



INDUTEX

Garments Lines made with fabric

Puntiform[®] Light

PartiGuard[®] Light

- Sewn garments - cat. 3 type 5 and 6
 - for NC (nuclear and chemical) protection
 - with antistatic properties



NUCLEAR PROTECTION
(EN 1073-2) non ventilated suits



CHEMICAL PROTECTION
(EN ISO 13982-1 type 5)
(EN 13034 type 6)



ANTISTATIC PROPERTIES
(EN 1149-1)

SprayGuard[®] Light

- Garments made with over taped seams or welded seams (**TOPGUARD[®]** Technology)
 - cat. 3 type 4-B, 5 and 6 for NBC (nuclear, biological and chemical) protection
 - with antistatic properties
- Accessories made with over taped seams or welded seams (**TOPGUARD[®]** Technology)
 - cat. 3 type PB [4]-B

CleanGuard[®] Light



NUCLEAR PROTECTION
(EN 1073-2) non ventilated suits
(EN 1073-1) ventilated suits



BIOLOGICAL PROTECTION
(EN 14126)



CHEMICAL PROTECTION
(EN 14605 type 4-B)
(EN ISO 13982-1 type 5)
(EN 13034 type 6)



ANTISTATIC PROPERTIES
(EN 1149)

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Puntiform[®] Light

Data sheet

PHYSICAL PROPERTIES

| Property | | Norm/Method | U.M. | Value | Class |
|-------------------------------------|--------------------------------|---------------------|------------------------|-------------------------|-------|
| Weight | | ISO 4591 | gr/m ² | 60 | n.a.* |
| Abrasion resistance | | EN 530/96 | cycles | 300 | 2 |
| Flex cracking resistance | | EN-ISO 7854/99 (B) | cycles | >100.000 | 6 |
| Trapezoidal tear resistance | MD | EN-ISO 9073-4/99 | N | 25,7 | 2 |
| | XD | MDEN-ISO 9073-4/99 | N | 17,8 | 1 |
| Traction resistance | MD | EN-ISO 13934-1/00 | N | 77 | 2 |
| | XD | EN-ISO 13934-1/00 | N | 58 | 1 |
| Puncture resistance | | EN 863/95 | N | 15,2 | 2 |
| Burst resistance | | EN-ISO 13938-2/01 | KPa | 175 | 3 |
| Stability of heat | ext/ext | ISO 5978/90 | - | No adhesion | n.a.* |
| | ext/int. | ISO 5978/90 | - | | |
| | int./int. | ISO 5978/90 | - | | |
| Surface resistivity | | EN 1149-1/97 | Ω | 1.5 . 10 ⁹ | n.a.* |
| Hydrostatic head | | EN ISO 20811/93 | cm H ₂ O | 224 | n.a.* |
| | | | Pa | 22000 | n.a.* |
| Air permeability | Mean coeff. of variation | ISO 9237/97 | mm/s | ND*** | n.a.* |
| | | | % | ND*** | n.a.* |
| Water vapour transmission rate | | | gr/m ² /24h | >1700 | n.a.* |
| Ignition resistance | | prEN 13274-4/98 (3) | - | Self extinguishing** | n.a.* |
| Seam strength resistance | | EN ISO 13935-2/01 | N | 100 | 3 |
| Over taped seam strength resistance | | EN ISO 13935-2/01 | N | 100 | 3 |

* n.a. : not applicable.

** Self extinguishing. On both sides no auto combustion is pronounced but the formation of hole is observed without dripping.

PROTECTIVE PROPERTIES

Particle release (Helmke Drum Test– IFTH Lyon)

| Micron dimension (µm) | | | | | | | |
|-----------------------|-----|-----|-----|----|---|---|----|
| 0,3 | 0,5 | 0,7 | 1 | 3 | 5 | 7 | 10 |
| 543 | 354 | 348 | 307 | 12 | 2 | 1 | 0 |

Particle penetration (% Filtration - IOM Edinburg)

| Micron dimension (µm) | | | | | |
|-----------------------|-----------|-----------|-----------|-----------|-------|
| 0,35 – 0,5 | 0,5 – 0,6 | 0,6 – 1,5 | 1,5 – 2,0 | 2,0 – 2,5 | > 2,5 |
| 99,9% | 99,9% | 99,9% | 99,9% | 99,9% | 99,9% |

Puntiform[®] Light

Data sheet



Chemical Protection

Permeation resistance EN ISO 6529 (ex. EN 369)

| Chemical n° CAS | | Permeation EN 369 | | Permeation at 480 minutes ($\mu\text{g}/\text{min}/\text{cm}^2$) | Accuracy ($\mu\text{g}/\text{min}/\text{cm}^2$) |
|------------------------------------|-----------|----------------------|-------|--|--|
| | | min | Class | | |
| Hydrochloric acid 30% | 7647-01-0 | > 480 | 6 | <0,001 | 0,001 |
| Phosphoric acid 50% | 7664-38-2 | > 480 | 6 | < 0,001 | 0,001 |
| Sodium hydroxide 40% | 1310-73-2 | > 480 | 6 | <0,001 | 0,001 |
| Sodium hypochlorite (12% chlorine) | 7681-52-9 | 19 | 1 | 15,3 | 0,01 |
| Sulphuric acid 30% | 7664-93-9 | 138 | 4 | 1,41 | 0,001 |

Liquid chemical penetration resistance (EN 368)

| Chemical | Penetration % | Class | Repellence % | Class |
|----------------------|---------------|--------|--------------|--------|
| Butan-1-ol | 0,00 | 3 of 3 | 84,7 | 1 of 3 |
| p-xylene | 0,00 | 3 of 3 | 82,9 | 1 of 3 |
| Sodium hydroxide 10% | 0,00 | 3 of 3 | 91,00 | 2 of 3 |
| Sulphuric acid 30% | 0,00 | 3 of 3 | 95,00 | 3 of 3 |



Biological Protection (EN 14126:2003)

| Test | Value | Class |
|---|----------------|--------|
| Synthetic blood under hydrostatic pressure | 20 KPa | 6 of 6 |
| Blood born infective agents (Phi-X 174 bacteriophage) | 20 KPa | 6 of 6 |
| Penetration of infecting agents by contact | > 75 min. | 6 of 6 |
| Biologically contaminated aerosols | ∞ Log R | 3 of 3 |
| Biologically contaminated powders | 0 Log u.f.c | 3 of 3 |

NB To guarantee the biological protection all garments must be made with over taped seams or welded seams.



Nuclear Protection (EN 1073-2)

Garments made with raw material *Puntiform Light*[®] passed all the tests included in EN 1073-2 norm for the protection against nuclear contaminated particles.



Sewn garments with NC (nuclear and chemical) protection made with raw material *Puntiform Light*[®] in white colour



NUCLEAR PROTECTION
(EN 1073-2) non ventilated suits



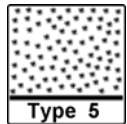
CHEMICAL PROTECTION
(EN ISO 13982-1 type 5)
(EN 13034 type 6)



ANTISTATIC PROPERTIES
(EN 1149-1)

AVAILABLES MODELS

CATEGORY 3 TYPE 5 AND 6 – All the garments are in conformity with the following norms:



- EN 340 Protection Garments: General requirements
- EN ISO 13982 Particle tight chemical protective garments (Type 5)
- EN 13034 Liquid limited splash tight chemical protective garments (Type 6)

- OVERALL with short collar
- OVERALL with hood
- OVERALL with hood and incorporated boots
- OVERALL TB transpirant back
- SPECIAL GARMENTS on customer need

CATEGORY 1 – All the garments are in conformity to Directive 89/696/CEE art. 8 paragraph 3

- GOWN with short collar with buttons o with zip
- GOWN with mao collar with buttons o with zip
- OTHER ACCESSORIES on customer need



MOST COMMON WORKING AREAS

- Cement work
- Mineral and glass fibres
- Building industry
- Fish industry
- Pharmaceutical industry
- Graphical companies
- Maintenance work
- Metal work
- Mining
- Production, treatment and shipment of chemicals
- Industrial cleaning
- Wood powder, etc..
- Surface refinishing
- Army
- Visitors and company inspections
- Transformation, preparation and store of food products
- Nuclear power plant



Garments made with over taped seams or welded seams (**TOPGUARD**® Technology) with NBC (nuclear, biological and chemical) protection made with raw material **Puntiform**® in white colour



NUCLEAR PROTECTION
(EN 1073-2) non ventilated suits
(EN 1073-1) ventilated suits



BIOLOGICAL PROTECTION
(EN 14126)



CHEMICAL PROTECTION
(EN 14605 type 4-B)
(EN ISO 13982-1 type 5)
(EN 13034 type 6)



ANTISTATIC PROPERTIES
(EN 1149)

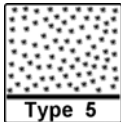
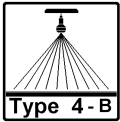
Garments have antistatic properties following these norms:

- Surface resistance and volume resistance – EN 1149-1 Par. 5-4-2 e 5-4-3 – EN 1149-2 Rv Par. 7
- Triboelectric compatibility – EN 1149-1 Par. 4.1-4.2 App. 1-2-3 – EN 1149.3 Par. 4.2-4.2.1 – EIA IS 5 A
- Time decay of charge – EN 1149-3 Par. 3.5-3.6 –pr EN 1149-5 – EIA IS 541 A STD Fed. TM N° 101 C Method 4046/1
- Electric safety ground resistance of model of the human body – CEI 64-8/4 Par. 6.12.5
- Time decay of the charge on a model of the human body – IEC 61340-4-1 TR/2

Sprayguard® Light garments have good electrical characteristics and does not generate electrostatic charges. The time taken to decline for the potential residue is neither too fast or too slow.

AVAILABLES MODELS

CATEGORY 3 TYPE 4-B (also 5 and 6) – All the garments are in conformity with the following norms:



- EN 340 Protection Garments: General requirements
- EN 14605 Liquid aerosols tight chemical protective garments (Type 4)
- EN ISO 13982 Particle tight chemical protective garments (Type 5)
- EN 13034 Liquid limited splash tight chemical protective garments (Type 6)

- OVERALL with hood
- OVERALL with hood and incorporated boots
- SPECIAL GARMENTS on customer need

CATEGORY 3 TYPE PB[4]-B - ACCESSORIES

- GOWN with short collar with buttons o with zip
- GOWN with mao collar with buttons o with zip
- GOWN rear entry
- JACKET + TROUSER
- HOOD
- APRON
- SLEEVES
- BOOTS with pvc and antislid sole
- OTHER ACCESSORIES on customer need





MOST COMMON WORKING AREAS

- Medical applications, biomedical research, coroners
- Terrain decontamination
- Pest control
- Lead elimination processes
- Mineral fibres (asbestos) and glass fibres
- Emergency interventions after accidents with loss of chemicals
- Pharmaceutical and petrochemical companies
- Maintenance work
- Mining
- Production, treatment and shipment of chemicals
- Industrial cleaning
- Wood powder, etc..
- Surface refinishing, etc...
- Army, scientific police, crime lab
- Waste treatment
- Water treatment
- Painting and refinishing operation
- Transformation, preparation and store of food products
- Nuclear power plant
- Veterinary services



Garments made with over taped seams or welded s**TOPGUARD** Technology) with NBC (nuclear, biological and chemical) protection made with raw material *Puntiform Light*[®] white colour



NUCLEAR PROTECTION
(EN 1073-2) non ventilated suits
(EN 1073-1) ventilated suits



BIOLOGICAL PROTECTION
(EN 14126)



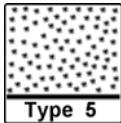
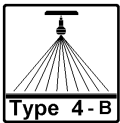
CHEMICAL PROTECTION
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ANTISTATIC PROPERTIES
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AVAILABLES MODELS

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- EN 13034 Liquid limited splash tight chemical protective garments (Type 6)

- CLEANGUARD STERIL KIT (overall + hood + boots)
- ACCESSORIE STERILS
- SPECIAL KITS on customer need - STERIL



MOST COMMON WORKING AREAS

- Pharmaceutical companies
- Clean Rooms (workers, maintenance team and visitors)
- Research labs, development and production in electronics and pharmaceutical
- Transformation, preparation and store of food products
- Treatment and production of pharmaceutical products and vaccines
- Medical applications, biomedical research
- Coroners