



INDUTEX

Garments Lines made with fabric

Duoform®

JetGuard®

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



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



BIOLOGICAL PROTECTION
(EN 14126)



CHEMICAL PROTECTION
(EN 14605 type 3-B)
(EN 14605 type 4)
(EN ISO 13982-1 type 5)
(EN 13034 type 6)



ANTISTATIC PROPERTIES
(EN 1149)

Jetguard® 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.

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Duoform[®]

Data sheet

PHYSICAL PROPERTIES

Property		Norm/Method	U.M.	Value	Class
Weight		ISO 4591	gr/m ²	105	n.a.*
Abrasion resistance		EN 530/96	cycles	11.500	6
Flex cracking resistance		EN-ISO 7854/99 (B)	cycles	>100.000	6
Trapezoidal tear resistance	MD	EN-ISO 9073-4/99	N	21,0	2
	XD	EN-ISO 9073-4/99	N	23,0	2
Traction resistance	MD	EN-ISO 13934-1/00	N	83	2
	XD	EN-ISO 13934-1/00	N	110	3
Puncture resistance		EN 863/95	N	27,1	2
Burst resistance		EN-ISO 13938-2/01	KPa	219	3
Stability of heat	ext/ext	ISO 5978/90	-	Slight adhesion	n.a.*
	ext/int.	ISO 5978/90	-	No adhesion	n.a.*
	int./int.	ISO 5978/90	-	No adhesion	n.a.*
Surface resistivity		EN 1149-1/97	Ω	conform	n.a.*
Hydrostatic head		EN ISO 20811/93	cm H ₂ O	200	n.a.*
			Pa	19.600	n.a.*
Ignition resistance		prEN 13274-4/98 (3)	-	Self extinguishing**	n.a.*
Over taped seam strength resistance		EN ISO 13935-2/01	N	130	4

* 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 penetration

Total barrier against any particle dimension



Chemical Protection

Permeation resistance EN ISO 6529 (ex. EN 369)

Chemical n° CAS		Permeation EN 369		Permeation at 480 minutes (µg/min/cm ²)	Accuracy (µg/min/cm ²)
		min	Class		
Acetic acid (glacial)	64-19-7	>480	6	0,02	0,01
Acetone	67-64-1	2	0	6,0	1,0
Acetonitrile	75-05-8	>480	6	0,06	0,01
Acrylic acid	79-10-7	>480	6	0,003	0,001

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	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		
Acrylonitrile	107-13-1	>480	6	<0,04	0,04
Ammonium hydroxide (30%)	1336-21-6	>480	6	0,002	0,001
Aniline	62-53-3	465	5	6,1	0,8
Benzonitrile	100-47-0	>480	6	0,7	0,1
Bromine	7726-95-6	>480	6	0,03	0,001
Butanol n-	71-36-3	>480	6	<0,001	0,001
Butyraldehyde n-	123-72-8	>480	6	<0,1	0,1
Carbon disulphide	75-15-0	>480	6	<0,001	0,001
Chlorine	7782-50-5	>480	6	<0,001	0,001
Chloroform	67-66-3	81	3	7,8	0,8
Dichloromethane	75-09-2	>480	6	<1,0	1,0
Diethylamine	109-89-7	>480	6	<0,001	0,001
EPO 3 Harder and Epopox AF bi component glue	-	>480	6	0,02	0,001
Ethylene glycol	107-21-1	2,5	0	6,3	0,6
Formaldehyde (10%)	50-00-0	>480	6	<0,1	0,1
Formaldehyde (37%)	50-00-0	>480	6	<0,1	0,1
Formic acid (96%)	64-18-6	>480	6	0,03	0,03
Gluteraldehyde (5% in water)	111-30-8	>480	6	<1,5	1,5
Hexane n-	110-54-3	>480	6	0,01	0,01
Hydrochloric acid (37%)	7647-01-0	>480	6	0,008	0,001
Hydrofluoric acid (50%)	7664-39-3	>480	6	0,002	0,001
Hydrofluoric acid (70%)	7664-39-3	>480	6	0,024	0,001
Hydrogen peroxide (30%)	7722-84-1	210	4	1,73	0,64
Hydrogen peroxide (70%)	7722-84-1	8	0	18	1
Idrazine monohydrate	7803-57-8	>480	6	0,234	0,001
Iodine	7553-56-2	>480	6	0,02	0,01
Mercuric chloride (sat'd)	7487-94-7	>480	6	0,66	0,03
Mercury	7439-97-6	>480	6	<0,001	0,001
Methanol	67-56-1	>480	6	<0,1	0,1
Methyl isocyanate	624-83-9	6	0	39	1
Nitric acid (70%)	7697-37-2	>480	6	<0,001	0,001
Nitrochlorobenzene o-	88-73-3	>480	6	<0,001	0,001
Nitrochlorobenzene p-	100-00-5	>480	6	<0,001	0,001
Nitrotoluene p-	99-99-0	>480	6	0,3	0,1
Oleum (40% SO3 free 40%)	8014-95-7	>480	6	0,425	0,001
Petrol, leaded	86290-81-5	>480	6	<0,1	0,1
Phenol (85%)	108-95-2	>480	6	<0,5	0,5
Phosphoric acid (85%)	7664-38-2	>480	6	<0,001	0,001
Polychlorinated biphenyl (PCB) in transformer oil	11097-69-1	>480	6	<0,1	0,1
Potassium chromate (sat'd)	7789-00-6	>480	6	0,041	0,001
Potassium cyanide (10%)	151-50-8	>480	6	<0,001	0,001
Sodium hydroxide (50%)	1310-73-2	>480	6	<0,001	0,001
Sodium hydroxide (conc)	1310-73-2	>480	6	0,002	0,001
Sodium hypochlorite (5.25% chlorine)	7681-52-9	>480	6	<0,001	0,001
Styrene Oxide	96-09-3	>480	6	<0,1	0,1
Sulphuric acid (16%)	7664-93-9	>480	6	<0,001	0,001
Sulphuric acid (50%)	7664-93-9	>480	6	<0,001	0,001
Sulphuric acid (93%)	7664-93-9	>480	6	<0,001	0,001
Sulphuric acid (98%)	7664-93-9	>480	6	<0,001	0,001

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Chemical n° CAS		Permeation EN 369		Permeation at 480 minutes (µg/min/cm ²)	Accuracy (µg/min/cm ²)
		min	Class		
Sulphur dioxide	7446-09-5	>480	6	<0,001	0,001
Tetracloroethylene 1,1,2,2-	127-18-4	>480	6	0,04	0,001
Tetrahydrofuran	109-99-9	>480	6	<0,1	0,1
Toluene-2,4-diisocyanate	584-84-9	>480	6	<0,001	0,001
Toluidine o-	95-53-4	>480	6	0,5	0,005
Trifluoroethanol 2,2,2-	75-89-8	>480	6	0,024	0,001



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 welded over taped seams.



Nuclear Protection (EN 1073-2)

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



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



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(EN 1073-1) ventilated suits



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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

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AVAILABLES MODELS

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



- EN 340 Protection Garments: General requirements
- EN 14605 Liquid jet tight chemical protective garments (Type 3)
- 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
- VENTILATED SUITS A.M. and A.R.
- **Certified also for breathing way protection**
- SPECIAL GARMENTS on customer need

CATEGORY 3 TYPE PB[3]-B - ACCESSORIES

- GOWN rear entry
- JACKET + TROUSER
- HOOD
- APRON
- SLEEVES
- BOOTS with pvc and antislid sole
- OTHER ACCESSORIES on customer need





MOST COMMON WORKING AREAS

- Pest control
- Emergency interventions after accidents with loss of chemicals
- Petrochemical companies
- Metal works
- Mining
- Production, treatment and shipment of chemicals
- Army
- Waste treatment
- Water treatment
- Plating works
- PCB removal