered filter unit (type C2F with or without integrated UniMask ventilation system), which generates a permanent positive pressure inside the suit. The VSF 21 protective suit therefore offers outstanding respiratory protection (class TH3) as well as protecting the entire body from contaminants (see approvals, type 3b). The exhaled air is safely discharged from the suit via pressure relief valves. With permanently integrated protective visor, liquid-tight zip with fabric labyrinth cover, with pressure relief valves (incl. high-quality HPE membrane), with footlets and drip cuff. All popular firefighter helmets and industrial hard hats can be worn under the suit. We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).

DUOFORM FABRIC

• Highly chemical resistant multi-layer foil laminate combined with a mechanically durable PA matrix base fabric

TOP SEAM

• Seam technology: high-quality stitched, chemically and thermally robust thermo-taped seam covering

POWERED FILTER UNIT (optional)

- The internal C2F powered filter unit with integrated TFT display (filter saturation, battery power) is easy to use with the suit.
- The unique air distribution system (with UniMask as standard and other models optionally available) ensures permanently fog-free vision, prevents heat build-up and can be used by all wearers.
- C2F powered filter unit: breathing apparatus weighing up to 3 kg and without breathing resistance, according to G26 classification, German AMR and DGUV regulations); or the powered filter unit is used unchanged with hood/UniMask in combination with a class 3 protective suit.
- The blower supplies the UniMask ventilation system with an adjustable fresh air flow of 120–235 l/min via the breathing air hose.
- For further information, see description of the TESIMAX C2F powered filter unit.

FAN PROTECTION FILTER

- An extensive range of protective filters is available for every application (particle and gas protection filters, incl. C2F ABEK2P3 combat gas filters as well as optional filter/splash protection covers).
- The VSF 21 can be used in contaminated environments, provided that the minimum oxygen concentration is greater than 17 % by volume, to differentiate it from SCBA (self-contained breathing apparatus).
- For further information, see description of the TESIMAX C2F powered filter unit.

EQUIPMENT

• Extremely chemically resistant, flexible interchangeable visor, mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
• No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.

ZIP FASTENER

• With zip, protected by a fabric labyrinth cover (with adhesive strip). Chemicals resistant, sewn with protective suit and firmly welded on with the TOP seam covering (not glued).

PROTECTIVE GLOVES

• Standard protective gloves: NEOTOP – standard size: 10; NBC protective gloves; black
-> With integrated 5-finger cotton undergloves enclosed
-> The glove sizes are based on the protective suit sizes

FOOTLETS with drip cuffs, PROTECTIVE BOOTS

• Footlets made of suit fabric with drip cuff
-> Optional: for protective boots, please enquire
-> The glove sizes are based on the protective suit sizes

INTEGRATED EQUIPMENT

• Elastomer sealing rings for secure connection to the filters (external) and fans (internal).

APPLICATIONS

• Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
-> CBRN protective suit
- NBC risks: Nuclear, biological, chemical
-> NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

• EN ISO 13688 = protective clothing – General requirements
• EN 14605 (Duoform): type 3 protective clothing (liquid-tight protective suit)
Advanced material tests:
• EN 14126 = protection against biological agents “B”
• EN 1073-2 = particle-tight protective clothing
• EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
• CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
-> Note: The current product certificate and technical product documentation apply.

SIZES

• Five individual sizes (M to XXL)
• Optimum fit through range of sizes

PRODUCT REFERENCE

• VSF 21 PE-D
• COUNTRY OF ORIGIN: GERMANY
• WEIGHT: less than 2 kg without extras, in size L; with footlets/boots: approx. 1.75 kg

COLOUR: signal yellow

LIFE CYCLE

10 years

ORDERING DATA

Sizes 150 to 165 cm	Order no.: 0450-163 S
Sizes 160 to 175 cm	Order no.: 0450-163 M
Sizes 170 to 185 cm	Order no.: 0450-163 L
Sizes 180 to 190 cm	Order no.: 0450-163 XL (standard)
Sizes 190 to 200 cm	Order no.: 0450-163 XXL

Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))

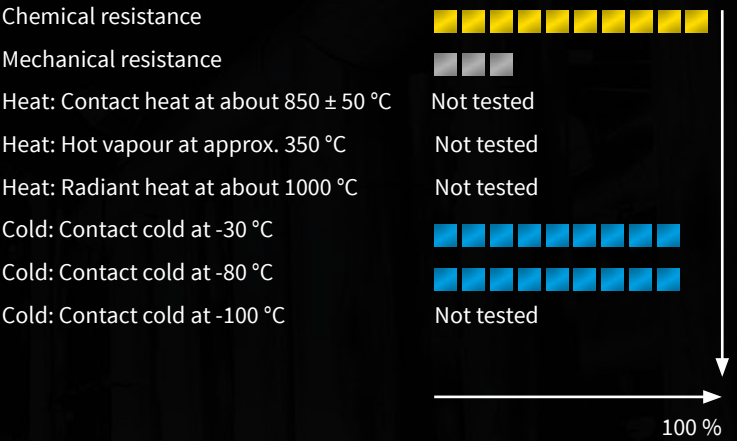
ALL PRODUCTS INCLUDE

• Film packaging
• Technical documentation: QR instruction manual and online Tesimax Data Service (environmentally friendly)
Optional: different textile storage bag (hanging or prone storage)
Optional: plastic CPS transport boxes

OPTIONAL FEATURES AND ACCESSORIES

• CHEMICAL 2F PAPR with FILTERS & ACCESSORIES
-> see Accessories.
• For further accessories and options, see CPS Accessories.

Property rating, VSF 21 PE-D



Subject to technical changes without notice; product may deviate from illustrations; system with UniMask



Suit description, VSF 21 PE-T Tessaform

• One-piece, liquid-tight CPS with powered filter unit (type C2F with or without integrated UniMask ventilation system), which generates a permanent positive pressure inside the suit. The VSF 21 protective suit therefore offers outstanding respiratory protection (class TH3) as well as protecting the entire body from contaminants (see approvals, type 3b). The exhaled air is safely discharged from the suit via pressure relief valves. With permanently integrated protective visor, liquid-tight zip with fabric labyrinth cover, with pressure relief valves (incl. high-quality HPE membrane), with footlets and drip cuff. All popular firefighter helmets and industrial hard hats can be worn under the suit. We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).

TESSAFORM FABRIC

• Highly chemical resistant multi-layer foil laminate combined with a mechanically reinforced PP matrix base fabric

TOP SEAM

• Seam technology: high-quality stitched, chemically and thermally robust thermo-taped seam covering

POWERED FILTER UNIT

- The internal C2F powered filter unit with integrated TFT display (filter saturation, battery power) is easy to use with the suit.
- The unique air distribution system (with UniMask as standard and other models optionally available) ensures permanently fog-free vision, prevents heat build-up and can be used by all wearers.
- C2F powered filter unit: breathing apparatus weighing up to 3 kg and without breathing resistance, according to G26 classification, German AMR and DGUV regulations); or the powered filter unit is used unchanged with hood/UniMask in combination with a class 3 protective suit.
- The blower supplies the UniMask ventilation system with an adjustable fresh air flow of 120–235 l/min via the breathing air hose.
- For further information, see description of the TESIMAX C2F powered filter unit.

FAN PROTECTION FILTER

- An extensive range of protective filters is available for every application (particle and gas protection filters, incl. C2F ABEK2P3 combat gas filters as well as optional filter/splash protection covers).
- The VSF 21 can be used in contaminated environments, provided that the minimum oxygen concentration is greater than 17 % by volume, to differentiate it from SCBA (self-contained breathing apparatus).
- For further information, see description of the TESIMAX C2F powered filter unit.

EQUIPMENT

• Extremely chemically resistant, flexible interchangeable visor, mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
• No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.

ZIP FASTENER

• With zip, protected by a fabric labyrinth cover (with adhesive strip). Chemicals resistant, sewn with protective suit and firmly welded on with the TOP seam covering (not glued).

PROTECTIVE GLOVES

• Standard protective gloves: NBC barrier gloves – Standard size: 10
-> With integrated 5-finger cotton undergloves enclosed
-> Optionally with elastomer overgloves for mechanical and chemical protection
-> The glove sizes are based on the protective suit sizes

FOOTLETS with drip cuffs, PROTECTIVE BOOTS

• Footlets made of suit fabric with drip cuff
-> Optional: for protective boots, please enquire
-> The glove sizes are based on the protective suit sizes

INTEGRATED EQUIPMENT

• Elastomer sealing rings for secure connection to the filters (external) and fans (internal).

APPLICATIONS

• Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
> CBRN protective suit
- NBC risks: Nuclear, biological, chemical
-> NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

• EN ISO 13688 = protective clothing – General requirements
• EN 14605 (Duoform): type 3 protective clothing (liquid-tight protective suit)
Advanced material tests:
• EN 14126 = protection against biological agents “B”
• EN 1073-2 = particle-tight protective clothing
• EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
• CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
-> Note: The current product certificate and technical product documentation apply.

SIZES

• Five individual sizes (M to XXL)
• Optimum fit through range of sizes

PRODUCT REFERENCE

• VSF 21 PE-T
• COUNTRY OF ORIGIN: ROMANIA
• WEIGHT: less than 2 kg without extras, in size L; with footlets/boots: approx. 1.75 kg

• Colour: grey

LIFE CYCLE

10 years

ORDERING DATA

Sizes 150 to 165 cm	Order no.: 0450-166 S
Sizes 160 to 175 cm	Order no.: 0450-166 M
Sizes 170 to 185 cm	Order no.: 0450-166 L
Sizes 180 to 190 cm	Order no.: 0450-166 XL standard)
Sizes 190 to 200 cm	Order no.: 0450-166 XXL

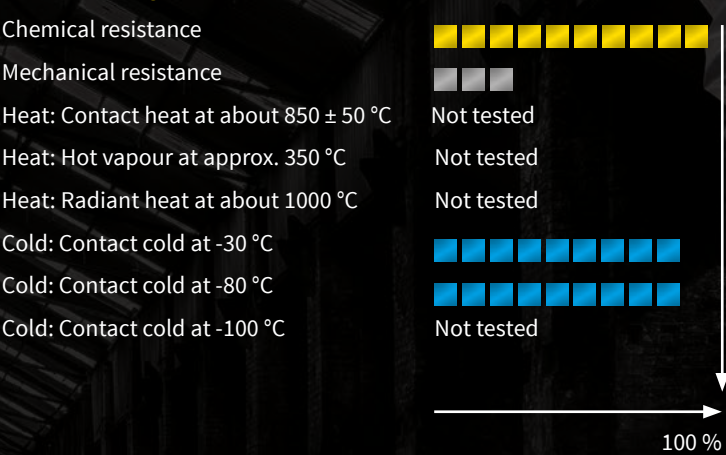
ALL PRODUCTS INCLUDE

• Film packaging
• Technical documentation: QR instruction manual and online Tesimax Data Service (environmentally friendly)
Optional: different textile storage bag (hanging or prone storage)
Optional: plastic CPS transport boxes

OPTIONAL FEATURES AND ACCESSORIES

• CHEMICAL 2F PAPR with FILTERS & ACCESSORIES
-> see Accessories.
• For further accessories and options, see CPS Accessories.

Property rating, VSF 21 PE-T



Subject to technical changes without notice; product may deviate from illustrations; system with UniMask
Use with Chemical 2F without UniMask – please enquire

Suit description, VSF 21 POLYRAN L-S

• One-piece, liquid-tight CPS with powered filter unit (type C2F with or without integrated UniMask ventilation system), which generates a permanent positive pressure inside the suit. The VSF 21 protective suit therefore offers outstanding respiratory protection (class TH3) as well as protecting the entire body from contaminants (see approvals, type 3b). The exhaled air is safely discharged from the suit via pressure relief valves. With permanently integrated VS 5 triple visor (with mechanical protection visor, chemical barrier and permanent antifog coating on the inside), liquid-tight, gas-tight zip (130 cm) with optional fabric labyrinth cover, with pressure relief valves (incl. high-quality HPE membrane), permanently integrated protective gloves/boots, optionally with footlets and drip cuff. All popular firefighter helmets and industrial hard hats can be worn under the suit. We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).

POLYRAN®-L-S FABRIC

- Extremely robust base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (and fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2

TOP SEAM

- Seam technology: high-quality stitched (para-aramid thread) and thermo-fused seam covering

POWERED FILTER UNIT (optional)

- The internal C2F powered filter unit with integrated TFT display (filter saturation, battery power) is easy to use with the suit.
- The unique UniMask air distribution system ensures permanently fog-free vision, prevents heat build-up and can be used by all wearers.
- C2F powered filter unit: breathing apparatus weighing up to 3 kg and without breathing resistance, according to G26 classification, German AMR and DGUV regulations); or the powered filter unit is used unchanged with hood/UniMask in combination with a class 3 protective suit.
- The blower supplies the UniMask ventilation system with an adjustable fresh air flow of 120–235 l/min via the breathing air hose.
- For further information, see description of the TESIMAX C2F powered filter unit.

FAN PROTECTION FILTER

- An extensive range of protective filters is available for every application (particle and gas protection filters, incl. C2F ABEK2P3 combat gas filters as well as optional filter/splash protection covers).
- The VSF 21 can be used in contaminated environments, provided that the minimum oxygen concentration is greater than 17 % by volume, to differentiate it from SCBA (self-contained breathing apparatus).
- For further information, see description of the TESIMAX C2F powered filter unit.

EQUIPMENT

- VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
- No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
- Triple visor assemblage for three times the safety.
- 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
- > Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

- With liquid- and gas-tight P-L-S elastomer zip (130 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the right side.
- > Optional fabric labyrinth cover

PROTECTIVE GLOVES

- Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
- > For other sizes please enquire.
- > Alternative protective gloves please enquire
- Standard WT protective gloves: Steel glove change system
- > Alternative: Quick-lock glove system

PROTECTIVE BOOTS

- Standard interchangeable protective boot: HPF CHEM POLYRAN ACIFORT® – standard size 46 HPF elastomer protective boot according to EN ISO 20345 S5 SRA AN; colour: black
- > Other sizes: 43 to 47 (please specify when ordering)
- > Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
- > Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

- Permanently integrated, exchangeable standard braces for size adjustment (type 1)
- Radio device pocket, inside

APPLICATIONS

- Pharmaceuticals, clinics, military and civil defence, industry, maritime and fire services (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
- > CBRN protective suit
- NBC risks: Nuclear, biological, chemical
- > NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

- For SYKAN® 2 and POLYRAN-L-S suits:
- EN ISO 13688 = protective clothing – General requirements
 - EN 14605 (POLYRAN-L-S and SYKAN): type 3 protective clothing (liquid-tight protective suit)





Advanced material tests:

- EN 14126 = protection against biological agents “B”
- EN 1073-2 = particle-tight protective clothing
- EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
- CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)

-> Note: The current product certificate and technical product documentation apply.

SIZES: Five individual sizes (M to XXL)
• Optimum fit through range of sizes

PRODUCT REFERENCE

- VSF 21 POLYRAN®-L(-S) • COUNTRY OF ORIGIN: GERMANY
- WEIGHT: approx. 4 kg without extras, in size L, with footlets/boots: approx. 1.75 kg
- COLOUR:  Signal yellow (outer, P-L),  signal red (outer, P-S)

SERVICE LIFE:

15 years: 10 years, then inspection for an additional 5 years
-> Optional: SMART STOCK (5 years maintenance-free, vacuum packaged with seal)

ORDERING DATA

Sizes 150 to 165 cm	Order no.: 0450-151 S
Sizes 160 to 175 cm	Order no.: 0450-151 M
Sizes 170 to 185 cm	Order no.: 0450-151 L
Sizes 180 to 190 cm	Order no.: 0450-151 XL (standard)
Sizes 190 to 200 cm,	order no.: 0450-151 XXL

Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))
TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL. For order no., please enquire.


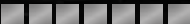



ALL PRODUCTS INCLUDE

- See all other protective suits

OPTIONAL FEATURES AND ACCESSORIES

- CHEMICAL 2F PAPR with FILTERS & ACCESSORIES
- > see Accessories.
- For further accessories and options, see CPS Accessories.

Property rating, VSF 21 POLYRAN-L-S

Chemical resistance	
Mechanical resistance	
Heat: Contact heat at approx. 850 ± 50 °C	
Heat: Hot vapour at about 350 °C	
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	
Cold: Contact cold at -80 °C	Not tested
Cold: Contact cold at -100 °C	Not tested

100 %





Suit description, VSF 21 SYKAN 2

• One-piece, liquid-tight CPS with powered filter unit (type C2F with or without integrated UniMask ventilation system), which generates a permanent positive pressure inside the suit. The VSF 21 protective suit therefore offers outstanding respiratory protection (class TH3) as well as protecting the entire body from contaminants (see approvals, type 3b). The exhaled air is safely discharged from the suit via pressure relief valves. With permanently integrated VS 5 triple visor (with mechanical protection visor, chemical barrier and permanent antifog coating on the inside), liquid-tight, gas-tight zip (130 cm) with optional fabric labyrinth cover, with pressure relief valves (incl. high-quality HPE membrane), permanently integrated protective gloves/boots, optionally with footlets and drip cuff. All popular firefighter helmets and industrial hard hats can be worn under the suit. We recommend a helmet, for example according to EN 443 for firefighter helmets, EN 16473 for technical rescue, EN 397 for industrial helmets and EN 12492 for mountaineering helmets (see accessories).

SYKAN® 2 FABRIC

• The gas- and liquid-tight, chemical resistant fabric structure consists of four layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric. SYKAN® 2 fabric is quiet and is more comfortable to wear than the stiffer foil protective suits.

ULTRA SEAM

• Seam technology: high quality sewn with chemically and thermally resistant para-aramid thread. External seam cover with a welded high-performance elastomer tape (HPE), i.e. thermo-welded to the fabric. The tape has a unique, integrated chemical barrier (HPP film) similar to the protective suit fabric.

POWERED FILTER UNIT (optional)

- The internal C2F powered filter unit with integrated TFT display (filter saturation, battery power) is easy to use with the suit.
- The unique UniMask air distribution system ensures permanently fog-free vision, prevents heat build-up and can be used by all wearers.
- C2F powered filter unit: breathing apparatus weighing up to 3 kg and without breathing resistance, according to G26 classification, German AMR and DGUV regulations); or the powered filter unit is used unchanged with hood/UniMask in combination with a class 3 protective suit.
- The blower supplies the UniMask ventilation system with an adjustable fresh air flow of 120–235 l/min via the breathing air hose. For further information, see description of the TESIMAX C2F powered filter unit.

FAN PROTECTION FILTER

- An extensive range of protective filters is available for every application (particle and gas protection filters, incl. C2F ABEK2P3 combat gas filters as well as optional filter/splash protection covers).
- The VSF 21 can be used in contaminated environments, provided that the minimum oxygen concentration is greater than 17 % by volume, to differentiate it from SCBA (self-contained breathing apparatus).
-> For further information, see description of the TESIMAX C2F powered filter unit.

EQUIPMENT

• VISOR: Extremely chemically resistant, flexible interchangeable visor (VS 5), mechanically robust, firmly fitted to/integrated in the suit and permanent antifog coating on the inside.
• No toxic gassing during combustion (deflagration, flashover) to protect the suit wearer.
• Triple visor assemblage for three times the safety.
• 15-year guarantee: on crystal clear vision through the visor with maximum light transmission (>90%).
-> Optional: Self-adhesive, exchangeable tear-off visor with lug (included: with VS 20 SILVERFLASH®)

ZIP FASTENER

• With liquid- and gas-tight P-L-S elastomer zip (130 cm), chemicals and thermally resistant, sewn with protective suit and permanently welded (not glued) to TOP seam cover. Closes from bottom to top for safety. Zip on the right side.
-> Optional fabric labyrinth cover

PROTECTIVE GLOVES

• Standard interchangeable protective gloves: MECH BLUE 351 – standard size 10, NBC protective glove with integrated cotton lining; colour: blue
-> For other sizes please enquire.
-> Alternative -> For other protective gloves please enquire
• Standard WT protective gloves: Steel glove change system
-> Alternative: Quick-lock glove system

PROTECTIVE BOOTS

• Standard interchangeable protective boot: HPF CHEM POLYRAN ACIFORT® – standard size 46 HPF elastomer protective boot according to EN ISO 20345 S5 SRA AN; colour: black
-> Other sizes: 43 to 47 (please specify when ordering)
-> Alternatively: protective boots: HPE ULTRA-CHEM-GREEN HAZGUARD® / HPE ULTRA-CHEM-BLACK SA-BF (FPA)
-> Alternatively: footlets made of suit material with drip cuff

INTEGRATED EQUIPMENT

• Permanently integrated, exchangeable standard braces for size adjustment (type 1)
• Radio device pocket, inside

APPLICATIONS: Pharmaceuticals, clinics, military and civil defence, industry, shipping and fire brigades (unlimited)

Comprehensive protection

- CBRN risks: Chemical, biological, radioactive, nuclear
-> CBRN protective suit
- NBC risks: Nuclear, biological, chemical
-> NBC protective suit
- Industry: Gases, liquids, aerosols, chemicals, cryogenic media (hydrogen, nitrogen) and deflagration (flashover)
- Defence: Combat gases

OVERVIEW OF STANDARDS – APPROVALS (according to PPE Regulation (EU) 2016/425)

For SYKAN® 2 and POLYRAN-L-S suits:
• EN ISO 13688 = protective clothing – General requirements
• EN 14605 (POLYRAN-L-S and SYKAN): type 3 protective clothing (liquid-tight protective suit)

Advanced material tests:

• EN 14126 = protection against biological agents “B”
• EN 1073-2 = particle-tight protective clothing
• EN 1149 = antistatic properties, dissipative (static inhibitor, ex factory)
• CBRN Finabel 0.7 GAS-TESTED (gases – complete protective suit with components)
-> Note: The current product certificate and technical product documentation apply.

SIZES: Five individual sizes (M to XXL)
• Optimum fit through range of sizes

PRODUCT REFERENCE

• VSF 21 SYKAN® 2 • COUNTRY OF ORIGIN: GERMANY
• WEIGHT: approx. 5.5 kg without extras, in size L, with footlets/boots: approx. 1.75 kg

COLOUR: ■ signal orange (outer) or ■ Nato olive (outer)

SERVICE LIFE: 15 years: 10 years, then inspection for a 5 year extension -> optional: SMART STOCK (5 years maintenance free, vacuum packed with seal)

ORDERING DATA

> Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))

Sizes 150 to 165 cm	Order no.: 0450-212 S
Sizes 160 to 175 cm	Order no.: 0450-212 M
Sizes 170 to 185 cm	Order no.: 0450-212 L
Sizes 180 to 190 cm	Order no.: 0450-212 XL (standard)
Sizes 190 to 200 cm	Order no.: 0450-212 XXL

Note: see size charts (standard gloves: size 10 (see size chart) or standard protective boots: size 46 (43–47))
TIP: Also available in the even more rugged, durable POLYRAN-S in sizes S – XXL. For order no., please enquire.

ALL PRODUCTS INCLUDE

• Participation in TESIMAX SERVICEPOOL for reusable protective suits, worldwide
• Participation in TESIMAX real-time training (RTT) for reusable protective suits, available in Germany

OPTIONAL FUNCTIONS AND ACCESSORIES -> see Accessories.

Property rating, VSF 21 SYKAN 2:

Chemical resistance	■■■■■■■■■■
Mechanical resistance	■■■■■■■■
Heat: Contact heat at approx. 850 ± 50 °C	■■■■■■■■
Heat: Hot vapour at about 350 °C	■■■■■■■■
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	■■■■■■■■■■
Cold: Contact cold at -80 °C	■■■■■■■■■■
Cold: Contact cold at -100 °C	Not tested

100 %





Suit description, Panoramate

Exceptional full body and respiratory protection for highly contaminated environments. Designed for use with powered air-purifying respirator CleanAIR® Chemical 2F. Superior durability, light weight, excellent field of vision and freedom of breathing guarantee exceptional comfort for the user.

FUNCTIONS AND BENEFITS

- The panoramic visor provides a wide field of vision
- Transverse front entry opening with zip. Storm flap with double zip
- Elastic ribbing on waist and chest for better mobility.
- Fully taped seams
- Easy, secure connection of coverall and powered filter unit thanks to special garment grommets

APPLICATIONS

- First responders and emergency teams
- Viral and biological protection
- Remediation operations
- Nuclear industry
- Laboratories
- Pharmaceutical industry

TECHNICAL DATA, 2550 Lite

• EN 12941+A1:2009	TH3
• EN 1073-1:2019-3	Class 3
• EN 14605+A1-1:2009	Type 4
• EN ISO 13982-1:2004	Type 5
• EN 13034+A1:2009	Type 6
• EN 14126:2004	4-B, 5-B, 6-B

TECHNICAL DATA, 3550 Lite

• EN 12941+A1:2009	TH3
• EN 1073-1:2019-3	Class 3
• EN 14605+A1-1:2009	Types 3 and 4
• EN ISO 13982-1:2004	Type 5
• EN 13034+A1:2009	Type 6
• EN 14126:2004	3-B, 4-B, 5-B, 6-B

TWO PRODUCT VARIANTS

Panoramate 3550 Lite

This coverall is made of antistatic CPM® material and provides optimal protection against solid and liquids aerosols and liquid chemicals at pressure up to 2 bars, including radioactive and biological contamination.

Panoramate 2550 Lite

This coverall is made of antistatic CMF material and provides optimal protection against solid and liquids aerosols including radioactive and biological contamination.

PANORAMATE 2550/3550 LITE FUNCTIONS

Unrestricted vision

- The panoramic visor provides a wide field of vision

Easy to put on and take off through transverse front entry opening with zip

- Storm flap with double zip

Free movement

- Elastic ribbing on waist and chest for better mobility

Airtight

- Fully taped seams

3 PANORAMATE 2550/3550 LITE FEATURES

Safety

- Emergency rip cord

Exhalation valve

- Maintains optimal pressure in the suit for full range of movement.

Tight connection

- Double elasticated cuffs.


Secure interface

- Easy, secure connection of coverall and powered filter unit thanks to special garment grommets.

Tight connection

Attached socks with boot flaps.

COLOUR

-  Signal yellow (outer)

ORDERING DATA

CleanAIR® Panoramate 2550 lite, sizes S, M, L, XL

Sizes 150 to 165 cm	Order no.: 0450-401 S
Sizes 160 to 175 cm	Order no.: 0450-401 M
Sizes 170 to 185 cm	Order no.: 0450-401 L
Sizes 180 to 190 cm	Order no.: 0450-401 XL (standard)

CleanAIR® Panoramate 3550 lite, sizes S, M, L, XL

Sizes 150 to 165 cm	Order no.: 0450-400 S
Sizes 160 to 175 cm	Order no.: 0450-400 M
Sizes 170 to 185 cm	Order no.: 0450-400 L
Sizes 180 to 190 cm	Order no.: 0450-400 XL (standard)

POWERED FILTER UNIT (OPTIONAL)

- The internal C2F powered filter unit with integrated TFT display (filter saturation, battery power) is easy to use with the suit.

- The unique air distribution system ensures permanently fog-free vision, prevents heat build-up and can be used by all wearers.

- C2F powered filter unit: breathing apparatus weighing up to 3 kg and without breathing resistance, according to G26 classification, German AMR and DGUV regulations); or the powered filter unit is used unchanged with hood/UniMask in combination with a class 3 protective suit.

- The blower supplies the UniMask ventilation system with an adjustable fresh air flow of 120–235 l/min via the breathing air hose. For further information, see description of the TESIMAX C2F powered filter unit.

FAN PROTECTION FILTER

- An extensive range of protective filters is available for every application (particle and gas protection filters, incl. C2F ABEK2P3 combat gas filters as well as optional filter/splash protection covers).

- The VSF 21 suit can be used in contaminated environments, provided that the minimum oxygen concentration is greater than 17 % by volume, to differentiate it from SCBA (self-contained breathing apparatus).

- > For further information, see description of the TESIMAX C2F powered filter unit.





ESK SERIES

ESK SERIES

Respiratory protection



Elastomer CBRN protective gloves, partially double-layered and permanently integrated (various models)
Provides comprehensive protection, for example for CBRN operations or decontamination.



Gas- and liquid-tight protective boots with HPE elastomers, extremely robust, antistatic, highly resistant to chemicals, safety sole – flexible and safe.



ESK series: One-piece protective suit

The standard equipment varies depending on the model

- One-piece chemical protective suit (CPS) with hood or face seal, which is cut such that it provides a firm seal around a full-face breathing mask.
- These protective suits offer splash and spray protection against liquid chemicals in the chemical, agricultural and food industry and for fire departments and rescue services.

The following applies to all models:

- Seams sewn with safety thread and thermo-welded (tape made of suit fabric): TOP SEAM construction
- Optimum fit through range of sizes
- Perfect design also at critical points
- Zip position: ESK 3 models have the zip
 - at the front, protected by fabric labyrinth cover, closable – see product description for details
 - or at the back, to allow for the face seal, protected by fabric labyrinth cover, closable – see product description for details
- Versions: with elasticated arm, leg and hood (standard: ESK 3 POLYRAN-L/S)
- Extended versions: Without elasticated hood or with face seal (moulded rubber seal)
- HPE elastomer IIR face seal) and (partly permanently) attached gloves and footlets
- Foot straps or boots – see product description for details

ESK models/approvals (according to PPE Regulation (EU) 2016/425)

The following apply to ESK protective suits:

- All models have a standard colour – see product description for details
- EN ISO 13688 = protective clothing – General requirements
- For each ESK protective suit model – main standard:
 - ESK 3 POLYRAN-L/S type 3 (EN 14605) = liquid-tight CPS (reusable)
 - ESK S5 PE-T: Type 3 (EN 14605) = liquid-tight CPS (limited use)
 - ESK 1 PE-D/+ / S3 PE-T/+ /++: Type 3 (EN 14605) = liquid-tight CPS (limited use)
 - Incl. SOLAS approvals of models ESK 1 PE-D+, ESK S3 PE+/++ and ESK 3 POLYRAN-L (national BG Verkehr approval for maritime uses on board)
 - ESK 1 T+: Type 4 (EN 14605) = spray-tight CPS (limited use)
 - ESK 1 T: Type 5/6 (EN 13034) = particle-tight CPS (limited use)
- Extended approvals (EN 1149, EN 1073, EN 14126, Types 4, 5, 6) – see product description for details

For further options, see CPS Accessories.

ESK S5 PE-T



Suit description, ESK S 5 PE-T:

- One-piece protective suit with chemical resistant visor (antifog) in the hood; for safe use/combination with self-contained breathing apparatus (SCBA). This protective suit unites excellent quality with high-grade materials. This protective suit features a liquid-tight zip with adhesive tape cover (liquid-tight). Additional features:
- With footlets and drip cuff as well as sleeves with permanently welded-on gloves
- Glove system: Integrated NBC barrier protection glove (including separate cotton 5-finger underglove; optional overglove, e.g.: Mech Blue 351 or WIPAN B); flexible glove configuration available This offers maximum chemical, mechanical and thermal resistance of the glove system; size: 10 (for other sizes please enquire)
- Double zip cover with additional zip cover
- Liquid-tight zip

Fabric description, S 5 PE-T

The PE-D fabric has good electrical properties (according to EN 1149). The fabric offers an exceptional protection against radioactive particles, biological hazards and chemicals; it is impermeable to liquids, antistatic, offers limited flame-retardance and is self-extinguishing (type 3-B; colour: grey). Applications: Pharmaceuticals, clinics, military and civil defence, industry and firefighters

Properties, S 5 PE-T

- Colour: grey
- Approvals: Cat. 3 type 3-B – (antistatic) liquid-tight protective clothing against biological agents and Type 4, 5 and 6 with particle and aerosol protection (EN 1073-2, EN 14126, EN 14605, EN 13982, EN 13034, EN 1149, EN ISO 13688)
- Seam technology: High-quality stitched and thermo-taped seam covers
- Service life S5 PE-T: up to 10 years according to manufacturer's guideline

Ordering data:

Sizes 164 to 170 cm Order no.: 0200-163 S (please enquire)
Sizes 170 to 176 cm Order no.: 0200-163 M (please enquire)
Sizes 176 to 182 cm Order no.: 0200-163 L (please enquire)
Sizes 182 to 188 cm Order no.: 0200-163 XL (standard)
Sizes 188 to 194 cm Order no.: 0200-163 XXL (standard)

Property rating, S 5 PE-T

Chemical resistance*	<div><div></div></div>
Mechanical resistance*	<div><div></div></div>
Liquid-tightness	<div><div></div></div>
Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	
Aerosol-tightness (spray-tightness)	<div><div></div></div>
Particle-tightness (dust-tightness) Contaminating radiation in particle form	<div><div></div></div>
Flammability	Self-extinguishing
Antistatic properties	EN 1149-1

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

- For additional accessories (gloves, boots), please enquire.

welded-on gloves

optional: overglove, e.g.:
Mech Blue 351 or WIPAN B



ESK 3 SYKAN 1



Suit description ESK SYKAN 1:

- One-piece protective suit with rubber trim in the hood. This protective suit unites excellent quality with high-grade materials.
- Elastic foot loop on legs and drip cuffs
- Version with butyl sealing cuffs on the arm (allowing a flexible glove configuration)
- Zip with labyrinth cover

SYKAN® 1 FABRIC

The gas- and liquid-tight, chemical resistant fabric structure consists of five layers. The fabric has a robust high-performance base fabric (HPA) coated on both sides with chemically resistant, abrasion-resistant high-performance elastomers (HPE). The outside has a signal colour, the inside is grey. In addition, the fabric structure features a unique chemical barrier (HPP film), facing outwards, above the base fabric and one under the fabric.

- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Outstanding chemical resistance, for example against acids, alkalis and solvents.
- Low gas permeability (also against war gasses)
- Good ageing, weathering and ozone resistance
- Applications: Industry
- Colour: signal yellow (outer)/grey (inner)
- Extremely high thermal resilience: For short periods up to 850 °C (deflagration)
- For short periods up to -196 °C (liquid nitrogen)
- Outstanding mechanical strength over entire service life; very low fabric weight
- Approvals: EN ISO 13688:2013, EN 14605:2005/A1:2009, Type 3-B (reusable suit)
- Weight: SUPERLIGHT (please enquire)
- Service life: up to 15 years according to manufacturer's guideline

Order variant: With gloves/boots

- Protective gloves are optional (please specify when ordering)
- Safety boots: optional (please specify size when ordering)

Ordering data, ESK 3 SYKAN® 1:

Sizes 160 to 175 cm Order no.: 0198-250 M
Sizes 170 to 185 cm Order no.: 0198-250 L
Sizes 180 to 190 cm Order no.: 0198-250 XL (standard)
Sizes 190 to 200 cm Order no.: 0198-250 XXL

Property rating, ESK 3 SYKAN 1:

Chemical resistance	<div><div></div></div>
Mechanical resistance	<div><div></div></div>
Heat: Contact heat at approx. 850 ± 50 °C	<div><div></div></div>
Heat: Hot vapour at about 350 °C	<div><div></div></div>
Heat: Radiant heat at about 1000 °C	Not tested
Cold: Contact cold at -30 °C	<div><div></div></div>
Cold: Contact cold at -80 °C	<div><div></div></div>
Cold: Contact cold at -100 °C	Not tested

The ESK 3 SYKAN 1 is also available in other protective materials (SYKAN 2 and 4), each in different comfort versions (like the ESK 3 POLY-RAN-L-S) – please enquire.



ESK S3 PE-T



Suit description, ESK S 3 PE-T:

- One-piece protective suit with form rubber seal in the hood for secure fit under full-face breathing masks. This protective suit unites excellent quality with high-grade materials. The wide face cutout is surrounded with a special elastomer face seal that allows the use of all popular full-face masks.
- With footlets and drip cuff, sleeves with integrated elastic closure with thumb loop
- Double zip cover with additional adhesive tape cover

Fabric description, S 3 PE-T

The PE-D fabric has good electrical properties (according to EN 1149). The fabric offers an exceptional protection against radioactive particles, biological hazards and chemicals; it is impermeable to liquids, antistatic, offers limited flame-retardance and is self-extinguishing (type 3-B; colour: grey). The PE-T is also very rugged mechanically.

- Applications: Pharmaceuticals, clinics, military and civil defence, industry and firefighters

Properties, S 3 PE-T

- Colour: grey
- Approvals: Cat. 3 type 3-B – (antistatic) liquid-tight protective clothing against biological agents and Type 4, 5 and 6 with particle and aerosol protection (EN 1073-2, EN 14126, EN 14605, EN 13982, EN 13034, EN 1149, EN ISO 13688)
- Seam technology: High-quality stitched and thermo-taped seam covers
- Service life:
 - S3 PE-T: up to 10 years according to manufacturer's guideline
 - S3 PE-T+/+: up to 10 years according to manufacturer's guideline

Ordering data:

- Sizes 164 to 170 cm **Order no.: 0200-224 S (please enquire)**
- Sizes 170 to 176 cm **Order no.: 0200-224 M (please enquire)**
- Sizes 176 to 182 cm **Order no.: 0200-224 L (please enquire)**
- Sizes 182 to 188 cm **Order no.: 0200-224 XL (standard)**
- Sizes 188 to 194 cm **Order no.: 0200-224 XXL (standard)**

Property rating, S 3 PE-T

Chemical resistance*	<div></div>
Mechanical resistance*	<div></div>
Liquid-tightness	<div></div>
Infective agents –	<div></div>
Resistance on contact with	<div></div>
synthetic blood and body fluids	<div></div>
Protection against biological hazards according to EN 14126 (B)	<div></div>
Aerosol-tightness (spray-tightness)	<div></div>
Particle-tightness (dust-tightness)	<div></div>
Contaminating radiation in particle form	<div></div>
Flammability	Self-extinguishing
Antistatic properties	EN 1149-1

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

- For additional accessories (gloves, boots), please enquire.



ESK poncho jacket



Description: POLYRAN-L poncho jacket:

- Backpack for SCBA
- Long sleeves with elastic closure
- Elasticated waistband
- Covered front zip (velcro)
- Piped neckline
- Covered feedthrough below shoulder seam on right side
- Seams fused on the outside
- Colour: yellow
- Matrix PA base fabric coated on both sides with PA (Performance TP)

The poncho can only be used in combination with PPE approved according to EN Cat. III (Types 1 to 6, Type 1b coveralls) and only serves as an additional dirt and mechanical protective barrier in case of contamination.

Ordering data:

- Sizes 164 to 170 cm **Order no.: 0198-200 S (please enquire)**
- Sizes 170 to 176 cm **Order no.: 0198-200 M (please enquire)**
- Sizes 176 to 182 cm **Order no.: 0198-200 L (please enquire)**
- Sizes 182 to 188 cm **Order no.: 0198-200 XL (please enquire)**
- Sizes 188 to 194 cm **Order no.: 0198-200 XXL (please enquire)**

S 3 PE: Order variants:

0200-225: S3 PE-T+

- integrated NEO NBC elastomer protective glove; size: 10 (for other sizes please enquire)
- Integrated footlets
 - Sizes S, M or L (please enquire)
 - Sizes XL or XXL (standard)

Specify sizes when ordering

0200-226: S3 PE-T++

Integrated NBC barrier protection glove (including separate cotton 5-finger underglove; optional overglove, e.g.: Mech Blue 351 or WIPAN B)

This glove system offers maximum chemical, mechanical and thermal resistance.

- Approvals: Cat. 3 type 3-B – (antistatic) liquid-tight protective clothing against biological agents and Type 4, 5 and 6 with particle and aerosol protection (EN 1073-2, EN 14126, EN 14605, EN 13982, EN 13034, EN 1149, EN ISO 13688)
 - Sizes S, M or L (please enquire)
 - Sizes XL or XXL (standard)

Specify sizes when ordering




ESK 3 POLYRAN-L

Suit description, ESK 3 POLYRAN-L

One-piece protective suit with balaclava inside the hood for secure fit for facepieces or full-face respiratory masks. This protective suit unites excellent quality with high-grade materials.

- Zip with labyrinth cover with velcro
- Elasticated hood, arm and leg cuffs (standard)

Fabric description, ESK 3 POLYRAN-L:

- Extremely robust matrix base fabric (PA) coated on both sides with POLYRAN, coated with performance thermoplastic (Performance TP) and permanently sealed with a special varnish (satin gloss/fungicidal coating).
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Applications: Maritime industry pharmaceuticals, clinics and decontamination measures/applications
- Colour:  yellow
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

Ordering data, ESK POLYRAN-L protective suits

- 0198-151 ESK 3 P-L with elasticated arm, leg and face
- 0198-151+ ESK 3 P-L with wrist seals, foot straps and drip cuffs
- 0198-151++ ESK 3 P-L with footlets, drip cuffs and permanently attached gloves (MECH BLUE 351)
- 0198-151+++ ESK 3 P-L with footlets, drip cuffs, face seal and wrist seals
- 0198-151K1 ESK 3 P-L with hood for firefighter helmet without hood elastic, permanently attached or replaceable gloves (MECH BLUE 351) and boots (HPE-2 ACIFORT®)
- 0198-151K2 ESK 3 P-L with hood for firefighter helmet without hood elastic, permanently attached or replaceable gloves (MECH BLUE 351), foot straps and drip cuffs
- 0198-151K3 ESK 3 P-L with hood for firefighter helmet with hood elastic, permanently attached or replaceable gloves (MECH BLUE 351), footlets and drip cuffs

Property rating, ESK 3 POLYRAN-L:

Chemical resistance*	<div><div></div></div>
Mechanical resistance*	<div><div></div></div>
Liquid-tightness	<div><div></div></div>
Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	<div><div></div></div>
Aerosol-tightness (spray-tightness)	<div><div></div></div>
Particle-tightness (dust-tightness) Contaminating radiation in particle form	<div><div></div></div>
Flammability	Self-extinguishing
Antistatic properties	EN 1149-1, static inhibitor

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge. Please contact us for details. **For additional accessories, please enquire.**




ESK 3 POLYRAN-S

Suit description, ESK 3 POLYRAN-S

One-piece protective suit with balaclava inside the hood for secure fit for facepieces or full-face respiratory masks. This protective suit unites excellent quality with high-grade materials.

- Zip with labyrinth cover with velcro
- Elasticated hood, arm and leg cuffs (standard)

Fabric description, ESK 3 POLYRAN-S:

- POLYRAN-coated matrix carrier fabric PA (Performance TP) on both sides
- Extremely light-weight and flexible
- Reusable, washable, very good mechanical properties (wear-, tear- and puncture-resistant)
- Excellent chemical resistance to most acids and alkalis
- Applications: Maritime industry pharmaceuticals, clinics and decontamination measures/applications
- Colour:  red
- Approvals: Cat. 3 Type 3-B, antistatic, liquid-tight protective clothing to EN 14605:2005, and extended material tests according to EN 14126 (B), EN 1149, EN 1073-2
- Seam technology: High-quality stitched and thermo-fused seam covers

Ordering data, ESK POLYRAN-S protective suits

- 0198-152 ESK 3 P-S with elasticated arm, leg and face
- 0198-152+ ESK 3 P-S with wrist seals, foot straps and drip cuffs
- 0198-152++ ESK 3 P-S with footlets, drip cuffs and permanently attached gloves (MECH BLUE 351)
- 0198-152+++ ESK 3 P-S with footlets, drip cuffs, face seal and wrist seals
- 0198-152K1 ESK 3 P-L with hood for firefighter helmet without hood elastic, permanently attached or replaceable gloves (MECH BLUE 351) and boots (HPE-2 ACIFORT®)
- 0198-152K2 ESK 3 P-L with hood for firefighter helmet without hood elastic, permanently attached or replaceable gloves (MECH BLUE 351), foot straps and drip cuffs
- 0198-152K3 ESK 3 P-L with hood for firefighter helmet with hood elastic, permanently attached or replaceable gloves (MECH BLUE 351), footlets and drip cuffs

Property rating, ESK 3 POLYRAN-S

Chemical resistance*	<div><div></div></div>
Mechanical resistance*	<div><div></div></div>
Liquid-tightness	<div><div></div></div>
Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	<div><div></div></div>
Aerosol-tightness (spray-tightness)	<div><div></div></div>
Particle-tightness (dust-tightness) Contaminating radiation in particle form	<div><div></div></div>
Flammability	Self-extinguishing
Antistatic properties	EN 1149-1, static inhibitor

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge. Please contact us for details. **For additional accessories, please enquire.**



ESK 1 T / limited use



Suit description, ESK 1 T

One-piece protective suit (ESK 1 T in blue) with balaclava inside the hood for secure fit for facepieces or full-face masks. This protective suit unites excellent quality with high-grade materials.

- Simple zip cover
- Thumb loops and foot straps for reliable position retention (anti-slip)

Fabric description, ESK 1 T

- The fabric is a newly developed spunbonded nonwoven polypropylene fabric (SMS 50) with four layers with outstanding wearing comfort and protection properties. Outstanding abrasion resistance, tear resistance and seam strength for a long service life.
- Special protection is offered by the very high impermeability to dust (protection against radioactive dust) and the excellent impermeability index against numerous water-soluble chemicals. Despite these outstanding protection properties, the fabric offers an excellent wearing comfort.
- Special feature: Breathable
- Colour: ■ blue = standard with hood
- Approvals: Cat. 3 type 5-6-B – (antistatic) protective clothing against biological agents and Type 4, 5 and 6 with particle and aerosol protection (EN 1073-2, EN 13982, EN 13034, EN 1149, EN ISO 13688)
- Seams: Sewn
- Service life: up to 10 years according to manufacturer's guideline

Ordering data (standard blue with hood):

Sizes 164 to 170 cm	Order no.: 0290-195 S (please enquire)
Sizes 170 to 176 cm	Order no.: 0290-195 M (please enquire)
Sizes 176 to 182 cm	Order no.: 0290-195 L (please enquire)
Sizes 182 to 188 cm	Order no.: 0290-195 XL (standard)
Sizes 188 to 194 cm	Order no.: 0290-195 XXL (standard)

Ordering option: ESK 1 T o.K.

Without hood, colour: ■ white Order no.: 0290-194 S-XXL

Property rating, ESK 1 T

Chemical resistance*	■
Mechanical resistance*	■
Liquid-tightness	Not tested
Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	
Aerosol (spray) tightness	Not tested
Particle-tightness (dust-tightness) Contaminating radiation in particle form	■
Flammability	Self-extinguishing
Antistatic properties	EN 1149

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

Please contact us for details.

For additional accessories, please enquire.



ESK 1 T Plus / limited use



Suit description, ESK 1 T plus

One-piece protective suit with balaclava inside the hood for secure fit for facepieces or full-face respiratory masks. This protective suit unites excellent quality with high-grade materials.

- Simple zip cover
- Thumb loop for reliable position retention (anti-slip)
- Footlets

Fabric description, ESK 1 T plus

- The fabric is a newly developed spunbonded nonwoven polypropylene fabric (Puntiform®) with four layers with outstanding wearing and protection properties. Outstanding abrasion resistance, tear resistance and seam strength for a long service life.
- Special protection is offered by the very high impermeability to dust (protection against radioactive dust) and the excellent impermeability index against numerous water-soluble chemicals. Despite these outstanding protection properties, the fabric offers an excellent wearing comfort.
- Special feature: Breathable fabric with additional outer coating.
- Colour: ■ white
- Approvals: Cat. 3 type 4-6-B – (antistatic) protective clothing against biological agents and Type 4, 5 and 6 with particle and aerosol protection (EN 1073-2, EN 14126, EN 14605, EN 13982, EN 13034, EN 1149, EN ISO 13688)
- Seams with covered, sealed thermo tapes
- Service life: up to 10 years according to manufacturer's guideline

Ordering data:

Sizes 164 to 170 cm	Order no.: 0290-196 S (please enquire)
Sizes 170 to 176 cm	Order no.: 0290-196 M (please enquire)
Sizes 176 to 182 cm	Order no.: 0290-196 L (please enquire)
Sizes 182 to 188 cm	Order no.: 0290-196 XL (standard)
Sizes 188 to 194 cm	Order no.: 0290-196 XXL (standard)

Property rating, ESK 1 T plus

Chemical resistance*	■
Mechanical resistance*	■
Liquid-tightness	Not tested
Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	
Aerosol-tightness (spray-tightness)	■
Particle-tightness (dust-tightness) Contaminating radiation in particle form	■
Flammability	Self-extinguishing
Antistatic properties	EN 1149

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

Please contact us for details.


For additional accessories, please enquire.



Suit description, ESK 1 PE-D:

- One-piece protective suit with balaclava inside the hood for secure fit for facepieces or full-face respiratory masks. This protective suit unites excellent quality with high-grade materials.
- With footlets and drip cuff, sleeves with drip cuff and integrated elastic closure with thumb loop
 - Double zip cover with additional adhesive tape cover
 - Thumb loops and foot straps for reliable position retention (anti-slip)

Fabric description, ESK 1 PE-D

- PERFORMANCE PE-D fabric with antistatic properties:
The ESK 1 PE-D protective clothing has good electrical properties, carries no electrostatic charge and has a residual potential discharge time according to EN 1149 that is neither too long nor too short. The fabric offers an exceptional protection against radioactive particles, biological hazards and chemicals; it has limited flame-retardance and is self-extinguishing.
- Applications: Pharmaceuticals, clinics, military and civil defence, industry and firefighters
- Special feature: Excellent chemical resistance
- Colour: yellow
- Approvals: Cat. 3 Type 3b (antistatic, liquid-tight protective clothing), also Types 4, 5 and 6 with NBC protection (nuclear to EN 1073-2, biological to EN 14126:2003 and chemical to EN 14605)
- Seam technology: High-quality stitched and thermo-taped seam covers
- Service life:
ESK 1 PE-D: up to 10 years according to manufacturer's guideline
ESK 1 PE-D+: up to 10 years according to manufacturer's guideline

Ordering data:

- Sizes 164 to 170 cm **Order no.: 0290-206 S (please enquire)**
Sizes 170 to 176 cm **Order no.: 0290-206 M (please enquire)**
Sizes 176 to 182 cm **Order no.: 0290-206 L (please enquire)**
Sizes 182 to 188 cm **Order no.: 0290-206 XL (standard)**
Sizes 188 to 194 cm **Order no.: 0290-206 XXL (standard)**

Ordering option: ESK 1 PE-D+:

With additional features: **order no. 0292-206**

- With glove system: integrated NEO NBC elastomer overglove; size: 10 (for other sizes please enquire)
- With integrated footlets
- For additional accessories (boots), please enquire
- In sizes S, M, L (please enquire), XL and XXL (standard)

Property rating, ESK 1 PE-D:

Chemical resistance*	<div></div>
Mechanical resistance*	<div></div>
Liquid-tightness	<div></div>
Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	<div></div>
Aerosol-tightness (spray-tightness)	<div></div>
Particle-tightness (dust-tightness) Contaminating radiation in particle form	<div></div>
Flammability	Self-extinguishing
Antistatic properties	EN 1149-1

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge. Please contact us for details. **For additional accessories, please enquire.**

TESIMAX TIP:

In conjunction with the UniMask C2F powered filter unit (type DEKON V Baden-Württemberg System), the ESK 1 PE-D is ideally suited for disaster prevention with the highest protection class TH3.

Furthermore, the system is much easier to wear than a totally encapsulated suit with an (internal) powered filter unit.



Limited use

ESK 3 ANTIVIR ONE



Suit description, ESK 3 ANTIVIR ONE:

One-piece reusable protective suit with balaclava inside the hood, for secure sealing of full-face masks. This protective suit unites excellent quality with high-grade materials.

Features:

- Zip with labyrinth cover with velcro
- Elasticated hood, arm and leg cuffs (standard)

Fabric description – ANTIVIR (trilaminate)

- Extra light trilaminate **tested against virus and bacteria contamination**

Optimum protection

- Against viruses, bacteria and infective agents
- Liquids, (radioactive) particles and dusts

Sustainable & environment-friendly

- Reusable up to 100 times, washable up to 95 °C

Extremely robust

- More tear-resistant, abrasion-resistant and puncture-resistant than conventional limited use protective suits

Superior wearing comfort

- Breathable membranes
- Ultralight and flexible

Excellent resistance to certain chemicals

- See list of chemicals for ESK 3 ANTIVIR protective suits
- Seam technology: High-quality stitched and thermo-fused seam covers
- Colour:  turquoise

Applications

For use in industry, pharmaceuticals, hospitals, rescue and emergency services

Approvals:

EN 14126 (B): Protective clothing – Performance requirements and test methods for protective clothing against infective agents (and EN ISO 13688). Further tested material properties against bacterial/virus penetration, water tightness/water vapour, particles, microbiological purity, biocompatibility according to EN ISO 10993 and EN 13795 (surgical clothing and drapes)

Ordering data:

Sizes 164 to 170 cm	Order no.: 0198-155 S (please enquire)
Sizes 170 to 176 cm	Order no.: 0198-155 M (please enquire)
Sizes 176 to 182 cm	Order no.: 0198-155 L (please enquire)
Sizes 182 to 188 cm	Order no.: 0198-155 XL (standard)
Sizes 188 to 194 cm	Order no.: 0198-155 XXL (standard)

Property rating, ESK 3 ANTIVIR ONE:

Chemical resistance*	<div></div>
Mechanical resistance*	<div></div>
Liquid-tightness Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	Not tested
Aerosol-tightness (spray-tightness)	<div></div>
Particle-tightness (dust-tightness) Contaminating radiation in particle form	<div></div>

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

Please contact us for details.

For additional accessories, please enquire.



ESK 3 ANTIVIR TWO



Suit description, ESK 3 ANTIVIR TWO:

One-piece reusable protective suit with balaclava inside the hood, for secure sealing of full-face masks. This protective suit unites excellent quality with high-grade materials.

Additional equipment:

- Zip with labyrinth cover with velcro
- With footlets and drip cuff
- Version with butyl cuff seals on arm and in head area (face seal)

Fabric description – ANTIVIR (trilaminate)

- Extra light trilaminate **tested against virus and bacteria contamination**

Optimum protection

- Against viruses, bacteria and infective agents
- Liquids, (radioactive) particles and dusts

Sustainable & environment-friendly

- Reusable up to 100 times, washable up to 95 °C

Extremely robust

- More tear-resistant, abrasion-resistant and puncture-resistant than conventional limited use protective suits

Superior wearing comfort

- Breathable membranes
- Ultralight and flexible

Excellent resistance to certain chemicals

- See list of chemicals for ESK 3 ANTIVIR protective suits
- Seam technology: High-quality stitched and thermo-fused seam covers
- Colour:  turquoise

Applications

For use in industry, pharmaceuticals, hospitals, rescue and emergency services

Approvals:

EN 14126 (B): Protective clothing – Performance requirements and test methods for protective clothing against infective agents (and EN ISO 13688). Further tested material properties against bacterial/virus penetration, water tightness/water vapour, particles, microbiological purity, biocompatibility according to EN ISO 10993 and EN 13795 (surgical clothing and drapes)

Ordering data:

Sizes 164 to 170 cm	Order no.: 0198-155+ S (please enquire)
Sizes 170 to 176 cm	Order no.: 0198-155+ M (please enquire)
Sizes 176 to 182 cm	Order no.: 0198-155+ L (please enquire)
Sizes 182 to 188 cm	Order no.: 0198-155+ XL (standard)
Sizes 188 to 194 cm	Order no.: 0198-155+ XXL (standard)

Property rating, ESK 3 ANTIVIR TWO:

Chemical resistance*	<div></div>
Mechanical resistance*	<div></div>
Liquid-tightness Infective agents – Resistance on contact with synthetic blood and body fluids Protection against biological hazards according to EN 14126 (B)	Not tested
Aerosol-tightness (spray-tightness)	<div></div>
Particle-tightness (dust-tightness) Contaminating radiation in particle form	<div></div>
Flammability	Self-extinguishing
Antistatic properties	EN 1149

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.



VENTILATION SYSTEM C2F powered filter unit
Ex (hazardous area) and MEDICAL versions also available
(colour: green)

- The suit is ventilated with a powered filter unit, for example with a ventilated face shield filter. These products feature a visual indication and alarm for remaining battery power and filter saturation. The visual signal is visible both to the wearer and other team members, allowing a partner check during operations, as has been confirmed by safety experts from fire services, disaster relief organizations and the police.
- This system also allows easy putting on and connection of the air supply equipment. The powered filter system is worn on the outside (ESK series).
- The filters can optionally be protected with splash guards, providing protection for elastomer guards. The ventilation system ensures a comfortable climate and sufficient ventilation at a constant air throughput. The area around head is sufficiently ventilated.

Note: The ventilation system (powered filter unit) and the required hood/mask/face shield must be ordered separately.
You can find a suitable selection under CPS accessories.

New generation of powered breathing apparatus
for the filtration of contaminants in the form of
gases, vapours, particles and combinations thereof.

Despite its compact size and low weight, the Chemical 2F offers high mechanical and chemical resistance as well as UV-resistance. Its design and IP64 protection class allow decontamination in the shower. The unique automatic locking system prevents penetration of hazardous materials during filter changes. The full colour display shows all relevant information.

Features and benefits

- Compact design and low weight
- High mechanical and chemical resistance
- Resistance to penetration by liquids and solid particles – IP64
- Decontamination possible in a shower
- Unique automatic locking system
- Enhanced electronic warning system
- Full colour TFT display for clear indication of all relevant information
- Individual working modes HOOD/MASK
- Air flow 120–235 l/m
- Lithium-ion battery and quick charger (charging time <3 h)

Applications

- Chemical industry
- Laboratories
- Pharmaceutical industry
- Renovation work

Example illustration: ESK ANTIVIR ONE with external
powered filter unit



The new high-performance lithium-ion battery is finally available
as a smart option for Chemical 2F®. The high-performance battery
increases the operating time to up to 16 hours.

This means that you no longer need to change or charge the battery for a longer period of time when using a combination of gas and vapour filters.

Technical data

- Air flow 120–235 l/m
- Operating time up to 10 hours with standard battery and up to 16 hours with high-performance battery
- Weight 960 g (with standard battery)
- Noise emission level max. 62 dB
- Dimensions 240 mm x 110 mm x 120 mm
- Standard battery lithium-ion 14.4 V, 2.6 Ah
- High-performance battery lithium-ion 14.4 V, 5.2 Ah
- Certification to EN 12941 TH3, EN 12942 TM3

Product description

Complete sets
Chemical 2F with accessories
(comfort belt, charger, battery and
Air flow indicator and hose, without mask and/or ventilated face shield)

Product code

Order number:

0270-300
plus code:

Code C2F:
MIC51 00 00FC

Spare parts, accessories

- | | |
|-------------------------------------------------------|-------------|
| • Lightweight flexible QuickLOCK™ hose – CA40x1/7" | 71 00 60 |
| • QuickLOCK™ rubber hose – CA40x1/7" | 71 00 86 |
| • Padded comfort belt 2F | 71 00 92 |
| • Decontaminable belt | 51 00 41 |
| • Decontaminable harness | 51 00 42 |
| • Padded comfort harness | 52 00 44.1 |
| • Lithium-ion standard battery 14.4 V, 2.6 Ah | 51 00 10 |
| • Lithium-ion high-performance battery 14.4 V, 5.2 Ah | 51 00 20 |
| • Battery charger | 51 00 30EUR |
| • Battery charger (UK plug) | 51 00 30UK |
| • Hood CA-10, grey, chem. resistant | 721002 |
| • Hood CA-1 (short), orange | 720102 |
| • Hood CA-1 (short), blue | 720102B |
| • Hood CA-2 (long), orange | 720202 |
| • Hood CA-2 (long), blue | 720202 B |
| • UniMask, grey | 720300.01 |
| • UniMask "neoprene" | 720300.08 |

Filter (order number "Filter": 0270-304 plus filter code)

- | | |
|-------------------------------|----------|
| • Particle filter P3 | 50 00 48 |
| • Combined filter A2B2E2K2 P3 | 50 01 68 |
| • Combined filter ABEK Hg P3 | 50 01 66 |

TESIMAX combination filter C2-F CBRN/NBC – A2B2E2K2P3 according to EN 12941, EN 12942, EN 14387, NBC gases

For our comprehensive range of filters, see the next page.

For a suitable selection of hoods and ventilated face shield systems, see "CPS accessories" in this catalogue.

Measures after use

What should I do with ESK protective suits after using them as protection against COVID-19?

Answer:
There is currently no evidence that respiratory viruses such as COVID-19 are transmitted via textiles or bed linen. However, as diseases can be transmitted via droplets, we recommend immediate reconditioning/washing of the protective suits. If a resident or patient has become infected with COVID-19, take the following steps:

- Take off the suit in the same way as a limited use protective suit.
- Take care to touch the protective suits as little as possible. Do not touch your nose, mouth, eyes or face under any circumstances while handling the product.
- For cleaning, place the protective suits directly in the washing machine or, if available first in a water soluble laundry bag (30/60 °C, available from TESIMAX) and do not take them out again before putting them in the washing machine.
- Wash the protective suits at minimum temperature (up to 40 °C for POLYRAN, between 40 and 60 °C (recommended) or 95 °C for ANTIVIR; steam sterilization is also possible) using a suitable detergent*. Then dry them according to the applicable instructions/procedure, e.g. by hanging them up to dry. ANTIVIR protective suits can also be tumble-dried.
- Wash your hands and face often and thoroughly using hand disinfectant.
- In the laundry and during transport, keep clean protective suits strictly separate from dirty laundry. Disinfect all hard surfaces that come into contact with clean and dirty protective clothing with an EPA-registered disinfectant for hard surfaces that is effective against COVID-19.

Must contaminated protective clothing be disposed of by incineration?

- **No.** Only clothing contaminated with highly infective agents must be decontaminated at the place of usage/contamination. Protective clothing that is contaminated with coronavirus is not highly infectious.



Is laundry contaminated with the coronavirus considered highly infectious laundry?

- **No.** It can be fed into a disinfecting washing process with scope B. Scope B = suitable for inactivation of viruses.

Suitable detergent

- Like hospital laundry, washing procedures for protective clothing used in the emergency/ambulance service must have proven disinfection efficacy. This is given if the products are listed by an approved body, such as the RKI (Robert Koch Institute) and/or the VAH (Verbund angewandter Hygiene) in Germany.
- The RKI is a federal institute under the auspices of the Federal Ministry of Health and is the central institution of the German federal government in the field of disease monitoring and prevention.

- Contact TESIMAX for further information on appropriate disinfectants and proper laundry handling procedures.

USAGE TIP:

- **EASY WASH with VIRUSBLOCK:** As an alternative to quick disinfection for (private) end users, washing and gentle drying at 40 °C in a domestic washing machine is possible for ANTIVIR protective suits with VIRUSBLOCK (see user manual).
- Service providers and medical staff should wear ESK series protective suits to avoid infection with COVID-19 (droplets, aerosols).
- Firefighters and first responders should wear ESK series protective suits to avoid infection with COVID-19 (droplets, aerosols).
- Hotel and hospital employees should wear suitable personal protective equipment when handling dirty bedding.
- Others as well as service providers who are at an increased risk of contact with COVID-19 infected persons should use ESK protective clothing.
- Brief your employees thoroughly regarding correct hand washing as well as putting on and taking off protective equipment.

Water soluble laundry bag

- For cold water >30 °C (for hot water >60 °C) (standard bag)
- The laundry bags are available in various sizes. The standard colours are neutral and red. As standard, hot water bags have a red sealing tape and cold water bags with blue one.

Applications:
Packaging of bedding infested with bugs, infectious laundry or dirty laundry in clinics, old people's and nursing homes, hotels, prisons, kindergartens as well as in the public sector, police, firefighters, disaster relief and others.

All products are biodegradable.

To ensure that the soluble laundry bag has fully dissolved, add detergent or disinfectant only after the pre-wash programme.

ESK SERIES standard: EN 14126 Protective clothing

ESK SERIES standard: EN 14126 Protective clothing – Performance requirements and test methods for protective clothing against infective agents

Applications

This standard specifies the requirements and test methods for reusable protective clothing against infective agents that is limited in use.

Performance requirements for material

1. Mechanical requirements and flammability requirements (chemical requirements where applicable) shall be tested and classified in accordance with the test procedures and performance classification system specified in the relevant sections of EN 14325.
2. Performance requirements for resistance to penetration by infective agents are verified by the following tests:

Resistance to penetration of contaminated fluids under hydrostatic pressure. Resistance to penetration by infective agents due to mechanical contact with substances containing contaminated liquids. Resistance to penetration of contaminated liquid aerosols. Resistance to penetration of contaminated solid particles. Performance requirements for seams, joints and assemblages.

Seams, joints and assemblages for protective clothing against infective agents must be tested and classified in accordance with the requirements of the relevant sections of EN 14325.

Requirements for the whole suit

Protective clothing against infective agents must meet the relevant requirements of EN 13688 (general requirements for protective clothing) as well as the requirements for the entire suit as specified in the relevant standard for chemical protective clothing.

Markings

The clothing must be labelled according to the applicable requirements of the relevant standard for chemical protective clothing. The marking for protective clothing against infective agents must contain the following additional information:

1. The number of this European standard.
2. The type of protective clothing with the initial letter "B".
3. The biohazard pictogram



ANTIVIR ONE apron

Description of ANTIVIR ONE apron:

One-piece apron, for safe working e.g. in the dental sector. This apron suit unites excellent quality with high-grade materials.

- Features:
- With ties at neck and waist
 - Elasticated arm cuffs (standard)

Fabric description – ANTIVIR (trilaminate)

- Light trilaminate tested against virus and bacteria contamination
- Standard 100 by OEKO-TEX
- Reusable, washable
- Breathable
- Optimal protection and durability, excellent wearing comfort
- Trilaminate complies with EN 13795 – Surgical clothing and drapes
- Seam technology: High-quality stitched and thermo-fused seam covers

- Colour:  turquoise

Approvals:
EN 14126 (B): Protective clothing – Performance requirements and test methods for protective clothing against infective agents (and EN ISO 13688). Further tested material properties against bacterial/virus penetration, water tightness/water vapour, particles, microbiological purity, biocompatibility according to EN ISO 10993 and EN 13795 (surgical clothing and drapes)

Ordering data
ANTIVIR apron: Order number: 0245-155 (one size)

Property rating (ESK 3) ANTIVIR ONE:

Chemical resistance*	<div><div></div></div>
Mechanical resistance*	<div><div></div></div>
Liquid-tightness	Not tested
Infective agents –	
Resistance on contact with synthetic blood and body fluids	
Protection against biological hazards according to EN 14126 (B)	
Aerosol-tightness (spray-tightness)	<div><div></div></div>
Particle-tightness (dust-tightness)	<div><div></div></div>
Contaminating radiation in particle form	

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

Please contact us for details.
For additional accessories, please enquire.



ANTIVIR ONE cap/bandana

Description of ANTIVIR ONE cap and bandana:

Cap and bandana, for safe working e.g. in the dental sector. This cap unites excellent quality with high-grade materials.

- Features of the cap: Elasticated seam
Features of the bandana: with opening for hairs at back

Fabric description – ANTIVIR (trilaminate)

- Light trilaminate tested against virus and bacteria contamination
- Standard 100 by OEKO-TEX
- Reusable, washable
- Breathable
- Optimal protection and durability, excellent wearing comfort
- Trilaminate complies with EN 13795 – Surgical clothing and drapes
- Seam technology: High-quality stitched and thermo-fused seam covers

- Colour:  turquoise

Approvals:
EN 14126 (B): Protective clothing – Performance requirements and test methods for protective clothing against infective agents (and EN ISO 13688). Further tested material properties against bacterial/virus penetration, water tightness/water vapour, particles, microbiological purity, biocompatibility according to EN ISO 10993 and EN 13795 (surgical clothing and drapes)

Ordering data ANTIVIR cap: Order number: 0670-155 (one size)
Packing: 1 std. pack = 10 pieces
Ordering data ANTIVIR bandana: Order number: 0672-155 (one size)
Packing: 1 std. pack = 10 pieces

Property rating (ESK 3) ANTIVIR ONE:

Chemical resistance*	<div><div></div></div>
Mechanical resistance*	<div><div></div></div>
Liquid-tightness	Not tested
Infective agents –	
Resistance on contact with synthetic blood and body fluids	
Protection against biological hazards according to EN 14126 (B)	
Aerosol-tightness (spray-tightness)	<div><div></div></div>
Particle-tightness (dust-tightness)	<div><div></div></div>
Contaminating radiation in particle form	

*The chemical and physical resistance ratings have been determined according to the applicable standards and based on our current knowledge.

Please contact us for details.
For additional accessories, please enquire.





Accessories

Gloves for protection against chemicals and microorganisms

PREVIOUSLY
> Standard EN 374-1:2003



Protection against chemicals
• Limited protection against chemicals
• Resistance to penetration determined according to EN 374-2:2003



Specific protection against chemicals
• Resistance to penetration determined according to EN 374-2:2003
• Determination of resistance to permeation according to EN 374-3:2003: breakthrough time ≥ 30 min for at least 3 of the 12 test chemicals






Protection against microorganisms (bacteria and fungi)
• Resistance to penetration determined according to EN 374-2:2003
• AQL (acceptable quality limit) at least Level 2

IN FUTURE
> Standard EN ISO 374:1-2016

Chemical protective gloves
Classification is based on 3 test methods:

- Determination of resistance to penetration according to EN 374-2:2014 (air leakage and water leakage test)
- Determination of resistance to permeation according to standard EN 16523-1:2015 (replaces EN 374 3)
- Determination of degradation according to EN 374-4:2013



ONE PICTOGRAM – 3 GLOVE TYPES		
Glove type	Requirements	Markings
Type A	Protection against penetration according to EN 374-2:2014 Minimum permeation time ≥ 30 min for at least 6 chemicals from the list of specified test chemicals	EN ISO 374-1 Type A  AJKLPR
Type B	Protection against penetration according to EN 374-2:2014 Minimum permeation time ≥ 30 min for at least 3 chemicals from the list of specified test chemicals	EN ISO 374-1 Type B  JKL
Type C	Protection against penetration according to EN 374-2:2014 Minimum permeation time ≥ 10 min for at least 1 chemical from the list of specified test chemicals	EN ISO 374-1 Type C 

Degradation test according to EN 374- 4:2013
Impairment of the glove's physical properties due to contact with a chemical substance. To be able to declare chemical protection against one of the listed substances, both the breakthrough time and the degradation must be determined. The result of the degradation test must be stated in the usage instructions.

Six new chemicals have been added to the list of hazardous compounds.

LIST OF DEFINED TEST CHEMICALS			
Code letter	Hazardous material	CAS number	Substance class
A	Methanol	67-56-1	Primary alcohols
B	Acetone	67-64-1	Ketones
C	Acetonitrile	75-05-8	Nitrile compounds
D	Dichloromethane	75-09-2	Chlorinated hydrocarbons
E	Carbon disulphide	75-15-0	Sulphur with organic compounds
F	Toluene	108-88-3	Aromatic hydrocarbons
G	Diethylamine	109-89-7	Amines
H	Tetrahydrofuran	109-99-9	Heterocyclic and ether compounds
I	Acetic acid ethyl ester (ethyl acetate)	141-78-6	Ester
J	n-heptane	142-82-5	Aliphatic hydrocarbons
K	Sodium hydroxide 40 %	1310-73-2	Inorganic alkalis
L	Sulphuric acid 96 %	7664-93-9	Inorganic mineral acids, oxidising
M	Nitric acid 65 %	7697-37-2	Inorganic mineral acid, oxidising
N	Acetic acid 99 %	64-19-7	Organic acids
O	Ammonia 25 %	1336-21-6	Organic alkalis
P	Hydrogen peroxide 30 %	7722-84-1	Peroxides
S	Hydrofluoric acid 40 %	7664-39-3	Inorganic mineral acids
T	Formaldehyde 37 %	50-00-0	Aldehydes

> Standard EN ISO 374:5-2016

Protective gloves against microorganisms
For protection against bacteria and fungi, the glove must pass the penetration test according to EN 374-2:2014.

If protection against viruses is also to be verified, a bacteriophage penetration test in accordance with ISO 16604:2004 (procedure B) must also be carried out and passed.

EN ISO 374-5



Gloves for protection from bacteria and fungus

EN ISO 374-5



Gloves for protection from bacteria, fungus and viruses

VIRUS

Standard EN 388:2016

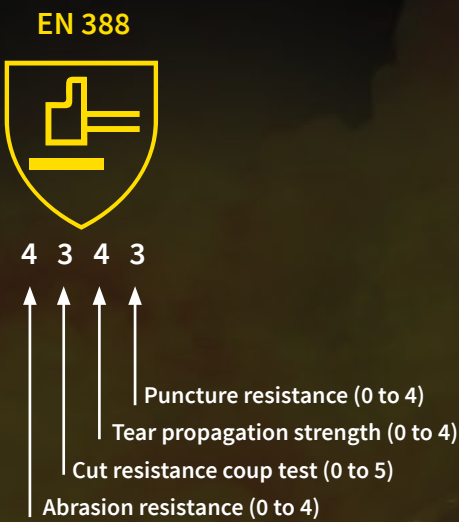
The EN 388 standard applies to protective gloves against mechanical risks.

It specifies requirements, test methods, labelling and manufacturer information against four mechanical hazards: abrasion, cutting, tear propagation and puncture.

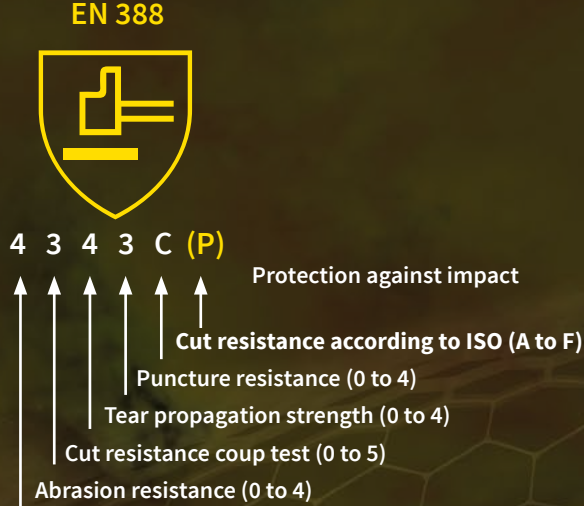
A revision of the standard is necessary because the continuous development of cut-resistant yarns has led to a high scatter in the measured values and poor reproducibility in the coup test.

Pictogram

PREVIOUSLY



IN FUTURE



PERFORMANCE RATING*					
Testing to EN 388	Level 1	Level 2	Level 3	Level4	Level 5
Abrasion resistance (cycles)	100	500	2000	8000	-
Cut resistance – coup test (index)	1.2	1.5	5.0	10.0	20.0
Tear propagation strength (Newton)	10	25	50	75	-
Puncture resistance (Newton)	20	60	100	150	-
Testing to ISO 13997	Level A	Level B	Level C	Level D	Level E
	2	5	10	15	22
* Values greater than or equal to					

Protection against impact

NEW

New test procedure according to EN 13594:2015, which can optionally be carried out to show protection against impacts. Pass or fail test, i.e. if the glove passes the test, a “P” for “Pass” is given below the pictogram after the fifth digit. In the event of failure or non-performance of the test, there is no marking.

Undergloves

TEGERA 8120 underglove

Textile glove, cotton, Cat. I, for assembly work

PRIMARY AREAS OF USE
Fine assembly work, assembly work, acceptance testing, installation work, electrical installation work, warehouse work

LENGTH: 220–270 mm
COLOUR: white
PAIRS PER MULTIPACK/CARTON: 12/300
CLOSURE: with 180° elasticated wristband

- SALIENT FEATURES**
- Comfortable
 - Lightweight
 - Air permeable
 - Good grip
 - Good tactility
 - Supple
 - Specially shaped thumb
 - Chain stitch

Sizes: 6–11

Order no.: 2507-700



Underglove uvex arc protect g1

Hands are at the greatest risk of burns from short circuit electric arcs when working on electrical equipment. The uvex arc protect g1 protective glove provides safe protection against the thermal discharge of a short circuit electric arc. The modacrylic/cotton knit is flame retardant and protects the wearer from second-degree skin burns. The short circuit electric arc glove can also be combined with the uvex power protect V1000 electrician’s glove.

- Features**
- Anatomical fit
 - Excellent flexibility
 - Excellent tactility
 - Suitable for dry working environments
 - Sizes: 7–11
 - Standard ISO 21420:2020, EN 388:2016 + A1:2018, EN 407:2004
 - Levels according to EN 388: 1 X 2 1 X
 - Levels according to EN 407: 4 1 1 1 X X
 - Cotton outer
 - Version with cuff
 - Colours: grey, anthracite

Order no.: 2507-800



CPS STANDARD GLOVES

Overglove: Mech Black

- Specific advantages
- Longer service life due to the high material thickness (puncture and abrasion resistance)
 - Protection of forearm through long cuff

- Application:
- As mechanical protective overglove for all TESIMAX protective suits
 - As additional thermal protective overglove, also available in silver colour.
 - Approved according to Regulation (EU) 2016/425 and complies with standards EN 388 - 2342 C
- * Mechanical hazards (performance levels)
- a: Abrasion resistance (0-4)
- b: Cut resistance (0-5)
- c: Tear resistance (0-4)
- d: Puncture resistance (0-4)
- e: Cut resistance TDM (A-F)
- (P): Protection against impact

Material: para-aramid with silicone coating (black or silver)

Colour: black or silver

Length: approx. 42 cm

Size 12 (one size)

Order no.: 2501-224 MECH BLACK (black colour)

Overglove Mech Blue 351 (protective glove P-L-S)

- Specific advantages
- Excellent comfort and good cold protection through seamless cotton inner knit
 - High resistance to oils, greases and hydrocarbons
 - Suitable for food contact, except fatty foods
 - Good grip due to textured surface

- Application:
- POLYRAN protective suits
 - As mechanical protective overglove MECH 351 for SYKAN/SILVERFLASH protective suits
 - Pharmaceutical industry: maintenance and cleaning work, maintenance work in wet environments
 - Mechanical industry: maintenance work in humid environment (water, oils, greases, hydrocarbons)

Approvals: according to Regulation (EU) 2016/425 and complies with standards EN 388:2016 (4.1.2.1.X); EN 374-1, Type A (K.L.M.N.P.T); EN 374-5, EN ISO 374-5:2016 and EN ISO 374-1:2016

Material: PVC

Colour: Blue

Interior finish: Textile lining

Exterior finish: Grained

Length: 30 cm

Material thickness: 1.35 cm

Size: 10 (standard for protective suits – for other sizes see the glove size chart or enquire)

Order no.: 2507-351



CPS STANDARD GLOVES

WIPAN B+ – CBRN protective glove

- Specific advantages
- Excellent comfort and tactile feel in combination with additional 5-finger cotton knitted glove (inside, optional)
 - Protection against intensive exposure to corrosive solvents, acids, caustic solutions and gasses, combined with sufficient protection against physical strain (according to EN 943).
 - Combat gases (CBRN) tested

- Application:
- SYKAN protective suits
 - Firefighters for unlimited use according to EN 943
 - Pharmaceutical industry and labs: maintenance and cleaning work, maintenance work in wet environments
 - Mechanical industry: maintenance work in humid environment (water, oils, greases, hydrocarbons)

Approvals: according to Regulation (EU) 2016/425 and complies with standards EN 420:2003+A1:2009, EN 388:2016, EN ISO 374-1:2016+A1:2018, EN 374-2:2014, EN 374-4:2013 and EN ISO 374-5:2016

Material: HPE elastomer incl. HPP

Colour: Elastomer outer glove black

Interior finish: With integrated, chemical protection barrier glove (HPP)

Exterior finish: Smooth

Length: 30 cm

Material thickness: IIR 1.5 or 0.5/0.3 cm

Size: 10 (standard for protective suits; other sizes: see glove size chart or enquire)

Order no.: 2509-005

(also available as CBRN protective glove: WIPAN B, without integrated HPPF barrier glove

Order no.: 2507-630)



WIPAN C – NBC protective glove

- Specific advantages
- Excellent comfort and tactile feel
 - Good mechanical and cold resistance due to integrated liner
 - Protection against intensive exposure to corrosive solvents, acids, caustic solutions and gasses, combined with sufficient protection against physical strain (according to EN 943).

- Application:
- SYKAN/SILVERFLASH protective suits
 - Firefighters for unlimited use according to EN 943
 - Pharmaceutical industry and labs: maintenance and cleaning work, maintenance work in wet environments
 - Mechanical industry: maintenance work in humid environment (water, oils, greases, hydrocarbons)

Approvals: according to Regulation (EU) 2016/425 and complies with standards EN 420:2003+A1:2009, EN 388:2016, EN ISO 374-1:2016+A1:2018, EN 374-2:2014, EN 374-4:2013 and EN ISO 374-5:2016

Material: HPF elastomer

Colour: Outer glove black

Interior finish: With integrated liner

Exterior finish: Smooth

Length: 30 cm

Material thickness: Elastomer and liner approx. 1.5 mm

Size: 10 (standard for protective suits; other sizes: see glove size chart or enquire)

Order no.: 2509-001



CPS STANDARD GLOVES

WIPAN CK – THERMO NBC protective glove

- Specific advantages
- Excellent comfort and tactile feel
 - Good mechanical and heat and cold resistance due to integrated liner made of 100% para-aramid
 - Protection against intensive exposure to corrosive solvents, acids, caustic solutions and gasses, combined with sufficient protection against physical strain (according to EN 943).

- Application:
- SYKAN/SILVERFLASH protective suits
 - Firefighters for unlimited use according to EN 943
 - Pharmaceutical industry and labs: maintenance and cleaning work, maintenance work in wet environments
 - Mechanical industry: maintenance work in humid environment (water, oils, greases, hydrocarbons)

Approvals: according to Regulation (EU) 2016/425 and complies with standards EN 420:2003+A1:2009, EN 388:2016, EN ISO 374-1:2016+A1:2018, EN 374-2:2014, EN 374-4:2013 and EN ISO 374-5:2016

- | | |
|---------------------|----------------------------------------------------------------------------------|
| Material: | HPF elastomer |
| Colour: | Outer glove black |
| Interior finish: | With integrated 100% PARA-ARAMID liner |
| Exterior finish: | Smooth |
| Length: | 30 cm |
| Material thickness: | Elastomer and liner approx. 1.5 mm |
| Size: | 10 (standard for protective suits; other sizes: see glove size chart or enquire) |

Order no.: 2509-002



WIPAN CK PRO protective glove

This protective glove consists of a butyl underlayer of and an approximately 0.2 mm thick Viton® coating. The glove's thickness is about 0.6 mm in total. The Viton® coating is resistant to aliphatic and aromatic hydrocarbons (hexane, benzene, toluene, xylene and others), halogenated hydrocarbons (trichloroethylene, perchloroethylene, methylene chloride and others), organic and inorganic acids (diluted to concentrated) and saturated saline solutions.

- Features**
- Excellent resistance
 - Sizes: 8–11
 - Standard EN 420:2003 + A1:2009, EN 388:2016, EN ISO 374-1:2016 + A1:2018
 - Test chemicals methanol (A), toluene (F), sodium hydroxide 40 % (K), sulphuric acid 96 % (L), nitric acid, 65 % (M), acetic acid 99 % (N)
 - Levels according to EN 388: 2 1 2 0 A
 - Outer without lining
 - Coating: bromobutyl, Viton®
 - Version with beaded cuff
 - Colour: black

Order no.: 2509-004



CPS STANDARD GLOVES

WIPAN CK+ – THERMO-CHEM CBRN protective glove

- Specific advantages
- Excellent comfort and tactile feel
 - Good mechanical and heat and cold resistance due to integrated liner made of 100% para-aramid
 - Protection against intensive exposure to corrosive solvents, acids, caustic solutions and gasses, combined with sufficient protection against physical strain (according to EN 943).
 - Unique HPF elastomer construction with integrated 100% PARA-ARAMID liner and chemical protection barrier (HPP)
 - Combat gases (CBRN) tested

- Application:
- SYKAN/SILVERFLASH protective suits
 - Firefighters for unlimited use according to EN 943
 - Pharmaceutical industry and labs: maintenance and cleaning work, maintenance work in wet environments
 - Mechanical industry: maintenance work in humid environment (water, oils, greases, hydrocarbons)

Approvals: according to Regulation (EU) 2016/425 and complies with standards EN 420:2003+A1:2009, EN 388:2016, EN ISO 374-1:2016+A1:2018, EN 374-2:2014, EN 374-4:2013 and EN ISO 374-5:2016

- | | |
|---------------------|----------------------------------------------------------------------------------|
| Material: | HPE elastomer incl. HPP |
| Colour: | Outer glove black |
| Interior finish: | With integrated 100% para-aramid liner and chemical protection barrier (HPP) |
| Exterior finish: | Smooth |
| Length: | 30 cm |
| Material thickness: | Elastomer and liner approx. 1.5 mm |
| Size: | 10 (standard for protective suits; other sizes: see glove size chart or enquire) |

Order no.: 2509-003



Overgloves

Overglove eureka 13-4HFR Heat

MATERIAL: para-aramid fabric, chloroprene composite
Coating type: partially coated
Cuff: Knitted cuff
Standards: ASTM F2675, EN 388:2016, EN 407
Protective properties: heat shielding, cut protection, voltage and arc protection

Fabric tested according to arc test method ASTM F2675. ATPV 5.8-23 Cal/cm² – printed surface on back of hand: arc tested according to ASTM F2675. 23 Cal/cm²

- Flame retardant with contact heat up to 100 °C
- SIZES: 7-11
- Pack: 1 pair, pack of 6 pairs, carton of 60 pairs
- STANDARDS: certified according to EN 388:2016 (performance level 3 X 4 3 E), CUT PROTECTION LEVEL XE, EN 407 (performance level 4 1 3 2 4 X), ASTM F2675
- Colour: green-black
- Sizes: 7-11

Order no.: 2507-134



Overglove uvex power protect V1000

The body is at the greatest risk of electric shock when working on electrical equipment. The uvex power protect V1000 protective glove offers safe protection against electrical voltages up to 1000 V. The natural latex is highly insulating and protects the wearer from electrical discharges through the body. The glove's flexibility offers pleasant wearer comfort and an excellent tactile feel.

Features

- Anatomical fit
- Good grip feel
- Excellent flexibility
- Suitable for dry working environments
- Sizes: 7-11
- Standard EN 60903:2004-07, IEC 60903:2014
- Outer without lining
- Natural latex coating
- Version with cuff
- Colour: red

Order no.: 2507-1000*



Overgloves

Ultranitril 492 protective glove

Good mechanical resistance and long-lasting chemical protection

- Dexterity and wearing comfort due to the anatomical shape and the quality of the flock-lining
- Longer service life: excellent mechanical resistance (abrasion, puncture resistance)

Applications:

- Treating/degreasing metals with solvents
- Machining parts using cutting oil
- Handling aggressive chemical products
- Handling PVC-based glues
- Preparing coatings and varnishes
- Handling oils, solvents and detergents
- Handling plant treatment products

Properties

Material: Nitrile
Length: 32 cm
Thickness: 0.38 mm
Wrist: Straight cuff edge
Colour: green
Inner finish: Flock-lining
Outer finish: Embossed texture on palm
Sizes: 6, 7, 8, 9, 10, 11
Packaging: 1 pair/bag, 10 pairs/bag, 100 pairs/carton

Order no.: 2507-492



Solo 997 protective glove

Excellent disposable protection glove

- Excellent dexterity thanks to flexibility and reduced material thickness
- Can be worn alone or as an overglove
- Recommended for oily environments in industry
- Previous name: Solo Blue 997

Applications:

- Assembly of small oily parts
- Work with composites (resins)
- Manufacturing of medicines
- Pharmaceutical preparation
- Research, analysis, handling of precision parts

Properties

Material: Nitrile
Length: 24 cm
Thickness: 0.1 mm
Colour: blue
Inner finish: Chlorinated
Outer finish: Smooth with pebbled fingertips
Sizes: 6, 7, 8, 9
Packaging: 100 gloves/box; 1000 gloves/carton

Order no.: 2507-997



Overgloves

Overglove: TEGERA 139

Heat and cut protection for heavy-duty jobs. Durable split cowhide on palm and breathable cotton on back. KEVLAR liner inside the glove for extra heat and cut protection. Elasticated wrist for better fit. Safety cuff for extra protection. Reflective wrist band for easy detection in low light situations.
EN 388:2016, 4X44B EN 407:2004, 41324X

SALIENT FEATURES

- Excellent protection
- Good tactility
- Anatomical fit
- Robust
- Resistant to contact heat up to 100 °C
- Reinforced index finger
- Reflector
- Reinforced fingers and thumb

PREVENTS RISK OF

- Burn injuries, heat injuries, abrasion injuries, blisters, grazes, scratches, lacerations

PRIMARY AREAS OF USE

- Sheet-metal work, plate laying, metalwork, hot work

CHARACTERISTICS

- Protects against cuts and heat to Cat. III
- Palm: split grain cowhide
- Back of hand: cotton
- Lining: Kevlar
- Length: 265–305 mm
- Colour: black/yellow
- Pairs per multipack/carton: 6/60
- Closure: 180° elasticated wristband
- Gauntlet model: with safety cuff
- Cut resistance: Class B (EN ISO 13977)
- Cut resistance TDM: 9.24 N (EN ISO 13977)
- Inner fabric: para-aramid
- Outer fabric: cotton, leather, natural latex

- Sizes: 6–15

Order no.: 2502-300

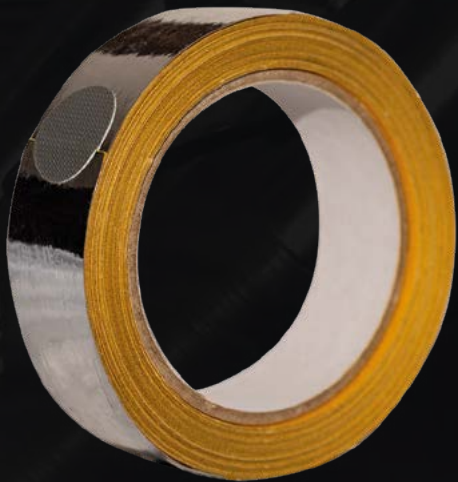


Barrier tape

Discover our new product development – the highly adhesive and secure SILVERFLASH TAPE chemical barrier tape.

- Protection against inorganic acids, alkalis and solvents
- Permeation data available for a wide range of chemicals
- Tested against 15 reference chemicals according to EN 943 for ET CBRN protective suits
- Highly flexible and elastic
- Protects against radiant heat due to aluminisation
- Can be used in combination with type 3, 4, 5 and 6 protective clothing for an optimum seal of the clothing, especially at the joints of the PPE, e.g. gloves and sleeves.
- Colour: silver aluminised
- Quantity: available individually packaged

Order no.: 0800-078*



Topguard CBRN protective tape

- Topguard CBRN Protective Tape is an adhesive tape specifically designed for CBRN protection (against chemical, biological, radiological and nuclear hazards) at transitions and closures between suits and accessories, such as gloves, face mask and boots.
- It offers excellent resistance to industrial chemicals and chemicals and chemical warfare agents (CWA).
- Quantity: available individually packaged

Order no.: 2502-300



SAFETY GOGGLES

GONDOR protective goggles

Applications & usage:
Liquids | coarse dust | molten metal

Features

- Full-view safety goggles for a wide range of applications
- Tight wraparound seal
- Indirect ventilation system prevents lens fogging
- Wide, flexible textile strap ensures a firm fit
- GONDOR CHEM: Version with elastic headband
- GONDOR NV: Particulate version without air inlets
- Available with shatter-proof polycarbonate lenses
- Can be used with a prescription lens insert using the RX-Clip

Properties

Weight:	135 g
Glass material:	Polycarbonate/acetate
UV protection:	100%
Coatings:	HC = scratch-proof | AF AS = antifog, antistatic, scratch resistant | HC AF AS = scratch-proof, antifog, antistatic

Frame colours: smoke | black and red

Order no.: 4000-035



FLEXOR PLUS OUTDOOR

Features

- Extremely sturdy and flexible
- Soft construction material ensures complete absence of pressure points
- Adjustable nose bridge
- Rubberised temples ensure non-slip fit
- Additional rubber lip protects against ingress of foreign bodies from above
- Ultra-lightweight
- Unrestricted field of vision
- High impact absorption

Properties

- Weight: 24 g
- Material: polycarbonate
- UV protection: 100%

Colour: navy blue (frame) and yellow (lens)
Order no.: 9024 125 AF

Colour: white (frame) and blue (lens)
Order no.: 9025 130 AF



SAFETY GOGGLES

PREVENTOR

Features

- Small and very light full-view safety goggle (with headband)
- Non-slip temple ends
- Tight wraparound seal
- Soft nose bridge
- Indirect ventilation system
- Certified as full view safety goggles in conjunction with headband
- Prescription lenses can be inserted with the RX insert; headband ensures firm fit

Properties

- Weight: 59 g
- Material: polycarbonate
- UV protection: 100%

For spectacle wearers:

- RX insert: Prescription lenses can be easily and quickly inserted with the RX insert

COLOUR: Turquoise
Order no.: 9584-006



DEFENDOR XL

Features

Full-view goggles for a wide range of applications

- Tight wraparound seal
- Indirect ventilation system prevents lens fogging
- Wide, adjustable textile strap ensures a firm fit
- Particularly well suitable for prominent facial features
- Unrestricted field of vision

Properties

- Weight: 79 g
- Material: polycarbonate
- UV protection: 100%

Large and very soft face pad

The DEFENDOR XL is particularly suitable for wide faces. With its very soft rubber face pad, the DEFENDOR XL offers a tight fit all round. It is particularly suitable for use in handling liquids or in environments with coarse dust.

COLOUR: ORANGE
Order no.: 9596-165



PROTECTIVE BOOTS

Protective boots HPE-3 (green) DUNLOP® HAZGUARD® Ultra - NFPA

The world's leading hazardous substances protection boot

- Proven chemical resistance according to the applicable global standards (NFPA 1991:2016 and EN 13832)
- Specially developed PVC material for excellent chemicals protection
- Ultragrip® Sipe non-slip outsole
- Steel toe cap & steel midsole
- Meets NFPA 1991 requirements for vapour protection equipment for hazardous substance emergencies
- Protects against liquefied gas and provides limited protection against chemical deflagration
- Protects against electric shock according to ASTM F2413-11 and CSA Z195-14

NFPA 1991:2016
ASTM F2413-11 EH
CSA Z195-14 Ω

Colour: green
Sizes: 39 to 49

Order no.: 0176-004



Top accessories (personal protective equipment) available on request.

Contact TESIMAX for an attractive special offer.

Protective boots HPE-4 (green) DUNLOP® HAZGUARD® full safety ESD – CE

Certified chemical resistance and worker protection

- Certified chemical resistance according to EN 13832-3:2006 J, K, O, P, Q, R
- Additionally certified against sulphuric acid (50 % conc.)
- Certified according to European standard (EN ISO 20345:2011 S5 SRA AN)
- PVC blend with nitrile rubber and polymers for professional chemical protection
- Self-cleaning and SRA++ slip-certified outsole
- Steel toe cap & steel midsole
- Certified protection against electrostatic discharge (ESD) (EN 61340-4-3, Class 2)

EN ISO 20345:2011 S5 SRA AN
EN 13832-3:2006
J, K, O, P, Q, R
and L (50% conc.)
ESD: EN 61340-4-3, cl 2

Colour: green
Sizes: 39 to 49

Order no.: 0176-006



PROTECTIVE BOOTS

Protective boot HPE-1 (black) Fireman SA BF – CE (FPA APPROVED, CBRN TESTED)

The HPE CHEM is our high performance F-NBR elastomer boot for chemical protective suits and is the standard on all of our protective suits (CHEMBA, SYKAN and SILVERFLASH) with replacement system.

- Certified according to EN 15090 TYPE 3 HI3; EN ISO 20345 S5 HRO SRC; EN 13832-3 J, P, Q; EN 13287
- Type 3 boots: Emergencies with hazardous substances, also for fire rescue, firefighting, goods air traffic, buildings, ships and other goods affected by fire.

- Highly chemical resistant
- Contact heat resistance (HRO): 1 minute at 300 °C
- Flame-retardance: 10 seconds according to EN ISO 15025
- Resistant against thermal flux
- Protective toe cap: Protects from impacts up to 200 joule and pressure of up to 15,000 N
- Penetration-resistant sole
- Energy-absorbent heel (20 joules)
- A: Antistatic
- Non-slip sole according to Addendum AI EN ISO 20345:2007

Colour: black
Sizes: 39 to 49

Order no.: 0176-001

Package content: 1 pair of HPF Fireman SA BF in the size and colour of your choice



Top accessories (personal protective equipment) available on request.

Contact TESIMAX for an attractive special offer.

Safety boot HPE-2 JOBGUARD® (black)

- Safety class: EN ISO 20345:2011 S5 AN
- Electrical insulation: Antistatic
- Toe protection: Steel cap
- Sole puncture protection: Steel midsole
- Outer fabric: PVC/nitrile rubber for longer service life
- Additional function: foot and ankle support
- Colour: black
- Lining: antibacterial fabric
- Sole: PVC, conditionally resistant to oil, petrol and acids; antistatic
- Available sizes: EU37 to EU49
- SRA-CERTIFIED ANTI-SLIP OUTSOLE:
- PROTECTIVE CAP AND MIDSOLE:
- Perfect fit and comfortable to wear in everyday use.
- One hundred percent waterproof to keep your feet dry.
- OIL-RESISTANT OUTSOLE:
- SHOCK ABSORPTION: The boots feature shock absorbers in the heel region
- CHEMICALS RESISTANCE: Protection against many different chemicals.

Equipment supplied:
1 pair HPE JOBGUARD in the size and colour of your choice

Order no.: 0176-005



T-FIX securing systems & ergonomics upgrades

CPS T-FIX belay systems for protective suits

- T-FIX: Integrated hip belt with buckle for strain relief for forced ventilation system (can also be connected with T-FIX C4 eyelets, inside)
- T-FIX C1: Vertical (fall) protection with gas-tight feedthrough/connecting carabiner (without harness), $x > 1000\text{ N}$
Order no.: 4000-012
- T-FIX C2: Safety harness for CPS, without carabiner
Order no.: 4000-010
- T-FIX C3: Connection loop sling & carabiner (T-FIX C1+ C2)
Order no.: 4000-011
- T-FIX C4: CPS rescue & recovery system as well as holding eyelets in the hip area
Order no.: 4000-013

T-FIX SAFETY FIREFIGHTER HELMET

- EN 443:2008
(Helmets for fire fighting in buildings and other structures)
- EN 16471:2014
(Firefighters helmets - Helmets for wildland fire fighting)
- EN 16473:2014
(Firefighters helmets - Helmets for technical rescue)
- EN 397
(Industrial protective helmets)
- EN 12492
(Helmets for mountaineers)
Order no.: Please enquire



CPS: Material rescue & recovery system (T-FIX C4), consisting of:

- Horizontal material holders (eyelets), integrated at the hips, usable as recovery/rescue system (outside, 2 eyelets), with strain relief belt inside suit.
- The eyelets are securely integrated in the protective suit fabric and are gas-tight with a tested resistance according to EN 943: $x > 1000\text{ N}$ pull-out force resistance.

Note:

- Not applicable if a F-AU forced ventilation system with comparable strain-relief belt is also used
- Strain-relief belt and type II braces can be combined (recommended)
Order no.: 4000-013

Additional material loops for CPS (external)

Suitable for head torches and other accessories recommended by TESIMAX.

- Horizontal loop for holding equipment (e.g. gas detectors) chest, right, loop made of suit material (fully decontaminable)
Order no.: 0180-005
- Loop for holding equipment (e.g. gas detectors) arm, right, loop made of suit material (fully decontaminable)
Order no.: 0180-008
- Loop for holding equipment (e.g. gas detector) hip, right
Order no.: 0180-009
- Single loop made of suit material (fully decontaminable), horizontal version on left chest (split, approx. 15 cm long)
Order no. 0180-011



MGBR T-Fix C4 system



Additional inside pockets for CPS

Two-way radio device pocket or second inner pocket for smartphone optionally available: (additional inner pocket for two-way radios and transmitter/smartphone/smart devices (right side of chest))

Order no.: 0180-010

- Radio device pocket inside (left chest)
- Radio device pocket inside (right chest)



- CPS visor (tinted), available with:
optional tear-off visor VS 5/VSF 5 series CPS
optional tear-off visor VS 20/VSF 20 series CPS

Tear-off visor – crystal clear for VS 5/VSF 5 Order no.: 0181-038
Tear-off visor – crystal clear for VS 20/VSF 20 Order no.: 0181-039

- Back pad for SCBA protection
- Knee pads for CPS (reinforced and made of suit material)



CPS BRACES

- Type 1 braces (simple Y-shaped loops, adjustable with velcro)
Order no.: 0180-000
- Braces model 2 (carrying strap, pluggable into CPS if prepared, simplified donning and doffing during decontamination, with harness guide for T-FIX/T-FIX C4)
Order no. 0180-001
- Type 3 braces (with ANGEL EYE/video camera and holder for transmitter with battery)
Order no. 0180-030
- Braces, shoulder inner loop feedthrough
Order no. 0180-017



Type 1 braces

- CPS pressure gauge holders, inside on visor, in 2 versions (small loop and large loop)



Pressure gauge holders
Large loop



Pressure gauge holders
Small loop



Type 3 braces



Type 2 braces

Helmets/hard hats



Helmets/hard hats



An industrial climbing helmet in a class of its own! The INCEPTOR GRX has an ergonomic EPS thorax. A neck strap with continuous width adjustment and magnetic closure ensure outstanding wearing comfort. The gear rack, multiple helmet clips and Euroslots allow accessories to be attached. Available with or without ventilation holes and reflective stickers.

As the INCEPTOR GRX meets all performance requirements of EN 397:2012 and all requirements of the PPE Regulation, it can be CE marked and used without restriction for industrial applications.

This award-winning industrial climbing helmet impresses with its striking contours and superior wearing comfort. Its comfortable fit and ease of use make for a versatile helmet system: accessories such as headlamps, visors, hearing protection and neck guards can be easily attached, and the padding inside can be interchanged. The neck strap allows a continuous width adjustment for head circumferences from 54 to 63 cm.

- Approved safety helmet for wearing inside VS 5, VS 20, VSF 5/20 and VSF 21 series suits (please enquire)
- Tested safety helmet for wearing outside GS 3 and ESK series CPS (please enquire)
- Alternative integrated, internal head protection for the GS 3 series (please enquire)
- Continuous size adjustment
- Magnetic closure prevents pinching of skin
- EPS thorax and PC/ABS shell for excellent absorption of high impact energies and high wearing comfort
- Interchangeable padding

Order no.: Please enquire

Top accessories (personal protective equipment) available on request.

Contact TESIMAX for an attractive special offer.

CHEST marking (black/thermal/reflective)	Order no.: 0372-003
BACK marking (black/thermal/reflective)	Order no.: 0372-002
SLEEVE marking (black/thermal/reflective)	Order no.: 0372-001
VISOR marking (black/thermal/reflective)	Order no.: 0372-001

- The markings (numbers and letters) are applied at the factory using a thermal printing process. The exact labelling must therefore be available before the start of production.
- The markings are available in 2 sizes (please enquire).
- Standard colour: Black
- Other colours on request: silver reflective or signal yellow
- The markings are washable (see protective suit user manual) and therefore reusable.



Storage

Bag, Universal (turnout gear)

- Storage bag with one main compartment (with boot compartment) and one front compartment
- Convenient transport: ideal for turnout gear
- Separated main, boot and side compartments for hygiene
- Flexible: elastic cord on the lid
- Everything in its place: front pocket as organiser compartment

Specifications

- Dimensions (L x W x B): 420 x 460 x 300 mm
- Outer material: 600D polyester 2xPU coated, black
- Weight: approx. 1,000 g
- Colour: black/yellow

Order no.: 0191-012 (black/yellow)



Solid zips (yellow) with “TESIMAX” logo puller

Transparent Label pocket

CPS bag Basic (medium)

- Storage bag with a main compartment and a flat side pocket
- Convenient transport: ideal for all reusable CPSs
- Large main compartment for complete protective clothing
- Rugged: skids on underside
- Everything in its place: side pocket as organiser compartment

Specifications

- Internal dimensions of main compartment (L x W x H): 700 x 480 x 380 mm
- External dimensions (L x W x H): 720 x 500 x 400 mm
- Outer material: 600D polyester 2xPU coated, black
- Weight: approx. 2,000 g
- Colour: black/yellow

Order no.: 0191-013 (black/yellow)



25 mm fabric tape, yellow ~ HKS 3 & 25 mm reflective stripes

CPS trolley bag (XL)

- Storage bag with a main compartment and a flat side pocket
- Convenient transport: ideal for all reusable CPSs & accessories
- No heavy lifting: trolley casters for easy transport
- Everything fits: large main compartment for complete protective clothing
- Everything in its place: separate organiser compartment for small items

Specifications

- Internal dimensions of main compartment (L x W x H): 700 x 480 x 380 mm
- External dimensions (L x W x H): 900 x 500 x 400 mm
- Outer material: 600D polyester 2xPU coated, black
- Weight: approx. 2,900 g
- Colour: black/yellow

Order no.: 0191-014 (black/yellow)



Padding on the outer surface for stability

FOR OTHER TRANSPORT CONTAINERS PLEASE ENQUIRE:

- Aluminium/plastic boxes
- Splash- or waterproof
- Lightweight or rugged versions

Subject to technical changes without notice; product may deviate from illustrations.



Storage

Bag, Universal (turnout gear)

- Separated main, boot and side compartments for hygiene
- Flexible: elastic cord on the lid
- Everything in its place: front pocket with organiser compartment
- Dimensions (L x W x B): 41 x 42 x 30 cm
- Weight: approx. 1,100 g
- Volume: approx. 50 litres
- Fabric: 600D polyester
- Colour: black/yellow or red/black; please specify when ordering

Order no.: 0191-015



RAGBAG PRO – clothing bag

- Large main compartment for complete protective clothing
- Rugged: skids on underside, elastic cord on lid
- Comfortable: fully padded backpack carrying system
- Dimensions (L x W x B): 70 x 43 x 38 cm
- Weight: approx. 2,600 g
- Volume: approx. 90 litres
- Fabric: 600D polyester
- Colour: black/yellow or red/black; please specify when ordering

Order no.: 0191-016



TROLLEYBAG – clothing bag

- No heavy lifting: trolley casters for easy transport
- Everything fits: large main compartment for complete protective clothing
- Everything in its place: separate organiser compartment for small items
- Dimensions (L x W x B): 79 x 37 x 35 cm
- Weight: approx. 2950 g
- Volume: approx. 80 litres
- Fabric: 600D polyester
- Colour: black/yellow or red/black; please specify when ordering

Order no.: 0191-017



Subject to technical changes without notice; product may deviate from illustrations.



Storage

GYM BAG

- Fabric: 100 % polyester
- Polyester 600 D
- With chord for wearing over the shoulder
- JAKO logo in main colour
- Size 47 x 38 cm (L x W)
- Colour: black

Order no.: 4000-822



CHALLENGE BACKPACK - for a change of clothing (CPS coveralls) and disinfectant wipes on site.

- Fabric: 100 % polyester
- Polyester 600 D
- 2-way zip
- Large main compartment
- Small inner pocket with zip
- Padded carrying straps
- Separate, 10 cm high bottom compartment
- JAKO logo in contrast colour
- Size: approx. 30 litres
- Colours: Black or marine

Order no.: 4000-820



SPORTS BAG WITH SIDE WET ITEM POCKET

- Fabric: 100 % polyester
- Polyester 600 D
- Spacious main compartment with all-round 2-way zip
- Zipped compartment on the left side
- Deep wet items pocket with zip on the right side
- Small inner pocket with zip in the main compartment
- Size-adjustable, detachable shoulder strap
- JAKO logo in main colour
- Size: approx. 60 litres
- Colour: black

Order no.: 4000-821



Subject to technical changes without notice; product may deviate from illustrations.

SPECIAL
ACCESSORIES

ANGEL
SENSOR SYSTEMS

ANGEL SENSOR SYSTEMS



SAFETY & TECHNOLOGY

ANGEL SENSOR SYSTEMS ORDERING DATA OVERVIEW

ANGEL LIGHT (LED sensor light system – complete for VS 5, VSF 5, VS 20, VSF 20 and VSF 21)
ANGEL SIGNAL (LED WARNING SIGNAL with F-AU 1 SYSTEM for VS 20, VSF 20)

Order no.: 0181-022
Order no.: 0181-033

ANGEL CONTROL/SIGNAL: TESIMAX sensor housing in CPS (pressure/temperature) with Bluetooth
for VS 5, VSF 5, VS 20, VSF 20 and VSF 21

Order no.: 0181-050

ANGEL CONTROL/SIGNAL: TESIMAX holder cuff
ANGEL CONTROL/SIGNAL: TESIMAX control and visualisation system holder of your choice
ANGEL CONTROL/SIGNAL: TESIMAX app (for connecting sensor unit with control and visualisation system holder)
ANGEL CONTROL/SIGNAL: TESIMAX COMPLETE STARTER KIT for VS 5, VSF 5, VS 20, VSF 20
and VSF 21 protective suits

Order no.: 0181-051
Order no.: 0181-053
Order no.: 0181-052
Order no.: 0181-055

ANGEL EYE (CPS complete/starter camera system: Versions A, B, C and D)
ANGEL EYE (CPS camera set without transmitter/receiver)
ANGEL EYE OPTION: Transmitter/receiver unit incl. rechargeable batteries and inside holder
ANGEL EYE OPTION: Tablet for image playback (please enquire)

Order no.: 0181-042
Order no.: 0181-044
Order no.: 0181-045
Order no.: 0181-046

ANGEL SENSOR CENTRAL BATTERY

- The battery pack can be used for all versions.
- Required cables and plugs are (exclusively) integrated into the protective suit ex works.

Order no.: 0181-031

ANGEL EYE® SYSTEM
(VS 5, VSF 5, VS 20, VSF 20 and VSF 21 series)

With this optional system, you can record and transmit operations in real time during CPS deployment or in training. You can get the required equipment (camera, smartphone etc.) directly from us. And we can also set it up for an additional fee on request.

OBSERVE:
The camera only works in combination with the TESIMAX transmitter/receiver included in the complete/system/starter package (including required batteries).

The camera system integrates with the TESIMAX protective suit.
Order no.: 0181-042 A/B/C:

A: Lipstick cam in conjunction with helmet adaptation and carrying harness (type 3 braces)for transmitter/battery unit (VS 5, VSF 5, VS 20 VSF 20 and VSF 21), including manufacturer's hazardous zone approval.



Illustrated version: 0180-042 A

ANGEL LIGHT® SYSTEM
(VS 20, VSF 20 series)

The ANGEL LIGHT® SENSOR SYSTEM allows safe working even at night or in dark rooms, tunnels, underground, etc. and ensures that you have your hands free for your task. It is the world's only sensor-controlled LED suit system and is patented by TESIMAX.

- ANGEL LIGHT LED lighting system **Order no.: 0181-022**
Full set
- ANGEL LIGHT LED battery pack (not charged) **Order no.: 0181-031**
- ANGEL LIGHT Battery charger **Order no.: 0181-032**

As of 2021, ANGEL LIGHT, CONTROL and SIGNAL have a central re-chargeable battery)





SAFETY & TECHNOLOGY

ANGEL CONTROL SENSOR SYSTEM (T.AC) for VS 5, VSF 5, VS 20, VSF 20 and VSF 21 series

System components 1–4:

No. 1: Protective suit SENSOR HOUSING UNIT (BT) – internal

No. 2: Mobile holder for electronic control and visualisation system (T.AC) app

No. 3: Electronic control and visualisation system

No. 4: TESIMAX ANGEL CONTROL app

In general, the system is optimized for TESIMAX VS 20 and VSF 20 suits but can also be used in a light version for VS 5, VSF 5 and VSF 21 (please enquire).

No. 1: CPS SENSOR HOUSING UNIT (BT)

The newly developed ANGEL CONTROL SENSOR SYSTEM is an internal, splash-proof CPS sensor system in a housing with BT connectivity to the T.AC app. It supports the wearer's perception in action through various sensors inside and on the outside of the suit.

- The sensor measures the pressure and temperature inside the suit
 - with thermal sensors (internal temperature)
 - with pressure sensors (envelope leaktightness and exhalation valve function test)
 - For further sensors please enquire (the system is modular and expandable)
- The data is automatically transmitted to the T.AC app of the electronic control and visualisation system via Bluetooth
- Suits are numbered
- Countdown to deployment: If the sensor readings fall outside the tolerance levels, an LED warns the suit wearer.

- The system can be easily integrated in VS 20/VSF 20 suits and is easy to remove.

- **The system has the following properties:** chemical resistant, gas-, liquid-, particle- and aerosol-tight, washable, decontaminable, suitable for use in hazardous areas.

T.AC SENSOR HOUSING UNIT (BT): Order no.: 0181-050

No. 2: Mobile holder

The removable (chemical resistant and decontaminable) protective suit holder is optimised for the tested, modular electronic T.AC control and visualisation system. The mobile holder is a basic requirement for the ANGEL CONTROL system in conjunction with the T.AC sensor unit and the T.AC app.

T.AC MOBILE HOLDER: Order no.: 0181-051

No. 3: Electronic control and visualisation system (Android version 5.0 or higher; iOS is not supported)

There are 3 different T.AC control and visualisation systems, each selected, tested and optimized for mobile holder (No. 1):

- Rugged, waterproof system; append suffix "tough" to order number
- Rugged, waterproof system with advanced features such as thermal imaging camera, ambient air sensor, etc.; append suffix "tough & sense" to order number
- Rugged, waterproof system for hazardous areas; append suffix "ex" to order number

T.AC SMARTPHONE: Order no.: 0181-053 + suffix (see above)

No. 4: TESIMAX ANGEL CONTROL app

- Software platform for camera and sensor data wireless transmission (BT/WiFi).
- This app starts the setup for the camera and sensor unit.

T. AC App: Order no.: 0181-051

• ANGEL SENSOR SYSTEMS BATTERY PACK

The central, internal battery pack supplies all TESIMAX SENSOR systems:

- ANGEL LIGHT, ANGEL SIGNAL (only in combination with F-AU 1–3), ANGEL HEART

Order no.: 0181-031

**SPECIAL
ACCESSORIES
RESPIRATORY
PROTECTION
SYSTEMS
COMPRESSED
AIR**



CPS forced ventilation system F-AU

F-AU 1-10 safety standards (EN 943)
Air supply source: <ul style="list-style-type: none">• Must deliver > 300 l/min at 5.5 bars• Recommended: Constant 800 l/min at 9 bars to operate up to four TESIMAX suits with F-AU 1–8 (may differ according to choice of F-AU).
Air pressure: <ul style="list-style-type: none">• Max. pressure inside CPS: $x < 400$ Pa (4 mbar)• CPS exhalation valves open at: $x > 200$ Pa (2 mbar)
Air supply: <ul style="list-style-type: none">• Recommended: To EN 270:1994/to CPS manufacturer's guidelines
Air quality: <ul style="list-style-type: none">• Recommended: To EN 12021 ("breathing air")
Air supply: <ul style="list-style-type: none">• Pull-out strength of unit > 1000 N• Pull-out strength of unit and hose > 250 N
No impairment through internal cooling
Warning and measuring device must be fitted <ul style="list-style-type: none">• Measurement of minimum air volume flow rate according to manufacturer's instructions• Audible/visual (e.g. ANGEL SIGNAL®)
Coupling on suit (interface) must be able to rotate and be self-locking <ul style="list-style-type: none">• F-AU 1/3 with flat-face technology; F-AU 2/4 with simple lock, F-AU 1-4: 360°
<ul style="list-style-type: none">• Harness for stabilizing suit on body
Tested breathing air hoses <ul style="list-style-type: none">• Kink-resistant hose unions (steel spiral)
Cleaning and disinfection <ul style="list-style-type: none">• Connections must be easily and safely disconnectable
Compressed air – TESIMAX tip:
1. There are systems that are independent of ambient air (e.g. filters of the VSF 21 series, powered filters and head sections and compressed air systems that are independent of ambient air (e.g. closed-circuit air lines, SCBA and cylinders in combination with our mobile cylinder carts and compressors and CPS to EN 943 Parts 1 and 2 (ET), 1a, b and c.
2. Always observe the required air pressure (intake and outlet) according to manufacturers' guidelines (verified safety)
F-AU 1/2/4: Recommended guaranteed pressure $x > 6$ bar F-AU 3: Recommended guaranteed pressure $2 < x < 3$ bar
3. How long are operations likely to take? See also the applicable technical regulations, such as BGR GUVR 190 (in Germany) and manufacturer's guidelines

Fresh air during operations



The TESIMAX F-AU series for CPS ...
<ul style="list-style-type: none">• provides breathing air that is much cleaner than environmental air• enhances your wellbeing with efficient respiratory protection systems• boosts your performance through effective breathing apparatus• protects your health at all times to allow you to breathe easy
and therefore ...
<ul style="list-style-type: none">• guarantees compliance with the strictest European standards• provides the perfect respiratory protection for use with our PPE• is ideal for environments in which a sufficient oxygen content in the air cannot be guaranteed
The products ...
<ul style="list-style-type: none">• offer maximum mobility• are used by many fire services and in industry• have a proven track record



Ordering data and spare-ordering list

Designation	Order number
UPGRADE FOR EXTERNAL AIR SUPPLY, BREATHING AIR & VENTILATION (VS 5, type 1a) - F-AU 1: External air supply with visual warning indicator, outside (flat-face) Order no.: 0250-021 A Alternative: Also available with Euro sealing nipple (not flat-face)	Order no.: 0250-021 B
UPGRADE FOR EXTERNAL AIR SUPPLY, BREATHING AIR & VENTILATION (VS 20, type 1a) - F-AU 1: Complete system: External air supply F-AU 1 with ANGEL SIGNAL® (flat-face) Alternative: Also available with Euro sealing nipple (not flat-face)	Order no.: 0250-020 A Order no.: 0250-020 B
UPGRADE FOR EXTERNAL AIR SUPPLY, BREATHING AIR (VS 5, VS 20, type 1a) - F-AU 2: DFT (TESIMAX feedthrough) with forced ventilation option, without internal ventilation (with flat-face) - F-AU 2 alternative: DFT (TESIMAX feedthrough) with forced ventilation option, without internal ventilation (no flat-face) - F-AU 2 alternative: Complete system – DFT with internal/forced ventilation LIGHT (with flat-face) - F-AU 2 alternative: Complete system – DFT with internal ventilation, also available with Euro sealing nipple (not flat-face)	Order no.: 0250-012 A Order no.: 0250-012 B Order no.: 0250-012 C Order no.: 0250-012 D
UPGRADE FOR EXTERNAL AIR SUPPLY, BREATHING AIR & VENTILATION (VSF 20: Type 1c) - F-AU 3: Complete system – external air supply with ANGEL SIGNAL® - F-AU 3: Complete system – external air supply with visual warning indicator, external	Order no.: 0250-013 Order no.: 0250-017
UPGRADE FOR PURE VENTILATION (VS 5, VS 20: Type 1a, GS 3/GS 3M: Type 1b) - F-AU 4 A: Complete system – forced air supply for ventilation with control valve, stepless (external Euro sealing nipple long CLOSE UP) No flat-face technology, no flat-face adapter necessary - F-AU 4 B with additional short, external Euro coupling (external breathing air source), - F-AU 4 -A: Complete system – forced air supply for ventilation with setting 0/2/30/100 l/min. The supply should be ensured via an external breathing air source (external sealing nipple, long CLOSE UP Euro nipple) No flat-face technology, no flat-face adapter necessary - F-AU 4 D: with additional CLOSE UP Euro nipple inside (second connection SCBA/only VS 5/VS 20 series), No flat-face technology, no flat-face adapter necessary - F-AU 4 E: Positive pressure airline apparatus type A with pressure gauge, flat-face nipple (outside) and 30 cm hose with flat-face nipple inside - F-AU 4 F: Positive pressure airline apparatus type A with pressure gauge, Euro sealing nipple (outside) and 30 cm hose with Euro nipple inside - F-AU 4 G – Internal ventilation 0-5-30-100 l/min with control valve, 1x Euro sealing nipple (outside): and 1x integrated breathing air hose (approx. 85 cm), Euro coupling (inside): f. VS 5, VS 20	Order no.: 0250-022 A Order no.: 0250-022 B Order no.: 0250-018 C Order no.: 0250-018 D Order no. 0250-019 E Order no. 0250-019 F Order no.: 0250-018 G
ACCESSORIES for the F-AU series - F-AU 1: Accessory – ANGEL SIGNAL® (set of batteries) - F-AU 1: Accessory – ANGEL SIGNAL® (forced air status indication LED) - F-AU 1-4: Accessory – flat-face to Euro coupling adapter - F-AU 1 MA: Accessory – Quick decon coupling - F-AU 1/3: Accessory – Strain-relief belt, inside - F-AU 1/3: Accessory – Ventilation hoses for internal ventilation with end silencer (complete installation kit)	Order no.: 0181-035 Order no.: 0181-033 Order no.: 0250-023 Order no.: 0250-016 Order no.: 0250-014 Order no.: 0250-029
Splash guard covers for the F-AU series (optional): - F-AU Outer protective cover, made fully of suit fabric - F-AU sealing nipple for F-AU outside, black plastic - F-AU sealing nipple for F-AU outside, stainless steel	Order no.: 0250-033 Order no.: 0250-100 Order no.: 0250-101
Adapters - Adapter – various connections - Double plug-in nipple (Euro safety nipple) - One nipple is colour-coded (nipple with check valve) - T-connector air distribution with 2 Euro sealing nipples and 1 Euro coupling	Order no.: 0250-024 order no.: 0250-025
UPGRADE FOR COMPRESSED AIR - F-AU 5: Compressed air control system with cooling (clip-on adapter for F-AU 1-4 – VORTEX) - F-AU 6: Compressed air control system with heating (clip-on adapter for F-AU 1-4 – VORTEX) - F-AU 10: TESIMAX Automatic changeover, e.g. for internal ventilation/forced ventilation (changeover) for VS 5 CHEMBA/cylinder cart - F-AU 11: As alternative to F-AU 10: Positive pressure airline apparatus from various manufacturers with warning device	Order no.: 0250-038 Order no.: 0250-039 Order no. 0250-040 Order no.: 0250-041

CPS forced ventilation system F-AU

Forced air supply with automatic changeover model F-AU 1 external/SCBA

Note:
Only for wearers of TESIMAX totally encapsulated suits, for example to EN 943-1: Type 1a and EN 943-2: Type 1a-ET

Description:
The forced air supply apparatus with automatic changeover valve is typically used wherever the wearer has a long way to and from the incident location.

The use of a forced air supply (at a pressure of 6 to 8 bars) ensures that the SCBA cylinder air remains at its maximum volume until the fire-fighter reaches the incident location. When the external air supply hose is disconnected, the changeover valve automatically switches over to cylinder air from the wearer's SCBA, This leaves the firefighter fully mobile and unhindered by the external air hose.

On completion of the operation, the external hose is reconnected for the return journey. Should the SCBA's cylinder air be fully depleted, the external supply provides enough time for a preliminary decontamination before the protective suit is unzipped. During forced air operation, the suit is flushed with about 60 to 80 litres of air per minute. Heat and moisture escape through four pressure relief valves to ensure a comfortable climate within the suit.



Example illustration

TESIMAX scheme:
Function and testing
Breathing air supply
with auto changeover

Coupling for connecting the mouthpiece

Connection for medium pressure line to the SCBA

Air inlet
Rotates through 360°
Stainless steel

Connection/outlet for the integrated ventilation hoses

Pressure Flow Master

The CleanAIR® Pressure/Pressure Flow Master systems create a constant airflow in hoods and masks and are therefore suitable for long-term work in the harshest industrial environments. The regulator on the belt unit can adjust the amount of air coming from the central compressed air distribution system or a compressor and keeps it at a constant level regardless of changes in inlet pressure.

FUNCTIONS AND BENEFITS

- Low weight
- Energy-saving operation
- High airflow
- Low pressure warning (Pressure Flow Master)
- Optional air filtration with CleanAIR® Conditioner
- Compatible with a wide range of CleanAIR® head sections

APPLICATIONS

The system is suitable for heavy-duty industrial environments, laboratories and the chemical industry.

Certification

EN 14594 Class 3 B
EN 14594 Class 2 A

TECHNICAL DATA

- Air flow 160–250 l/min
- Weight: 280 g
- Inlet connection compatible with RECTUS 25, 26 and CEJN 320
- Outlet connector CA40×1/7"

PRODUCT VARIANTS

Product description	Art. no.
CleanAIR® Pressure with accessories	63 00 00
CleanAIR® Flow Master with accessories	67 00 00
CleanAIR® Pressure Conditioner with mount	61 00 50



SELECTION OF SUITABLE RESPIRATORY PROTECTION (based on determined nominal protection factor)

1. Determine the concentration of the hazardous substance at the workplace.
2. Determine the assigned workplace protection factor (workplace exposure limits, WEL). For the list of common contaminants and relevant concentration limits, see our Filter Guide (Source: EH40/2005 Workplace Exposure Limits) or contact local authorities. workplace exposure limits are occupation-specific averages (concentrations) of a pollutant in the air over a reference period without significant adverse health effects on personnel exposed to the substance. The limits can be set for two reference periods: as a time-weighted average (TWA) over eight hours, or as a short-term exposure limit (STEL) within a 15 minute timespan. Time-weighted average (TWA) – 8 hours (long term)

The TWA limits are specified to prevent effects on health from long-term or cumulative exposures. STEL (short-term exposure limit) – 15 minutes (short term) The STEL are designed to prevent effects on health from short-term exposures (e.g. eye irritation that occurs after a few minutes). If a substance is not on the workplace exposure limit (WEL) list, it does not mean that it is safe. Exposure to these substances must be limited to a level to which workers can be exposed on a daily basis without adverse health effects.

3. Determine the minimum required protection factor of the respiratory protective equipment.

Example: Filter breathing apparatus with a class TH3 hood according to EN 12941 has a maximum inward leakage of 0.2 %. Its NPF is therefore 100 (%) / 0.2 (%) = 500.

NOMINAL PROTECTION FACTOR (NPF)

The nominal protection factor is a guideline value for respiratory protective equipment calculated on the basis of laboratory measurements. It represents the calculated maximum required respiratory protection. It is calculated by dividing 100 by the maximum total inward leakage as specified in the applicable standard.

MAXIMUM HAZARDOUS SUBSTANCE CONCENTRATION FOR A SPECIFIC BREATHING APPARATUS?

The highest permissible concentration can be determined by multiplying the nominal protection factor (as given in the NPF table) and the occupational exposure limit.

CAUTION!

If the hazardous substance is present in the form of both particles and gas, a nominal protection factor must be established for both the particles and the gas and the higher protection factor must be applied.



**SPECIAL
ACCESSORIES
RESPIRATORY
PROTECTION
SYSTEMS
POWERED
SYSTEMS**



UNIMASK® PROTECTIVE HOODS

Enhance your protection by simply clipping the protective hood over your UniMask®.
Made of lightweight, microporous polypropylene or washable antistatic fabric. Available in two lengths.

Product description	Art. no.
UniMask® hood, short	72 03 60
UniMask® hood, long	72 03 61
UniMask® hood, long, washable	72 03 62

COMPATIBLE WITH SAFETY HELMETS

UniMask can be used with a wide range of industrial safety helmets to provide handy combined head, face and respiratory protection.



FACE SEAL MATERIAL AND COLOUR OPTIONS

UniMask® is available with two types of face seal:

- Comfortable 3D textile
- Easy-care neoprene

Product description	Art. no.
UniMask® face seal, grey	72 03 50.01
UniMask® face seal, blue	72 03 50.02
UniMask® face seal, orange	72 03 50.03
UniMask® face seal, red	72 03 50.04
UniMask® face seal, neoprene	72 03 50.08

Art. no.

Chemical 2F

Compact and lightweight yet powerful

The most versatile and durable breathing apparatus on the market. The compact, lightweight Chemical 2F powered air-purifying respirator is exceptionally robust, chemical resistant and meets the requirements of a high protection class. Its clever design with a smooth surface makes it easy to decontaminate by showering or submersion. The unique closing system prevents accidental contamination when the filters are changed. The intelligent airflow control ensures a constant airflow even if the filters are clogged or the battery level is low. Audible and visual alarms warn when the battery needs recharging or a filter needs replacing. Thanks to the optional high-performance battery, the air flow can be adjusted between 120 and 235 l/ min throughout the shift.

FUNCTIONS AND BENEFITS

- Compact design and low weight
- Compatible with a hood, mask or ventilated protective suit
- High mechanical and chemical resistance
- Increased ingress protection allows decontamination by shower or even full immersion (IP64/IP65/IP68)
- The full-colour display clearly shows all the relevant information – filter clogging, battery charge, airflow
- The Flow Control system maintains constant airflow regardless of the level of filter clogging or battery charge.
- Operation time up to 16 hours with Heavy Duty battery, or up to 10 hours with standard battery
- Short battery recharging time < 3 hours (standard battery)
- Audiovisual alarm
- Multilingual user interface
- Back harness available for increased comfort

APPLICATIONS

- Highly polluted industrial environments including chemical and pharmaceutical industry
- Remediation operations, laboratories
- First responders and emergency teams
- Biological protection

PRODUCT VARIANTS

Product description	Art. no.
CleanAIR® Chemical 2F, incl. compression belt, lithium-ion battery, charger	51 00 00FCA

CleanAIR® Chemical 2F, incl. decontaminable belt, lithium ion battery, charger	51 00 00FDA
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The unique closing system prevents accidental contamination when the filters are changed.



HARNESS FOR MORE BACK SUPPORT AND HIGHER COMFORT

Product description
Decontaminable belt, PVC – 2F/3F
Decontaminable harness, PVC – 2F/3F

Art. no.
51 00 51
51 00 52

CA-1

Ultralight hood with superior breathing protection

This short light hood is an optimal solution for respiratory protection and face protection in dusty and light chemical environments where no further mechanical protection is required. In combination with PAPR or airline systems CleanAIR® it reaches the highest level of respiratory protection. It provides a perfect fit for various head types due to adjustable headgear and comfortable elastic rubber band. The distance of the visor can be set individually, as well as the perimeter of the headgear. The light nylon fabric and spacy cut makes it pleasant to wear even for long time work. The wide panoramic visor with antifog coating ensures undisturbed view and provides basic mechanical protection of the eyes.

TECHNICAL DATA

Weight: 180 g
Material: Hood – nylon
Visor – cellulose propionate
Protection factor (NPF): 500
Hose connection: QuickLOCK™
Certification: EN 12941 TH3 to EN 14594 3A, EN 166 1 S F

FEATURES AND BENEFITS

- Superior breathing protection
- Wide visor with antifog coating
- Individual headgear settings – adjustable perimeter and distance from the visor
- Pleasant to wear due to the spacy cut and light weight durable material
- Basic mechanical eye protection to EN 166
- Practical reflective tab on the top

APPLICATIONS

This hood is suitable for use in dusty and lightly chemically contaminated environments in the pharmaceutical and chemical industry.

Short hood CA-1, orange Order no.: 0270-511 CA-1 orange
Short hood CA-1, blue Order no.: 0270-511 CA-1 blue



CA-2

Ultralight long hood with superior breathing protection

This long light hood ensures respiratory protection and protection of the head, neck and shoulders in dusty environments where no further mechanical protection is required. In combination with PAPR or airline systems CleanAIR® it reaches the highest level of respiratory protection. It provides a perfect fit for various head types due to adjustable headgear and comfortable elastic rubber band. The distance of the visor can be set individually, as well as the perimeter of the headgear. The light nylon fabric and spacy cut makes it pleasant to wear even for long time work. The wide panoramic visor with antifog coating ensures undisturbed view and provides basic mechanical protection of the eyes.

TECHNICAL DATA

Weight: 240 g
Material: Hood – nylon
Visor – cellulose propionate
Protection factor (NPF): 500
Hose connection: QuickLOCK™
Certification: EN 12941 TH3 to EN 14594 3A, EN 166 1 S F

FEATURES AND BENEFITS

- Superior breathing protection
- Wide visor with antifog coating
- Individual headgear settings – adjustable perimeter and distance from the visor
- Pleasant to wear due to the spacy cut and light weight durable material
- Basic mechanical eye protection to EN 166
- Practical reflective tab on the top
- Head, neck and shoulder protection

APPLICATIONS

This hood can be used in dusty or light chemical environments. It is suitable for spraying and painting work as well as for use in laboratories and the pharmaceutical industry.

Long hood CA-2, orange Order no.: 0270-511 CA-2 orange
Long hood CA-2, blue Order no.: 0270-511 CA-2 blue



CA-10

Superior breathing protection with high chemical resistance

This chemical resistant hood ensures respiratory protection and protection of the head, neck and shoulders in the most demanding chemical environments. In combination with PAPR or airline systems CleanAIR® it reaches the highest level of respiratory protection.

The hood has an extended service life and can be decontaminated because of the light laminated fabric with taped seams. It is still very light and comfortable thanks to the inner antiseptic fabric which absorbs sweat and provides an additional seal. It provides a perfect fit for various head types due to adjustable headgear and comfortable elastic rubber band. The distance of the visor can be set individually, as well as the perimeter of the headgear. The distance of the panoramic antifog visor and the headgear perimeter can be individually set.

TECHNICAL DATA

Weight: 220 g
Material: Hood – nylon
Visor – cellulose propionate
Protection factor (NPF): 500
Hose connection: QuickLOCK™
Certification: EN 12941 TH3 to EN 14594 3A, EN 166 1 S F

FEATURES AND BENEFITS

- Superior breathing protection
- Long life span, decontaminable
- Antiseptic inner fabric that absorbs sweat and provides extra sealing
- Wide visor with antifog coating
- Individual headgear settings – adjustable perimeter and distance from the visor
- Pleasant to wear due to the spacy cut and light weight durable material
- Basic mechanical eye protection to EN 166
- Practical reflective tab on the top

APPLICATIONS

The hood can be used in all environments demanding high durability and chemical resistance. It is suitable for spraying and painting operations as well as for use in laboratories and pharmaceutical or chemical industries.

Long hood CA-10, chemical resistant
Order no.: 0270-511 CA 10



UniMask

Light universal face shield providing the highest comfort and safety

This universal, light-weight face and respiratory mask offers the highest level of breathing protection with enhanced inner airflow regulation and a visor with excellent optical and mechanical features make this universal light face shield a true leader of its class. UniMask is light (just 380 g) and offers excellent user comfort. The inner airflow regulation allows the user to set direction and intensity of the air to be delivered to the face or directly into the breathing zone. Two variants – with soft textile and with a neoprene face seal – are available. The visor provides clear and undisturbed view of the highest quality (class 1 according to EN 166), high mechanical resistance and antifog coating. UniMask is easy to use and all spare parts are quickly and easily removable which enables fast and simple maintenance.

TECHNICAL DATA

Weight: 380 g
Material: Frame – polyamide
Face seal – neoprene or 3D polyamide knit
Visor – polycarbonate
Protection factor (NPF): 500
Hose connection: QuickLOCK™
Certification: EN 12941 TH3 to EN 14594 3B, EN 166 1 FT B K N

FEATURES AND BENEFITS

- The highest class of breathing protection TH3
- Enhanced inner airflow regulation
- Light weight – only 380 g
- Excellent optical quality – EN 166 class 1
- High mechanical resistance of the visor
- Antifog coating
- Safety helmet compatible
- Neoprene or textile face seal option
- Easy to use and adjust
- Fast and simple maintenance

APPLICATIONS

The UniMask is suitable for spraying and painting in environments with low chemical resistance requirements, such as the chemical and pharmaceutical industries and laboratories.

Face shield UniMask, grey	Order no.: 0270-510 grey
Face shield UniMask, blue	Order no.: 0270-510 blue
Face shield UniMask, orange	Order no.: 0270-510 orange
Face shield UniMask, red	Order no.: 0270-510 red
Face shield UniMask, neoprene	Order no.: 0270-510 neoprene



A new system with 5-point head harness is available from 2024, for better wearing comfort.



INNER AIRFLOW REGULATION

QUICKLY EXCHANGEABLE FACE SEAL WITH EASY MAINTENANCE

The face seal ensures secure and comfortable fit for the wearer. Thanks to a fast click-in system the face seal can be easily and quickly removed and re-attached. The face seals are machine washable and can be dried in a tumble drier.

QUICK AND EASY VISOR REPLACEMENT

Should the visor have to be replaced or separately cleaned, it can be easily removed and refitted to the hood using two simple locking knobs.

TORIC VISOR WITH AN EXCELLENT OPTICAL QUALITY

UniMask is the only universal faceshield of its class on the market with a toric visor, which offers the best class of optical quality (EN 166 class 1). The visor offers an outstanding field of vision. Its antifog, anti-scratch coating increases the mechanical durability and extends the life time of the visors significantly. It provides protection against high-speed particles with medium energy.

SAFETY HELMET COMPATIBLE

UniMask can be used with a wide range of industrial safety helmets to provide handy combined head, face and respiratory protection.



PRESSURE HOSES

Standard compressed air hose for CA Pressure – 10 m
Order no.: 61 00 30

Standard compressed air hose for CA Pressure – 25 m
61 00 38

Standard compressed air hose for CA Pressure – 50 m
61 00 39

Antistatic compressed air hose for CA Pressure – 10 m
61 00 31

Antistatic compressed air hose for CA Pressure – 25 m
61 00 33

Antistatic compressed air hose for CA Pressure – 50 m
61 00 34

Spiral compressed air hose for CA Pressure – 10 m
61 00 4



HOSES

Lightweight flexible hoses with QuickLOCK™ connection system for secure connection of the complete CleanAIR® head sections except for the masks.

Lightweight flexible hose (QuickLOCK™ – CA40x1/7")
71 00 60

Lightweight flexible hose (QuickLOCK™ – CA40x1/7" long)
71 00 60L

Rubber hose (QuickLOCK™ – CA40x1/7")
71 00 86

Rubber hose (QuickLOCK™ – Ca40x1/7" long)
71 00 86L

Hoses only compatible with masks:
Lightweight flexible hose CA40x1/ 7"
70 00 60

Rubber hose CA40x1/7"
70 00 86CA

Rubber hose Ca40x1/7" long
70 00 86L

Rubber hose Ca40x1/7" 90°
70 00 86R

Rubber hose Ca40x1/7" 90° long
70 00 86RL



Filters



Product code: 50 01 57/3
Type A2P3



Product code: 50 03 57/3
Type A1P3



Product code: 50 01 67/3
Type A2B2P3



Product code: 50 01 66/3
Type A2B2E2K2HgP3

Accessories

Comfort belt Super (Basic, 2F)
71 00 92

Comfort belt Standard (Basic/Pressure)
71 00 93

Comfort belt CA AerGO®
30 00 92

Comfort belt 3F
52 00 43.1

Leather comfort belt Super (Basic, 2F)
72 00 92

Leather comfort belt CA Basic
72 00 93

Leather belt CA AerGO®
32 00 92

Padded comfort harness 2F/3F
52 00 44.1

Belt extender – extend your belt by up to 30 cm
71 00 99*



Teamwear & functional wear

- Tested and recommended for TESIMAX chemical protective suits
- Also as corporate and sports wear



Teamwear overview

Firefighter sports and functional wear

Quality, availability and sustainability:

- First-class, robust workmanship -> each garment available in firefighter teamwear or workwear quality (tested by the Hohenstein Institute).
- Sporty cut. Superior wearing comfort.
- Best availability through logistics centre stocking at least 95% of articles with over 15,000 pallet bays, in cooperation with one of Europe's largest high-bay warehouses -> optimal supply of goods guaranteed.
- Long article product life.
- Sustainability through the use of organic cotton and natural fibres.

Optionally:

- Organic Line:
 - Organic cotton (sustainable)
 - Pre-shrunk, dimensionally stable, colourfast
 - Very long durability due to reinforced seams and combed, ring-spun cotton fibres
- Industry Line:
 - Functional cotton combined with functional polyester
 - Available in 8 colours
 - Washable at 60 °C, suitable for industrial laundering according to EN 15797.

All firefighter functional wear is available as standard with "FEUERWEHR" in silver lettering.

Other possible styles and finishes:

https://team.jako.de/de/team/feuerwehr_tesimax

Individual finishes can be implemented directly by TESIMAX on request.

Interested?

Contact TESIMAX for your individual offer.

Top accessories (personal protective equipment) available on request.

Contact TESIMAX for an attractive special offer.



Teamwear overview

Firefighter sports and functional wear

Quality, availability and sustainability:

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https://team.jako.de/de/team/feuerwehr_tesimax

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Interested?

Contact TESIMAX for your individual offer.



FUNCTIONAL WEAR for protective suits

Phase-change undersuit

The phase-change thermal undersuit (with Outlast® technology) has been developed specially as insulating underclothing for the TESIMAX chemical protective suits.

Not too hot, not too cold: just right

Temperature-regulating Outlast® materials provide proactive climate management for increased comfort.

The sleeves are seamed and the trouser legs have elasticated foot loops. With its front zip, the suit is easy to put on and take off. Banded collar in neck area and shoulder, elbow and knee protection.

Tested in outer space – now here on earth

Outlast® is the only phase-change material (PCM) that has been awarded the Certified Space Technology™ seal. This technology was originally developed for NASA and is continually tested for safety and efficiency in a wide range of applications in renowned brands.

Colour: ☐ black
Size: M, L and XL available
(specify size when ordering)

Order no.: 0650-229



THERMO-FLEECE undersuit

The TESIMAX thermo undersuit has been developed mainly as insulating underwear for the SILVERFLASH® protective suit with para-aramid.

Made from a flame retardant fleece fabric with a high LOI (limited oxygen index) this overall is highly flame-retardant and features additional fabric reinforcement in the knee, elbow and shoulder areas.

The fleece material ensures wearing comfort and provides maximum thermal insulation. The sleeves are seamed and the trouser legs have elasticated foot loops. With its front zip, the suit is easy to put on and take off.

Tested to EN ISO 11612:2008.

Colour: ☒ navy blue
Size: M, L and XL available
(specify size when ordering)

Order no.: 0650-228



FUNCTIONAL WEAR for protective suits

MAX HYGIENE FUNCTIONAL UNDERSUIT

The MAX undersuit provides chemical protection and has natural antibacterial properties.
(OEKO-Tex Standard 100, elastic, anti-allergen)

Features:

- Integrated zip
- Thumb loop
- Sizes: S to XXXL
- Colour: ☐ black

Please refer to the washing and care information on the product label.

Order no.: 0650-233

FLAME-RETARDANT MAX FR UNDERSUIT

VERSION

- Pocket fasteners/flaps without exposed press studs or metal parts
- High collar with velcro fastener
- Sewn on hood with drawstring
- Concealed press stud placket (no zip)
- OEKO-TEX Standard 100 Class II for direct skin contact
- Approval: Type 6 – Chemical protection according to EN 13034 as well as EN 11612/EN 13688

EQUIPMENT

Flame retardant undersuit as opaque workwear and for sweat wicking under the chemical protective suit.

Properties

- CE approval
- Inherently flame retardant according to EN 11612
- Antistatic and dissipative according to EN 1149
- Arc protection according to IEC 61482-2 APC1
- Abrasion resistance to EN ISO 12947-2, 12 kPa >70,000 tours
- Tear propagation strength to EN ISO 13937-2, warp and weft >60 N
- Tear resistance to EN ISO 13934-1, warp and weft >1200 N
- Weight: approx. 260 g/m²

ORDERING DATA

Sizes: S to XXL
Colour: ☒ navy blue

Please refer to the washing and care information on the product label.

Order no.: 0650-240



Cooling vest

Cooling vest description

THE IMPORTANCE OF REGENERATION

The issue of regeneration is of great importance in firefighting operations. Under the sometimes extreme working conditions, such as when using CPS, it is important to regenerate quickly and completely. This is all the more important as the recommended regeneration times are often not possible to due staff shortages.

A PCS cooling suit offers a simple, fast and effective means of regeneration that can be used any time, anywhere without complex logistics.

INSPIRED BY NATURE

The product reacts similarly to the human body, which regulates its temperature through the cooling effect of sweat evaporating on the skin. The high-tech fleece can be quickly charged with water which it stores and releases through evaporation to keep you cool.

You also remain dry and save energy, as the products “sweat” for you. This enhances wellbeing and leaves you with more energy and therefore greater effectiveness in your task. It also protects your health under hot working conditions, optimizes your energy household and allows you to be more efficient.

EASY HANDLING

- Charging with approx. 0.7 to 1 litre of cold water (from tap, washbasin or shower) takes just 5 to 10 seconds.
- Squeeze gently and roll in a towel
- Cooling can begin
- The cooling effect lasts up to 20 hours

Order no.: 0650-230
Ask us about further products.

PERSONAL COOLING SYSTEM

- Better performance through less heat
- Fewer health risks
- Optimal regeneration during breaks and after work



Flame retardant underwear

Devold® Safe
FLAME RETARDANT WOOL – LENZING BLEND

Flame retardant wool blend underwear – versatile wool underwear that offers protection from heat and flame. Safe is made of LENZING FR® and merino wool and is reinforced with polyamide. Safe is the lightest flame retardant underwear from the Devold® Protection collection.

Because it is knitted in a ribbed structure, the underwear is highly elastic and follows your body movements. Safe contains a high percentage of merino wool to keep your body dry and comfortable even during strenuous work. The Balaclava 817 model is EN 13911 certified.

- NOTE:**
- Please enquire for the complete range.
 - Shirts, long sleeves and flame-retardant hoods
 - ALL WITH INTEGRATED PARTICLE PROTECTION! Without membrane!

- Further X-WEAR and Devold products available from TESIMAX.
- The antistatic Devold Shield line is particularly suitable for TESIMAX chemical protective suits due to its special fabric properties.



Devold® BASE LAYER

The **base layer** should be flame retardant to limit burns. It should also absorb and transport moisture to provide better comfort. Moisture wicking is also important to prevent scalding from radiant heat, arcing or other situations where this may occur. To provide better comfort, the underwear should dry on your body.

Devold® MIDLAYER

The **midlayer** should be flame retardant, have good insulating properties and good moisture transport properties. The insulating properties are important to reduce the risk of heat penetration in firefighting operations. The midlayer should also have a looser fit than the base layer to allow more air circulation and therefore better moisture wicking.

TESIMAX OUTERWEAR

This layer should be flame retardant and provide total protection in combination with the other layers. The outer layer should also be weather and wind resistant and have sufficient ventilation and water-repellent properties to keep moisture out.



Top accessories (personal protective equipment) available on request.


Contact TESIMAX for an attractive special offer.




CERTIFIED					
PRODUCT STANDARDS	EN ISO 13688 2013	Flame retardant EN ISO 14116: 2008	Flame retardant EN ISO 14116: 2015	Flame retardant EN ISO 11612: 2008	Flame retardant EN ISO 11612: 2015
Safe	x		x		A1 + A2 B1 C1
Safe mod. 144,146, 210, 216	x				
Safe mod. 817	x		Index 3		A1 + A2 B1 C1
Safe bra	x				
Total	x				A1 + A2 B1 C1
Total mod. 145, 210	x		Index 3		A1 + A2 B1 C1
Total mod. 817					
Spirit	x				A1 + A2 B1 C1
Spirit mod. 144, 146, 216, 219	x		Index 3		
Spirit mod. 817					A1 + A2 B1 C1
Spirit mod. 821					A1 B1 C1
PIQUE	x		Index 3		
POWER					A1 + A2 B1 C1
SPACER	x				A1 + A2 B2 C2
METAL	x				A1 + A2 B1 C1
SHIELD					A1 B1 C2
THERMAL COLLAR					
THERMAL	x				A1 + A2 B2 C2
THERMAL W. ANTISTAT	x				A1 B1 C1

CERTIFIED						
Arc EN 61482-1-2: 2007	Arc EN 61482-1-2: 2009	Antistatic EN 1149: 2008	Antistatic EN 1149: 2018	EN 13911: 2004	EN 13911: 2017	OEKO-TEX®:
Class 1	Class 1		x x x x		x	x x
	Class 1					
	Class 1					
	Class 1					x x x x
	Class 1					x
	Class 1					
	Class 1	x				x
	Class 1					
	Class 1 Class 1	x x x				


EN APPROVALS




CE MARKING
These garments comply with the requirements of Regulation (EU) 2016/425.



EN ISO 13688:2013 (prev. EN 340:2004)
Protective clothing - General requirements.




EN ISO 14116:2015 Protection against flame.
Index 1 of limited flame propagation:
Index 1 (flame spread, flaming debris and after-glow properties)
Index 2 (as Index 1 plus hole formation properties)
Index 3 (as index 2 plus after-flame properties)




EN ISO 11612:2008/2015 A, B, C, D (E & F)
Clothing to protect against heat and flame.
A = Limited flame propagation.
A1: Surface ignition. A2: Edge ignition.
B = Material fulfils protection requirement against contact with flame.
Level B1: 4–10 s, B2: 10–20 s
C = Material fulfils protection requirement against radiant heat.
Level C1: 7–20 s, C2: 20–50 s, C3: 50–95 s, C4: >95 seconds.
D = Material fulfils required resistance to liquid aluminium.

Level D1: 100–200 grams, D2: 200–350 grams, D3: >350 grams.



EN 1149-5:2008/2018
Protective clothing - Electrostatic properties -
Part 5: Material performance and design requirements


EN APPROVALS



IEC 61482-2:2009
Live working - Protective clothing against the thermal hazards of an electric arc. Part 1-2: Test methods - Method 2: Determination of arc protection class of material and clothing using a constrained and directed arc (box test).
Test method: EN 61482-1-1:2009. This method tests the Arc Thermal Performance Value (ATPV) – the energy applied to a material or multi-layered material assemblage that results in a 50 percent probability of sufficient heat transfer through the test specimen to cause a second-degree skin burn based on the Stoll curve without causing the fabric to break open.


Energy breakopen threshold – EBT50
- Incident energy on a fabric or material that results in a 50 percent probability of a heat transfer through the specimen that causes it to break open.

Test method: EN 61482-1-2:2007 “box test”
Class 1 (4 kA)
Class 2 (7 kA)
Arc duration: 500 ms
Frequency: 50 Hz



EN 13911:2004/2017
Protective clothing for firefighters - fire hoods. Against heat and flames as well as thermal effects of an electric arc.

CE MARKING



Devold protective equipment is manufactured and tested in accordance with standards based on European Directive 89/686/EEC and is approved in accordance with CE marking regulations.

The CE marking refers to a safety level of the product. European Directive 89/686/EEC is legally binding and applies to personal protective equipment (PPE) in the European member states. This Directive stipulates as a basic requirement for design and manufacture that PPE must be used to ensure safe working conditions.

Devold protective clothing is designed to prevent accidents and injuries on exposure to cold, heat, flame, the thermal hazard of electric arcs and electrostatic hazards. These garments comply with the requirements of Directive 89/686/EEC for reference standards. Refer to the CE label inside the garment to confirm which of the applicable standards the garment is certified to.

The CE label also lists washing instructions, fabric content, size and model number. We draw your attention to the mandatory user information that must accompany all certified garments. You can also find this information in the product descriptions in this catalogue and at www.devold.com.

DEVOLD®

NORWAY 1853

P. 224

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THE PYROMAN TEST

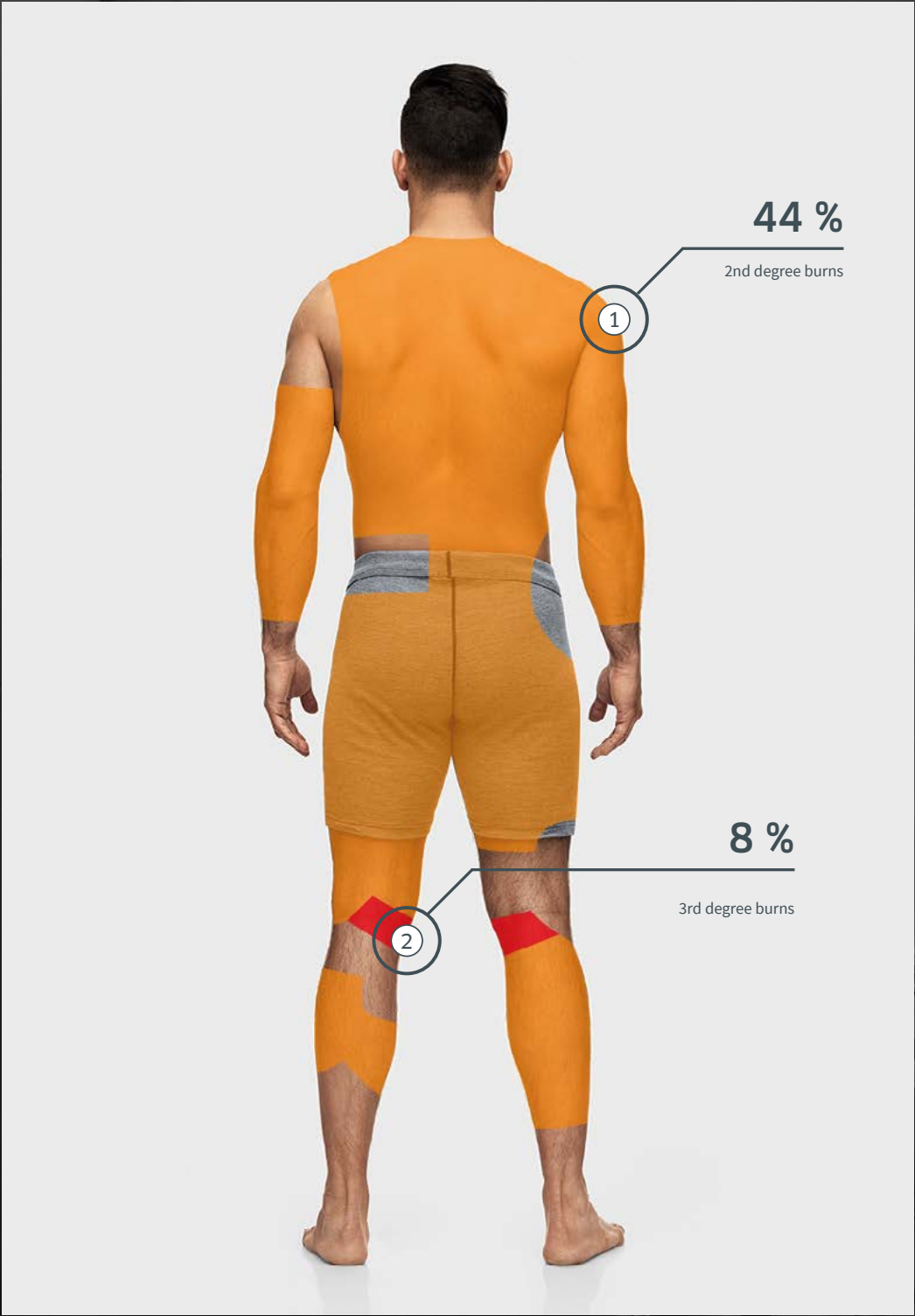
WITH NORMAL COTTON UNDERWEAR

52 %

TOTAL BURNS



COTTON UNDERWEAR



This test is conducted by an independent laboratory at North Carolina State University and tests the degree of burn injury in a flashover. The result of this test indicates the overall level of injury (2nd or 3rd degree burn). We performed the Pyroman test with both flame retardant underwear and normal cotton underwear under a flame retardant suit.

MEASURAND		RESULT	THE TEST IS PERFORMED WITH THE SAME OUTERWEAR	
1	2nd degree burns	44%	●	
2	3rd degree burns	8 %	●	
3	Total burns	53%		

THE PYROMAN TEST

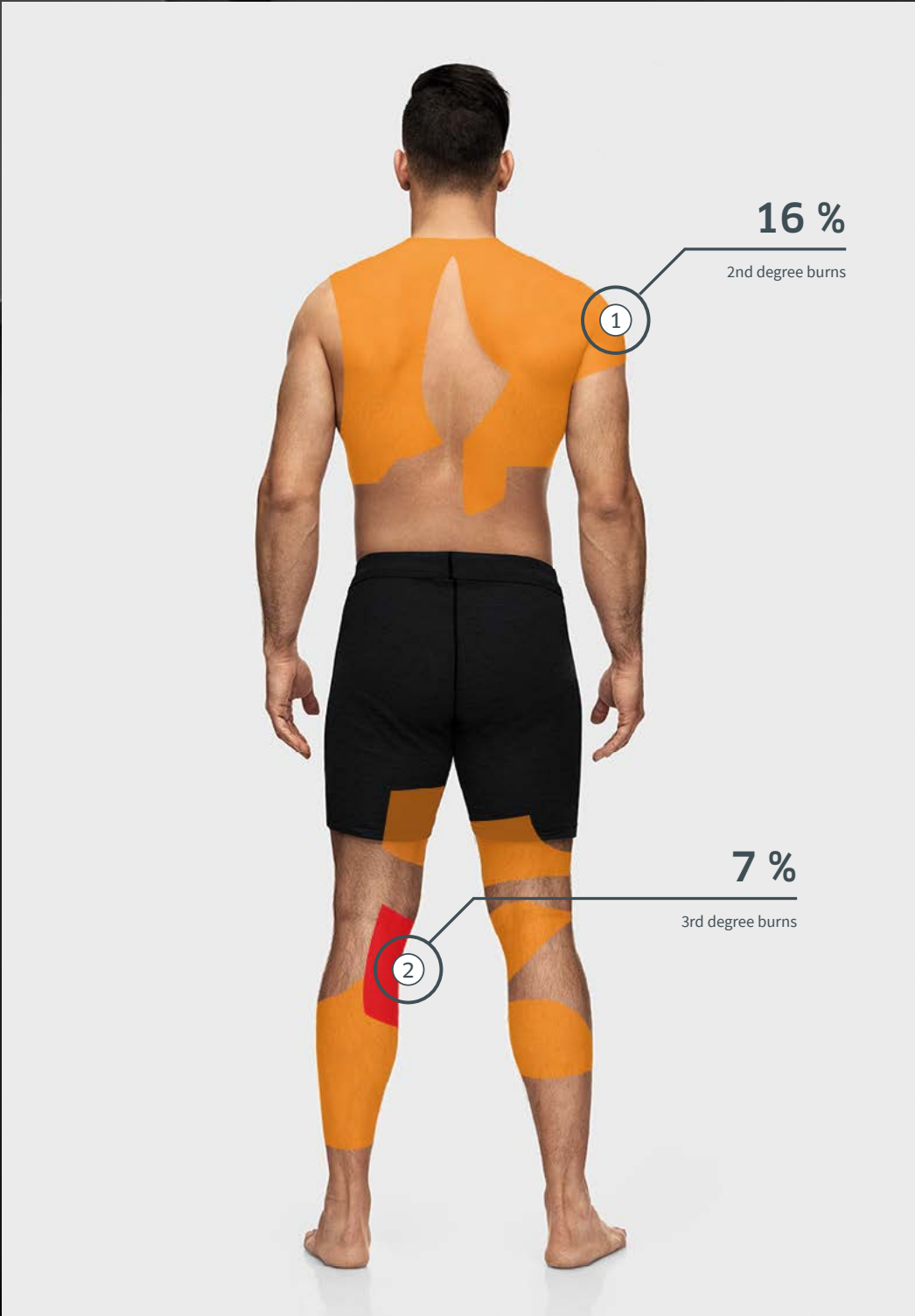
WITH Devold® FLAME RETARDANT WOOL UNDERWEAR

23 %

TOTAL BURNS



FLAME RETARDANT UNDERWEAR



In addition to the above burns, scalds can occur due to moisture. The body's own sweat often causes burns. If the sweat remains on the skin, it can overheat and begin to boil. It is therefore vital to use underwear with good moisture wicking properties. Garments containing synthetic fibres melt and cause severe skin injuries.

MEASURAND		RESULT	THE TEST IS PERFORMED WITH THE SAME OUTERWEAR	
1	2nd degree burns	16 %	●	
2	3rd degree burns	7 %	●	
3	Total burns	23 %		

DEVOLD® SHIELD

FLAME RETARDANT WOOL/
LENZING BLEND



IEC 61482-2
ARC

EN ISO 11612
FLAME RETARDANT

EN 1149-5
ELECTROSTATIC

STRUCTURE
TERRY

WEIGHT
280 g/m²



Devold® Shield flame retardant wool blend clothing – an underwear and mid-layer collection suitable for the working with electricity, gas, heat and flame. Shield is knitted from Lenzing FR® and merino wool and reinforced with polyamide. It also features Nega-Stat®, which is a special fabric that provides garments with ideal antistatic protection. Shield also protects against arcing and electric flashovers. The garments are made of terry knit, which provides a layer of air between body and garment that insulates against cold and heat.



SHIELD sweater

Colour: black
Sizes: S–4XL
Order no.: 4000-400



SHIELD zip neck

Colour: black
Sizes: S–4XL
Order no.: 4000-400



SHIELD sweater

Colour: black
Sizes: S–4XL
Order no.: 4000-145



SHIELD trousers

Colour: black
Sizes: S–3XL
Order no.: 4000-146

MATERIAL
49% Lenzing FR®, 39% wool (merino) 10% polyamide, 2% Nega-stat® terry
280 g/m² ±10%

Limited flame propagation: ISO 15025-A1
Convective heat: ISO 9151
Radiant heat: ISO 6942

Devold® Safe

FLAME-RETARDANT WOOL – LENZING BLEND



Safe zip neck

Colour: black
Sizes: S-5XL
Order no.: 4000-141



Safe T-shirt

Colour: black
Sizes: S-5XL
Order no.: 4000-132



Safe T-shirt

Colour: black
Sizes: S-3XL
Order no.: 4000-136



Safe long johns

Colour: black
Sizes: S-5XL
Order no.: 4000-133



Safe boxer shorts

Colour: black
Sizes: S-3XL
Order no.: 4000-133



Safe cap

Colour: black
Sizes: 0/S
Order no.: 4000-300





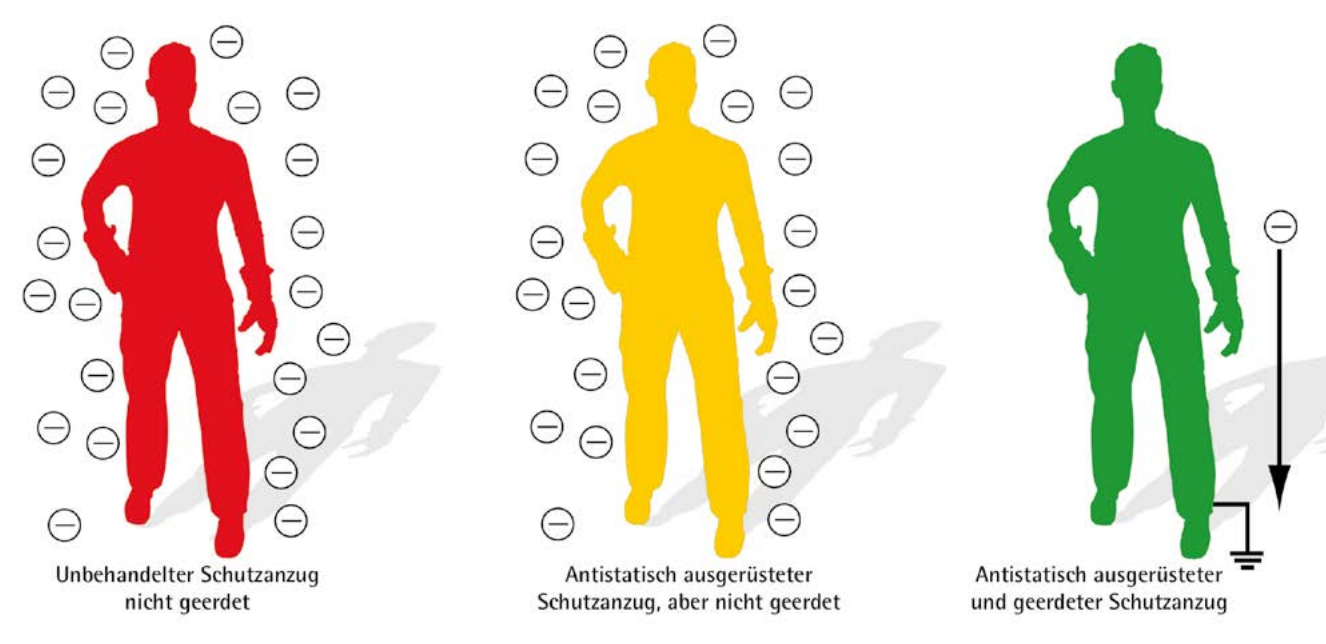
Service

Using static inhibitor with protective suits

The static inhibitor has been tested and certified in combination with our protective suits.

Equipped with the static inhibitor, our CHEMBA, POLYRAN, SYKAN and SILVERFLASH suits are classified as having full dissipative properties. The SILVERFLASH is the only protective suit that is dissipative without static inhibitor. All suit materials therefore meet the applicable requirements for ESD protection and hazardous areas. The protective suits are permanently equipped with static inhibitor ex works, with a storage life of up to 5 years, ideally in TESIMAX vacuum SMART STOCK packaging. Because the static inhibitor does not fully remove the risk of electrical charge, we recommend the observation of a few important safety rules:

- Protective suits must be correctly and continually earthed through conductive safety shoes, footlets, floors and/or earthing straps. If the wearer of a protective suit treated with static inhibitor is not connected to an earthed surface, the wearer and/or the protective suit will remain charged.
- When taking off the suit, make sure that the earthing is not interrupted.
- Because the antistatic film is moisture-absorbing, the static inhibitor may not be effective for longer periods in very dry conditions, for example at an air humidity of less than 25%. Testing to EN 1149/1 is carried out at a relative humidity of 25%.



TESIMAX static inhibitor for plastics

Static inhibitor for eliminating electrostatic charge. The liquid forms a thin, almost invisible and imperceptible film that reduces surface resistance and whose conductivity is sufficient to reliably prevent electrostatic charging of synthetic or textile surfaces. It reliably reduces the surface resistance.

TESIMAX static inhibitor can be conveniently applied in a thin layer with a spray bottle and spread over the surface with a lint-free cloth.

ORDERING DATA for the TESIMAX static inhibitor

TESIMAX static inhibitor for plastics, quantity unit: canister (25 l) Order no.: 0283-001
TESIMAX static inhibitor for plastics, quantity unit: canister (1 l) Order – no.: 0283-001 1L

		POLYRAN L (SUPER-LIGHT)	Duoform Tessaform CHEMBA	SYKAN 1-2-4	SILVERFLASH
Zone 0	An area in which an explosive atmosphere consisting of a mixture of air with flammable substances in the form of gas, vapour or mist is present continuously or for long periods.	✓	✓	✓	✓
Zone 1	An area in which an explosive atmosphere consisting of a mixture of air with flammable substances in the form of gas, vapour or mist is likely to occur under normal operating conditions.	✓	✓	✓	✓
Zone 2	An area in which an explosive atmosphere consisting of a mixture of air with flammable substances in the form of gas, vapour or mist could occur under abnormal conditions and is not likely to occur under normal operating conditions.	✓	✓	✓	✓
Zone 20	An area in which an ignitable concentration of dust is present in the air continuously, for long periods or frequently.	✓	✓	✓	✓
Zone 21	An area in which an ignitable concentration of dust in the air is likely to occur occasionally under normal operating conditions.	✓	✓	✓	✓
Zone 22	An area in which an ignitable concentration of dust in the air may occur for brief periods and is not likely to occur under normal operating conditions.	✓	✓	✓	✓

CPS SERVICEPOOL

As manufacturer of chemical protective suits for firefighters, we must, according to PPE Regulation (EU) 2016/425, explain to the user the criteria for reusing a reusable protective suit.

We will be happy to advise and support you:

- Legal basis for chemical protective suits in Europe
- CPS selection according to hazard potential
- CPS selection according only to chemical properties
- CPS selection according only to mechanical properties
- PROCEDURE: CPS use and preliminary decontamination
- PROCEDURE: CPS reconditioning according to risk class
- PROCEDURE: CPS decontamination after contamination with war gasses

In addition, TESIMAX offers its CHEM SUPPORT to all customers.
Technical advice is available during normal office hours: Monday to Friday from 9 a.m. to 5 p.m.
E-mail messages are dealt with as quickly as possible. Our CHEM SUPPORT provides our customers with the following services:

- Feedback about European and international PPE standards (protective suits)
- Information about the permeation rates of TESIMAX protective suits
- Chemicals testing (including war gasses) on TESIMAX protective suits by an independent Institute
- Analyses and (written) survey report regarding the 100% reusability of the CPS
- Consultation regarding the disposal of contaminated protective suits (see also SERVICEPOOL procedure regulations)
- Help with procedure and logistics in handling (contaminated) protective suits after an operation:

Take advantage of our expertise!

SERVICES FOR (reusable) CHEMICAL PROTECTIVE SUITS (CPS)

IN WHICH CASES CAN TESIMAX HELP?

- Training CPS must be washed and reconditioned after training.
 - CPS must be inspected and serviced either once a year or according to manufacturer’s instructions (example: TESIMAX Smart Stock vacuum packaging system).
 - CPS contaminated or damaged after use must be assessed as to whether they can still be cleaned or reconditioned.
- Whether a CPS can be reconditioned depends on the possible contamination (the hazardous substance, exposure time, permeation times and other factors). This must be discussed and clarified in advance after use.
- No costs are incurred by this. TESIMAX will help you with its expertise.

TESIMAX REUSABLE PROTECTIVE SUITS (CBRN, EN 943):
TESIMAX real reusable products

- In this age of throw-away culture, TESIMAX has achieved a reusability of its products of up to 90 %, both before and after operations. This is made possible by our extensive expertise.
- All reusable chemical protective suits have a service life of up to 10 years plus a further (optional) 5 years.
- All reusable products can be repaired as long as economically viable.

WHAT DOES TESIMAX OFFER?

TESIMAX offers an all-round, worldwide Total Care service for chemical protective suits (CPS), as repairs are cheaper than procuring new suits in most cases. TESIMAX decontaminates, washes, dries and tests the CPS. Wear parts are replaced as required. The suit is packed and returned to you ready for use together with an inspection and test report. The protective suit is ready for use again.

If required, TESIMAX will provide you with an equivalent loan suit for the duration of reconditioning of your used CPS (while stocks last). This service is available in Europe and throughout the world from authorized TESIMAX Servicepool partners. The Servicepool partners each offer a limited range of services.

WHO CAN USE THESE SERVICES?

- These services and prices apply exclusively to chemical protective suits from TESIMAX.
- Other makes of protective suits can be cleaned (disinfected) and subjected to a visual inspection (module 2).
- If a CPS cannot be recycled, we offer certified disposal with verification.

YOUR BENEFITS AT TESIMAX

COLLECTION

- We organise collection for you anywhere in the world on workdays during our normal office hours.
- TERMS AND CONDITIONS (see also Preconditions*):
- Preliminary decontamination must have been completed (hazardous substances safety data sheet required in advance!)
 - Regarding the further procedure, such as decision, delivery/collection (worldwide), contact your service partner (TESIMAX or Henkel).
 - Carry out a preliminary decontamination of the contaminated CPS and pack it in plastic bags and transport containers -> see packing instructions.
 - Personal delivery (fire services) or on-site collection of contaminated chemical protective suits by the TESIMAX collection service.
 - Some authorized Servicepool partners also accept contaminated respiratory equipment. We compete your order in the shortest time possible.

LOAN SUITS

For the duration of reconditioning used garments, we provide you with free loan suits as long as stocks last. The loan CPS are fully functional and unconditionally suitable for use by fire services and/or in industry according to the current standard EN 943 Part 2 (ET).

The following regulations apply:

1. When we have completed repairs or maintenance of your chemical protective suits, you return the loan suits and receive your repaired suits. For used loan suits, the same regulations as for your own chemical protective suits (CPS) apply (see “Preconditions for acceptance”).

2. Should loan suits have repairable damage after use, we will charge you the costs of repair of each affected suit.

3. Should loan suits incur irreparable damage or damage whose repair is not economically viable, we will charge you the cost of each damaged CPS according to the current list price. We also offer a disposal service (see “Disposal”). The same applies for chemical protective suits with residual contamination that prevents further use of the suit.

MAX-ANALYTICS / PERFORMANCE

Take advantage of our 100% manufacturer’s service/analytics (residual contaminant verification) for reuse of your protective suits – fast and inexpensive.

QUALITY

Take advantage of our TÜV-tested craftsmanship as well as washing, cleaning and disinfection agents to ensure that your products have a long and reliable service life.

DISPOSAL

- When purchasing new TESIMAX protective suits, we offer professional disposal with a proof of disposal notice.
- We take care of the disposal of all makes
 - A professional preliminary decontamination must have been carried out beforehand. For prices, please enquire.

EXPRESS DELIVERY

We process your standard order within 14 days after receipt of goods, taking into account public holidays and vacation times.

CPS SERVICE – SERVICE MODULES 2023 AND PRICES

TRANSPORT MODULE A: CPS DIRECT DELIVERY (worldwide) – at no cost

Deliver the CPS yourself:
- in compliance with the Terms and Conditions
- at the usual business hours on working days

TRANSPORT MODULE B: CPS COLLECTION (EU) – chargeable

We arrange collection of your CPS from you.
Please observe the packaging guidelines for non-contaminated and contaminated CPS.
- Transport flat rate on collection within Germany: €14.90 per CPS
- Transport flat rate within EU & worldwide: shipping/transport costs according to prices of the instructed carrier.

Shipment tracking:
Contact TESIMAX after parcel transfer to the carrier.

MAINTENANCE MODULES

MODULE 1: RECONDITIONING OF OPERATION CPS

For contaminated chemical protective suits (CPS); only after submission of the CAS numbers, operation report and prior consultation
0800-057 – CPS cleaning before maintenance: €329.00

Includes:
BEFORE CLEANING:
- Suitability test through TESIMAX CAS analysis including operation report before cleaning.
- If the CPS is not suitable for cleaning, this is recorded in writing and the documentation (residual contamination test) is submitted to the customer. The CPS must be disposed of in a certified manner subject to a disposal charge.
There are no additional costs. On request, we can make an offer for a replacement.

CLEANING:
- The CPS are cleaned, disinfected and dried accordingly according to TESIMAX protocol.

AFTER CLEANING
- RELEASE: The CPS is subjected to a final test with our own residual contamination detection procedure and released for further maintenance.
- The CPS is then inspected (Module 2: CPS maintenance) and processed further.
- NO RELEASE: Should residual contamination be detected in residual contamination test, the CPS must be disposed of in a certified manner subject to an additional disposal charge. On request, we can make an offer for a replacement.

MODULE 2: CPS MAINTENANCE

Chemical protective suits (CPS) that are not contaminated must nevertheless be sent to us in a clean condition. Otherwise we will have to clean them. The cost of this is not included in the module price.

0800-002 CPS incoming inspection before maintenance: €79.90 without inspection report
NOTE: If the incoming inspection is successful, i.e. the CPS passes the tightness test, no defects are found and the suit is deemed fit for use, Module 2 is not charged. The CPS and activities are then invoiced directly via Module 4.

Includes:
- Check of accompanying documents. If necessary, preliminary clarification with customer.
- Visual inspection of components (such as zip, visor, valves, gloves, boots and accessories or optional equipment).
The visual inspection is mandatory, as it is the only way of detecting mechanical damage to the CPS (e.g. discolouration, tears and holes).
- Functional test (zip, Angel Sensor systems, forced ventilation)
- Pressure tightness test (e.g. CPS overpressure test and valve vacuum pressure test). The pressure tests are mandatory, as they are the only way of identifying leakage points on the CPS.

MODULE 3: SEPARATE (OPTIONAL) CPS MAINTENANCE WORK

Includes:
- Any optional repair and maintenance work will be charged separately (e.g. glove, boot and visor replacement, seam and material sealing and zip replacement).
a. We let you know the result of the CPS check together with a (quote or cost estimate) for your approval. Once we have received your written approval, we carry out the remaining CPS maintenance work.

b. If you have a Quick Service framework agreement with us, this item and any repair work will also be invoiced, but without prior approval of the costs from you. In that case, we will begin servicing your CPS immediately.

MODULE 4: CPS ANNUAL INSPECTION OR TIGHTNESS TEST AFTER MAINTENANCE

Chemical protective suits (CPS) that are not contaminated must nevertheless be sent to us in a clean condition. Otherwise we will have to clean them. The cost of this is not included in the module price.
0800-003 – CPS inspection after maintenance or annual inspection: €106.70 with inspection report
[NOTE: If the CPS does not pass the standard tightness test, further costs will be incurred. For details, see modules 2 and 3.]

Includes:
a. Visual, functional and pressure tightness test incl. replacement of the valve discs according to EN 943 and manufacturer’s specifications.
b. An inspection and test report is created and the suit data is recorded.
The garments are then returned complete with a test certificate and the service costs invoiced. Packaging and transport costs are charged separately.

MODULE 5: CPS 10-YEAR INSPECTION

Chemical protective suits (CPS) that are not contaminated must nevertheless be sent to us for ten-year inspection and testing in a clean condition. Otherwise we will have to clean them. The cost of this is not included in the module price.
0800-004 – CPS ten year inspection: €399.00 with inspection report
[NOTE: If the CPS does not pass the standard tightness test, further costs will be incurred. For details, see modules 2 and 3.]

Includes:
a. Visual, functional and pressure tightness test according to EN 943 and manufacturer’s specifications.
b. This price includes the replacement of:
• Valve discs, including cost of replacement diaphragm
• Boots, not including cost of boots
• Gloves, not including cost of gloves
c. An inspection and test report is created and the suit data is recorded.
The garments are then returned complete with a test certificate and the service costs invoiced. Packaging and transport costs are charged separately.

MODULE 6: CERTIFIED CPS DISPOSAL

0800-058 – CPS disposal: €126.25
If a protective suit must be disposed of, we dispose of it in a certified manner.
The price includes the disposal and the required container. The customer then receives the proof of disposal and associated documentation (residual contamination test).
MODULE 6: RETURN TRANSPORT. The CPS is returned to the customer:
- RETURN transport flat rate on collection within Germany: €14.90 per CPS
- RETURN Shipping costs EU & WORLDWIDE: For Shipping/transport costs on quotation basis

MODULE 7: TRAINING SUITS

0800-053 – CPS used for training or uncontaminated operation CPS: €125.40
[NOTE: If we identify any defects on the CPS, we notify the customer; for costs of repair, see modules.]

The following care and maintenance is carried out:
Machine washing of interior
Machine disinfection of interior
Drying
Note: without leak test, without certificate

The two-year maintenance of the CleanAIR Chemical 3F powered air-purifying respirator from Tesimax

includes:
MODULE 8: 2-year maintenance

- Leakage test
- Minimum flow rate test
- Low flow warning system test
- Battery alarm check
- Creation of a test certificate
- Shipping and handling costs not included

We can offer on-site maintenance at the customer’s premises within Baden-Württemberg for a flat-rate travel charge of €290.00 net.

Courses & training

Equipment maintenance training at TESIMAXOrder no. 0800-100

Equipment maintenance training at TESIMAX

- 2-day training course, price per person
- Hotel costs are invoiced separately

This course covers theory and practice and includes:
practical maintenance of chemical protective suits (CPS);
- Replacement of gloves, boots, valves and visors
- Seam sealing, cleaning, disinfection and drying of CPS; decontamination measures

- Inspection of protective suits according to EN 943 and according to manufacturer’s methods; correct storage; operational readiness of suits; putting on a CPS and wearing practice.
- Start on the first day of the course approx. 9:00 AM, end on the second day of the course at the latest around 2:00 PM
- This course must be repeated every 3 years.

Appointments with the TESIMAX service team can be made on +49 7234 948590 or by email to service@tesimax.de

The dates for the equipment manager courses can be found at www.tesimax.de

Equipment maintenance course: 5 persons on siteOrder no.: 0800-101

Equipment maintenance training at customer’s site (only within Germany)

- One-day course, price per course for up to 5 participants

On-site practical training covers the following areas:
- Testing the protective suits (tightness and valve test) according to EN 943 and manufacturer’s methods
- Functional test of the forced ventilation system (F-AU) and the Angel Light (if fitted)

Practical maintenance of chemical protective suits:
- Replacement of gloves, boots, valves and visors (on the VS 20)
- Seam sealing, cleaning, disinfection and drying of CPS.
- Correct storage; operational readiness of the suits, putting on and wearing CPS.

Appointments with the TESIMAX service team can be made on +49 7234 948590 or by email to service@tesimax.de

Online equipment maintenance trainingOrder no.: 0800-109

The online/video training covers the following areas:

- Brief theoretical introduction (standards etc.)
- Then, via video link:
Testing of protective suits according to EN 943 and manufacturer’s methods; maintenance work on chemical protective suits (CPS), e.g. changing gloves, boots, valves and visors
- The course ends with an open question and answer session

For information about the procedure and requirements for the online course and about booking your course, contact TESIMAX.

Equipment maintenance courseOrder no. 0800-103

Equipment maintenance training at customer’s site (only within Germany)
One-day course, price per course from 6 to 10 participants

On-site practical training covers the following areas:
- Testing the protective suits (tightness and valve test) according to EN 943 and manufacturer’s methods
- Functional test of the forced ventilation system (F-AU) and the Angel Light (if fitted)

Practical maintenance of chemical protective suits:
- Replacement of gloves, boots, valves and visors (on the VS 20)
- Seam sealing, cleaning, disinfection and drying of CPS.
- Correct storage; operational readiness of the suits, putting on and wearing CPS.

Appointments with the TESIMAX service team can be made on +49 7234 948590 or by email to service@tesimax.de

Equipment maintenance courseOrder no. 0800-106

Equipment maintenance training at customer’s site (only within Germany)
One-day course, price per person from 2 participants

On-site practical training covers the following areas:
- Testing the protective suits (tightness and valve test) according to EN 943 and manufacturer’s methods
- Functional test of the forced ventilation system (F-AU) and the Angel Light (if fitted)
- Visor replacement of the VS 20
- Maintenance tips (e.g. for changing the valve diaphragm (time interval))

Appointments with the TESIMAX service team can be made on +49 7234 948590 or by email to service@tesimax.de

Equipment maintenance course (at authorized partner):Order no. 0800-108

On-site equipment maintenance course at an authorized partner’s premises
One-day course, price per person (minimum number of participants is 10)

On-site practical training covers the following areas:
- Testing the protective suits (tightness and valve test) according to EN 943 and manufacturer’s methods
- Functional test of the forced ventilation system (F-AU) and the Angel Light (if fitted)

Practical maintenance of chemical protective suits:
- Replacement of gloves, boots, valves and visors (on the VS 20)
- Seam sealing, cleaning, disinfection and drying of CPS.
- Correct storage; operational readiness of the suits, putting on and wearing CPS.

- The dates for the equipment manager courses can be found at www.tesimax.de

CPS Servicepool: Inspection and repair kit

Test kit BLACK BOX

Gas and chemical protective suits must be regularly checked for leak-tightness. TESIMAX protective suits must be tested after every use and at least every 12 months (except SMART STOCK CPS, only after use or after 5 years' storage). Visual inspections and functional tests must be carried out to check for structural damage and damage caused through the secondary effects of hazardous materials.

The pressure relief valves must be tested in their installed state. In addition the valve discs must be visually inspected and must be replaced every two years.

All leaktightness tests on protective suits and pressure relief valves can be carried out with the BLACK BOX suit and valve leaktightness tester.

Product details, BLACK BOX

- Fully automatic test device for computer-assisted testing of chemical protective suits
- Including vacuum testing of exhalation valves
- Ethernet interface for connection to a PC
- Supplied without PC (we can advise you on the selection of a suitable system)
- Compact dimensions
- Mobile, impact-resistant box

Order no. 0255-001

Product details, BLACK BOX SOFTWARE

- Intuitive inspection software for all chemical protective suits to EN 943
- Suitable for Windows operating system from XP

Order no. 0250-002

BLACK BOX LIGHT tester (mechanical)

Portable tester for normal and vacuum pressure testing TESIMAX protective suits with two pressure gauges -25 to 0 mbar and 0 to 25 mbar, pump, compressed air gun and corresponding test adapters for valves G3 and T500.

Order no.: 0255-004

Test kit T 500 (for CPS series VS 5, VS 20, VSF 20 and VSF 21)

For other test sets for valves S3 and G3 please enquire or see the respective user manual.

- Filling hose with male coupling and adaptor for pressure relief valve, outside
- Test hose with Adapters for pressure relief valve, outside (gauge pressure)
- Test hose with Adapters for pressure relief valve, inside (vacuum pressure)
- Sealing plug, outside (3 pce.)
- The hoses have an outer diameter of 6 mm and an inner diameter of 4 mm

Order no.: 0373-027

VS 5 CHEMBA test kit

Test plug suitable for the limited-use protective suit with:

- Filling hose (8 mm) 4 m long with 2 x small nipple and test plug with coupling
- Test hose (8 mm) 4 m long with 1 x small nipple, 1 x hose "open" on one side, adapter (Euro coupling, sleeve, small coupling) and test plug with coupling
- Hose (8 mm) 3 m long with 1 x small nipple and small coupling

Order no.: 0373-039

Test set with GS 3 adapter plate (for GS 3 and GS 3M series CPS)

- GS 3 test adapter plate (triangle) incl. quick-connect coupling
- Filling hose, 2 m, with quick-connect nipple
- Test hose, 2 m, with quick-connect nipple
- 2 x sealing plug for G3 valve
- The hoses have an outer diameter of 6 mm and an inner diameter of 4 mm

Order no.: 0373-014

Note: For further repair and maintenance articles, see the respective user manual or enquire.

Quick seal

Quick-seal magnetic foil

The Quick-seal magnetic foil is placed onto the metal lid of the inlet, to which it adheres magnetically to form a seal.

Advantages: Quick to use, simple storage and transport, no further tools needed.

Ordering data: Drain quick seal

ARTICLE	ORDER NUMBER
Seal, 51 x 51 cm	0248-000
Seal, 60 x 60 cm	0248-002
Seal, 100 x 100 cm	0248-001



TESIMAX CPS repair kits

All kits consisting of:

- 3 x fabric, size A4
- 3 x fabric, Ø 7 cm
- 1 brush, narrow
- 1 brush, wide
- 1 tin seam sealer, liquid
- 1 tin strengthener
- ½ tin strengthener

Following correct repair (according to TESIMAX equipment maintenance training) a CPS has the same properties as the undamaged suit again.

Repair kit POLYRAN-L	Order no.: 0374-005
Repair kit SYKAN 5	Order no.: 0375-016
Repair kit SYKAN 2	Order no.: 0375-020
Repair kit SYKAN 4	Order no.: 0375-021
Repair kit SILVERFLASH	Order no.: 0375-004

NOTE:
For further repair and maintenance articles, see the respective user manual or enquire.

CPS CLEANER, DISINFECTION, PRELIMINARY DECONTAMINATION

PRE- AND AFTERWASHING AGENT:

TESIMAX ULTRA CLEANER

For manual removal of coarse soiling on the CPS; for washing CPS with cold water (inside and outside); 20 l canister
Order no.: 0282-004

PRE- AND AFTERWASHING AGENT: B.-Power grease remover (against grease & burned-on residue)

The solution against all types of greasy dirt. Its ultra-powerful formula works immediately and removes even lubricating and engine oil, soot and burnt-on residue effortlessly without scrubbing. Safe for use with food-stuffs. Therefore also safe on skin contact with freshly cleaned surfaces.
Order no.: 9000-001

PRE- AND AFTERWASHING AGENT: Lanadol AVANT (x-treme)

Extra strong grease remover for extremely soiled, less sensitive protective suits. Ideal remover for grease, oil and pigment at 10 – 40 °C.
Order no.: 9000-001

CPS CLEANER: EW80 CLEAN

For cleaning CPS with cold water (outside and inside) – tested according to RKI/VAH list
Order no.: 0282-013*

CPS DETERGENT: Derval RENT

For machine washing CPS – tested according to VAH list.
Order no.: 0282-009

CPS DETERGENT: Viva Lana is used in combination with Viva Duox.

Order no.: 0282-021*: For machine washing CPS – tested according to RKI/VAH list (Viva Lana)
Order no.: 0282-022*: For machine washing CPS – tested according to RKI/VAH list (Viva Duox)

CPS DISINFECTANT: LANADOL ABAC

Order no.: 0282-010: Fine disinfection for CPS (inside), 22 l canister

CPS DISINFECTANT: EW80 DES

Order no.: 0282-023*: Fine disinfection for CPS (inside)

WASHING AND CLEANING: ACCESSORIES

Order no.: 9000-001; Sponge*, brushes, vacuum cleaners, cleaning cloths, disinfecting cloths – please enquire

* TESIMAX PROTECTIVE SUIT WASH SPONGE

This sponge is made from high-quality materials and is a practical aid for washing protective suits. It can withstand grease, oil and petrol.
Tip: Do not use brushes for suit maintenance.

FOR OTHER WASHING AND CLEANING AGENTS PLEASE ENQUIRE.

TESIMAX (CPS) CLEANING AGENT

With ULTR cleaner BASIC, TESIMAX provides a product for removing grease, dirt and odour. This cleaning agent can be used for 90% of all cleaning work, including in the food industry, in hotels, commercial kitchens and canteens. It can also be used for cleaning and deodorising waste containers and toilets, in fire brigades for chemical protective suits and breathing masks, in the automotive industry, and even as a household cleaner and for motorcycles, cars and boats.

Advantages

- Biodegradable
- An almost neutral, pleasant scent
- Non-toxic
- Cost-effective – being a concentrate, it can be diluted depending on use
- Not subject to any transport restrictions
- Not classified as a hazardous composition according to the German Chemicals Act
- Not flammable or explosive
- The product's decomposition products are not harmful; the product does not cause acid burns
- Does not contain fluorocarbons or adsorbable organic halogenides (AOX)
- Can be used for 90 % of all cleaning work

Usage recommendation

Use this product e.g. for cleaning the insides and outsides of all our chemical protective suits.
Thorough preliminary cleaning of the protective suit with TESIMAX ULTRA cleaner should always be carried out.

Ordering data

1-litre canister	Order no.: 0282-001
20-litre canister	Order no.: 0282-004
Empty bottle with spray head	Order no.: 0282-007

CPS washing and cleaning: PROFESSIONAL CPS PRELIMINARY DECONTAMINATION SYSTEM Neutralizing agent for chemicals

AVAILABLE EXCLUSIVELY FROM TESIMAX: FOR PRELIMINARY DECONTAMINATION & CHEMICAL NEUTRALIZATION OF CPS
Tip: Can also be used for quick identification and on-site chemical neutralization together with binder.

- This product neutralizes all kinds of liquid hazardous substances as well as corrosive acids and alkali and has a pH-neutralizing action. It is even effective on hydrofluoric acid by chlorinating the fluoride ions. During everyday work, maintenance or accidents involving hazardous substances, the surface/protective material of the suit may become contaminated. Without decontamination of the hazardous substance, long-term exposure to the protective suit material may cause deterioration of the material and exposure to the wearer, causing, for example, acid burns when taking off the suit.

- Neutralization indicator: The integrated colour indicator shows whether the material has been contaminated with acids or alkalis: The decontamination solution returns to its original colour when neutralization is completed.

- Harmless: Non-irritant, non-flammable.
- The neutralizing agent should be used with every professional preliminary decontamination.
- BENEFITS: Improves the service life and reconditioning of chemical protective suits.
- Do not forget to put on PPE suitable for hazardous substances and to mark the area accordingly.
- Dispose of any residues, such as hazardous substances, in accordance with national legal requirements.

- Available in the following sizes:

0282-024*	Spray can 750 ml
0282-025*	Canister 5 l
0282-026*	Canister 10 l
0282-027*	Compressed air spray bottle 5 l

ACCESSORIES AND PPE FOR PROFESSIONAL CPS PRELIMINARY DECONTAMINATION

0292-206	Single use protective suit ESK 1 PE-D+ with gloves and footlets, various sizes
4000-038*	Safety goggles: Prevendor
0700-020	Respiratory mask (FFP2 or FFP3), pack of 10
0176-005	Protective boots Acifort® Heavy Duty, black (standard size 46, others please enquire)

Preliminary decon spray systems

0282-028	PRESSURE TESTER, STAINLESS STEEL (5 l), also available as 10 l canister
0282-029	PRESSURE TESTER (PSU 4-18 with replaceable 18 V re-charge, battery, 4 l tank and telescopic lance)
0292-029	HIGH-PRESSURE TESTER (230 V, recharg. battery in various versions, tank and telescopic lance)

FINE DECON CPS WALL HANGING SYSTEM

9000-001	CPS wall hanging system for reconditioning using TESIMAX SAFER CPS method*
Tip:	Training for TESIMAX SAFER CPS reconditioning is available only from TESIMAX as part of its equipment maintenance training course (for details, visit www.tesimax.de).

CPS WASHING and CLEANING: STORAGE and TRANSPORT SYSTEMS

SMALL BOX CPS CONTAINER – RECOMMENDED

0800-054	Chemicals resistant SMALL BOX container for turnout gear and CPS, with lid, colour blue, stackable, reusable External dimensions: 80 x 60 x 44 cm (L x W x H), suitable for transporting a (contaminated) CPS In combination with our plastic bags; also suitable for long-term storage of non-contaminated CPS accessories for the SMALL-BOX turnout gear and CPS reusable container: e.g. set of skids or casters, self-adhesive bags, security seal RECOMMENDED: Security seals (tensile load capacity; 20 N; code: PB) Security seals are used to seal transport containers. If a container has been opened, the seal is broken at a predetermined breaking point, indicating that the content may have been tampered with. Security seals are suitable for reusable containers, IBCs and folding boxes.
9000-001	

9000-001	RECOMMENDED: CPS marking SELF ADHESIVE POCKETS A6 or A5 format (standard, code: 7035) - A4 landscape format Plastic bag for packaging contaminated CPS Packaging cardboard box, 63 x 43 x 40 cm (1 std. pack = 5 boxes)
0800-059* 0800-062*	Barrier adhesive tape 25 m SILVERFLASH TAPE, chemical resistant for optional, secure closure of the transport box/plastic bag

BIG BOX turnout gear and CPS container – RECOMMENDED

0800-056	The Big Box has closed side walls and is exceptionally rugged. It is dimensioned according to ISO and Euro formats and has a large capacity, making it particularly suitable for storing and transporting bulky, heavy goods (e.g. several CPS). Dimensions: 120 x 80 x 79 cm (L x W x H); fitted with skids as standard • ISO and Euro formats • Optionally with skids, feet or casters • Easy to clean
0800-063*	The foldable Big Box with 4 access flaps has an ergonomic design for comfortable handling. Four flaps in the side walls allow quick, convenient access to the contents. When not in use or for return transport, the outer walls can be folded inwards to save space. Especially suitable for storing and transporting bulky, heavy goods (e.g. several CPS). Dimensions: 120 x 80 x 100 cm (L x W x H) - fitted with skids as standard

ACCESSORIES FOR REUSABLE BIG BOX TURNOUT GEAR/CPS CONTAINER

0800-064	REMOVABLE LID FOR BIG BOX (Dimensions, L x W: 120 x 80 cm)
0800-065	PLASTIC PALLET: The skids fitted as standard gives these lightweight pallets even more stability and torsional rigidity. These pallets are suitable for heavy loads when lifted with a forklift. Dimensions: 120 x 80 cm (L x W) • Outstanding stability • Low dead weight • High load capacity • Suitable for worldwide export

TRANSPORT CONTAINER for turnout gear/CPS (blue)

0800-066*	Turnout gear/CPS transport container (blue): chemical resistant, with liquid-tight lid, capacity 120 litres, with UN-X/S hazardous goods approval For certified disposal by TESIMAX service providers; disposal fee not included.
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You can find the complete overview of original accessories (spare parts) in the respective user manual.

CPS Servicepool: Drying station

TESIMAX DRYER

The drying system for TESIMAX protective suits ensures effective uniform drying of the whole suit.

During drying, the protective suits are hung over the hangers complete with their boots, so that any water remaining in the suit can drip down into the head section.

The hand sections can be placed loosely in the suit before being connected to the air frame/manifold.

The TESIMAX protective suit drying system comprises the following components:

- Mobile frame (incl. robust castors)
- High-performance fan for effective drying of the suits (integrated in the frame)
- Holding frame for two suits with plug-in arm sections for connection to the air frame

Technical data

TESIMAX mobile drying system for two chemical protective suits

Dimensions:

- a) 132 x 60 x 260 cm with frame (pluggable) for 2 protective suits
- b) 132 x 60 x 80 cm without frame

Order number: 0260-010



REAL-TIME TRAINING (Fire Training Werl)

Training Order no. 0800-107

- Operations simulation with experienced trainers
- Content of turnout gear training:
TESIMAX turnout gear (with heat protective underwear), tested live in the fire container

CHEMICAL PROTECTIVE SUITS (CPS)

- Putting on the protective suit including functional underwear
 - Example sounding operations
 - Rescue operations (rescue of persons)
 - Sealing leaks
 - Moving about in restricted space
 - Moving about in dark rooms
 - Taking off the protective suit and decontamination tips
 - For all CPS types for fire services (with SCBA indoors and outdoors, with forced ventilation and powered filter units) and much more
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- Including theoretical instruction from TESIMAX and the fire trainers
 - Course duration: 1 day (food & drink included)
 - Some TESIMAX PPE will be provided; SCBA is available on site
 - Please ask us for further information
 - Limited number of courses and participants – make sure you register in good time!

HIGHLIGHT: Approaching an operation site wearing CPS and using state-of-the-art TESIMAX sensor systems (video situa-tion imaging, live CPS suit parameter monitoring and use of thermal imaging cameras)

- For dates, please enquire or visit www.tesimax.de
- Please register early

Cost per person €359.00 net *

* Prices are subject to change



REAL-TIME TRAINING (Fire Training Leipzig)

Training Order no. 0800-104

Real-time training (RTT) – training ticket
Real-time training on Leipzig Airport

CHEMICAL PROTECTIVE SUITS (CPS)

- Operations simulation with experienced trainers
- Topics:
 - Putting on the protective suit including functional underwear
 - Example sounding operations
 - Rescue operations (rescue of persons)
 - Sealing leaks
 - Moving about in restricted space
 - Moving about in dark rooms
 - Taking off the protective suit, decontamination tips and much more
- For all CPS types for fire services (with internal and external SCBA, with forced ventilation and powered filter units)
- Including theoretical training by TESIMAX
- Course duration: 1 day
- Courses held twice a year – book early to secure your place!

FIREFIGHTER TURNOUT GEAR

- Fire training – realistic training in fire containers
- The mobile wood-burning fire container provides a realistic training environment for firefighting in buildings, including simulation of flameover and backdraft.
- Flashover, flameover, backdraft

- For dates, please enquire or visit www.tesimax.de
- Please register early

Cost per person €359.00 net *

* Prices are subject to change





Legal notice:

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Safety information regarding technical specifications

This information is based on laboratory tests.
It is intended as a general overview of our materials against chemicals and gasses. In practical situations there are many variable factors, such as temperature, ventilation, exposure time, stability of gasses or liquids, mechanical loads and wettability, which may result in a deviation from the laboratory values.

TESIMAX-Altinger GmbH does not guarantee any results or accept liability of any kind in connection with this information. This publication does not represent a licence and does not aim to infringe on any patents, reg. utility models or trademarks.

* The chemical and physical resistance ratings have been determined according to the 15 reference chemicals to EN 943 and based on our current knowledge. Please contact us for details.

** The thermal resistance ratings (heat and cold) are based on EN 943, EN 469 and on our current knowledge.
We recommend a combination with suitable underclothing. Contact us for further information.

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Washing and cleaning products:
- SAFUREX, Lanadol Avant
- Derval RENT, Lanadol ABAC (Kreussler & Co. GmbH Chemie)



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