MATERIALS

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 chemicals 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

High Performance Plastics

High-performance plastics laminate

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

The fabric combines a low-noise polypropylene non-woven fabric with chemicals resistant high-performance plastic laminates, thereby providing a robust, functional basis for highly effective protection.

Performance PLASTICS

PERFORMANCE TP

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

PERFORMANCE TP
A smart adaptation of the HPP technique described, but with limitations on use with chemicals (e.g. solvents) and temperature range (-30 °C to +70 °C)

Performance TP

MATERIALS

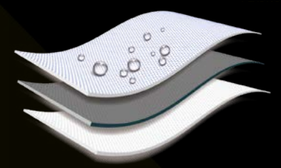
Fabric T/T plus*

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

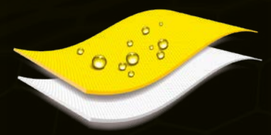
Performance PLASTICS



PE-D fabric*

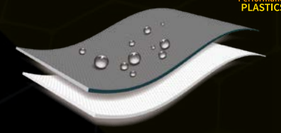
The PE-D fabric (Duoform®) has good electrical properties, carries no electrostatic charge and has a residual potential discharge time that is neither too long nor too short. Protective clothing with seam covering with heat-activated adhesive tape (also Types 4, 5 and 6), with excellent NBC (nuclear, 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

Performance PLASTICS



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 (dual 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, Ostinato 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®

Performance PLASTICS

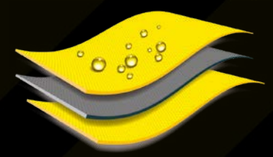
POLYRAN®-L-S fabric*

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, pharmaceutics, clinics or as training suit for firefighters and for decontamination measures
- Colour: yellow (L), red (S) or Nato olive (s)

TP POLYRAN®-L/-S

Performance TP



SYKAN® 1 fabric

The gas- and liquid-tight, chemicals-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 chemicals 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

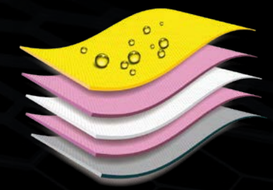
- Exterior colour: Signal colour yellow or orange for increased occupational safety
  Nato-olive for protection and defence

- 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



High Performance Elastomer

High Performance Plastics

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

MATERIALS

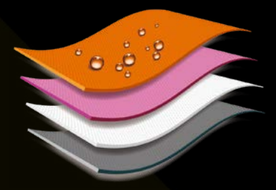
SYKAN® 2 fabric

The gas- and liquid-tight, chemicals-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 chemicals 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

SYKAN® 2



High Performance Elastomer

High Performance Plastics

- 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.

SYKAN® 4 fabric

The gas- and liquid-tight, chemicals-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 chemicals 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

SYKAN® 4

High Performance Elastomer

High Performance Plastics

PARA-ARAMID

- 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.

SILVERFLASH® fabric*

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

The outer fabric is a permanently antistatic heat and radiation shield combined with internal and external chemicals 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

SILVERFLASH®

High Performance Elastomer

High Performance Plastics

PARA-ARAMID

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.

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.

TESIMAX®

The TOP seam

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

HPP
High Performance Plastics

The ULTRA seam

The ULTRA seam for 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 chemicals 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

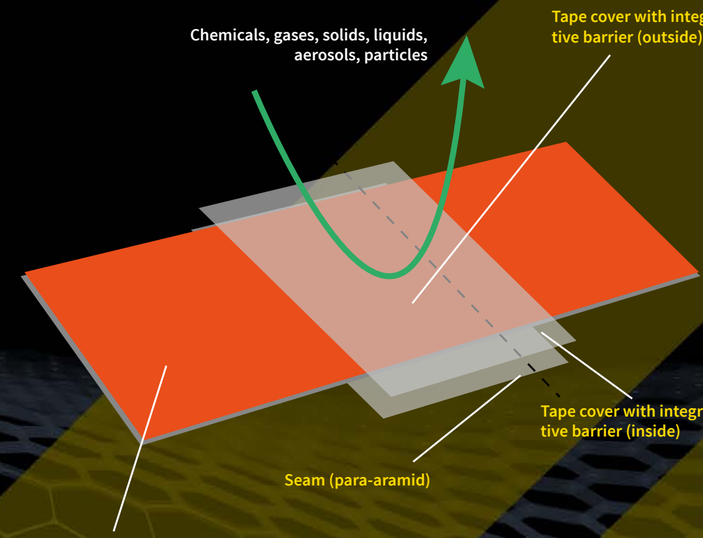
Advantages
- Outer protective barrier that is exceptionally resilient against high and low temperatures, gasses, particles and aggressive chemicals, while retaining outstanding elasticity.
- Facilitates repairs – REAL REUSABLE
- Safety sewing thread made of para-aramid used in all protective suits –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

HPP
High Performance Plastics

HPE
High Performance Elastomer

PARA-ARAMID

POWER PERFORMANCE SEAM TECHNOLOGIES



The ULTRA seam cover

Outside: Seam covered with HPE welded tape with unique, integrated chemicals barrier (HPP film)

Middle: Protective suit base fabric

Inside: Protective suit fabric Seams covered with HPE welded tape

REAL-REUSABLE