Technical Data Sheet

DuPont™ Tyvek® IsoClean® , *Model IC 668 B WH MS*

PB[6] EN 14126 Option MS SAL



Technical Data Sheet

DuPont Tyvek® IsoClean® hood with ties model IC 668 B WH MS.
Clean-processed and gamma-sterilized. Bound internal seams. Bound hood opening. Full face opening. Ties with loops. Aseptically folded. White.

Certifications

- Certified according to Regulation (EU) 2016/425
- Partial body chemical protective clothing, Category III, Type PB [6-B]
- EN 14126 (barrier to infective agents)

Packaging(Quantity/Box)

100 per box, individually packed. Subgrouped by 20 in an outer bag. 2 polyethylene liners. Cardboard box.

Product Size	Article Number	Additional info
00	D15466063	One Size

Reference Number: IC0668BWHMS

PHYSICAL PROPERTIES

physPropDesc	testMthdDesc	rsltMetric	enClass
Abrasion Resistance [7]	EN 530 Method 2	>10 cycles	1 of 6 [1]
Basis Weight	DIN EN ISO 536	45 g/m^2	N/A
Colour	N/A	White	N/A
Exposure to high Temperature	N/A	Melting point ~135 °C	N/A
Flex Cracking Resistance [7]	EN ISO 7854 Method B	>100000 cycles	6 of 6 [1]
Puncture Resistance	EN 863	>5 N	1 of 6 [1]
Resistance to Water Penetration	DIN EN 20811	7 kPa	N/A
Surface Resistance at RH 25%, inside [7]	EN 1149-1	2^{10} Ohm	N/A
Tensile Strength (MD)	DIN EN ISO 13934-1	>30 N	1 of 6 [1]
Tensile Strength (XD)	DIN EN ISO 13934-1	>30 N	1 of 6 [1]
Thickness	DIN EN ISO 534	185 µm	N/A
Trapezoidal Tear Resistance (MD)	EN ISO 9073-4	>10 N	1 of 6 [1]
Trapezoidal Tear Resistance (XD)	EN ISO 9073-4	>10 N	1 of 6 [1]

1 According to EN 14325 **2** According to EN 14126 **3** According to EN 1073-2 **4** According to EN 14116 **12** According to EN 11612 **5** Front Tyvek ® / Back **6** Based on test according to ASTM D-572 **7** See Instructions for Use for further information, limitations and warnings **>** Larger than **<** Smaller than **N/A** Not Applicable **STD DEV** Standard Deviation

GARMENT PERFORMANCE

Property	Test Method	Result	EN Class
Seam Strength	EN ISO 13935-2	>30 N	1 of 6 [1]

1 According to EN 14325 **3** According to EN 1073-2 **12** According to EN 11612 **13** According to EN 11611 **5** Front Tyvek ® / Back **6** Based on test according to ASTM D-572 **7** See Instructions for Use for further information, limitations and warnings **11** Based on the average of 10 suits, 3 activities, 3 probes **>** Larger than **<** Smaller than **N/A** Not Applicable ***** Based on lowest single value

COMFORT

Property	Test Method	Result	EN Class
Air Permeability (Gurley method)	ISO 5636-5	Yes	N/A
Air Permeability (Gurley method)	ISO 5636-5	4 s	N/A
Thermal Resistance, Rct	EN 31092/ISO 11092	$10*10^{-3}$ m^2 *K/W	N/A
Thermal Resistance, clo value	EN 31092/ISO 11092	0.065 clo	N/A
Water Vapour Resistance, Ret	EN 31092/ISO 11092	6.8 m^2 *Pa/W	N/A

2 According to EN 14126 **5** Front Tyvek ® / Back **>** Larger than **<** Smaller than **N/A** Not Applicable

PENETRATION AND REPELLENCY

Property	Test Method	Result	EN Class
Repellency to Liquids, Sodium Hydroxide (10%)	EN ISO 6530	>90 %	2 of 3 [1]
Repellency to Liquids, Sulphuric Acid (30%)	EN ISO 6530	>95 %	3 of 3 [1]
Resistance to Penetration by Liquids, Sodium Hydroxide (10%)	EN ISO 6530	<5 %	2 of 3 [1]
Resistance to Penetration by Liquids, Sulphuric Acid (30%)	EN ISO 6530	<1 %	3 of 3 [1]

1 According to EN 14325 **>** Larger than **<** Smaller than

BIOLOGICAL BARRIER

Property	Test Method	Result	EN Class
Resistance to Penetration by Biologically Contaminated Aerosols	ISO/DIS 22611	Pass	1 of 3 [2]
Resistance to Penetration by Blood and Body Fluids using Synthetic Blood	ISO 16603	Pass	3 of 6 [2]
Resistance to Penetration by Blood-borne Pathogens using Bacteriophage Phi-X174	ISO 16604 Procedure C	No classification	No classification [2]
Resistance to Penetration by Contaminated Liquids	EN ISO 22610	Pass	1 of 6 [2]
Resistance to Penetration by Contaminated Solid Particles	ISO 22612	Pass	1 of 3 [2]

2 According to EN 14126 **>** Larger than **<** Smaller than

CLEANILESS

Property	Test Method	Result	EN Class
Bacterial Filtration Efficiency (3 µm)	ASTM F2101	98.4 % ± 0.9 % STD DEV	N/A
Particle Shedding (Helmke Drum)	IEST-RP-CC003.4.	Category I	N/A

5 Front Tyvek ® / Back **>** Larger than **<** Smaller than **N/A** Not Applicable **STD DEV** Standard Deviation

Permeation Data for Tyvek® IsoClean®

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum Time 480	ISO 150
Carboplatin (10 mg/ml)	Liquid	441575-94-4	>240	>240	>240	5	<0.001	0.001		
Carmustine (3.3 mg/ml, 10 % Ethanol)	Liquid	154-93-8	imm	imm	>240	5	<0.3	0.001		
Cisplatin (1 mg/ml)	Liquid	15663-27-1	>240	>240	>240	5	<0.001	0.001		
Cyclo phosphamide (20 mg/ml)	Liquid	50-18-0	>240	>240	>240	5	<0.008	0.008		
Doxorubicin HCl (2 mg/ml)	Liquid	25136-40-9	>240	>240	>240	5	<0.001	0.001		
Etoposide (Toposar®, Teva) (20 mg/ml, 33.2 % (v/v) Ethanol)	Liquid	33419-42-0	>240	>240	>240	5	<0.01	<0.01		
Fluorouracil, 5- (50 mg/ml)	Liquid	51-21-8	imm	imm	imm		na	0.001		
Gemcitabine (38 mg/ml)	Liquid	95058-81-4	imm	>60	>240	5	<0.4	0.005		
Ifosfamide (50 mg/ml)	Liquid	3778-73-2	>240	>240	>240	5	<0.009	0.009		
Oxaliplatin (5 mg/ml)	Liquid	63121-00-6	imm	imm	imm		na	0.001		
Paclitaxel (Hospira) (6 mg/ml, 49.7 % (v/v) Ethanol)	Liquid	33069-62-4	>240	>240	>240	5	<0.01	<0.01		
Thiotepa (10 mg/ml)	Liquid	52-24-4	imm	imm	imm		na	0.001		

BT Act (Actual) Breakthrough time at MDPR [mins] **BT 0.1** Normalized breakthrough time at 0.1 µg/cm²/min [mins] **BT 1.0** Normalized breakthrough time at 1.0 µg/cm²/min [mins] **EN** Classification according to EN 14325 **SSPR** Steady state permeation rate [µg/cm²/min] **MDPR** Minimum detectable permeation rate [µg/cm²/min] **CUM 480** Cumulative permeation mass after 480 mins [µg/cm²] **Time 150** Time to reach cumulative permeation mass of 150 µg/cm² [mins] **ISO** Classification according to ISO 16602 **CAS** Chemical abstracts service registry number **mins** Minutes **>** Larger than **<** Smaller than **imm** Immediate (< 4 min) **nm** Not tested **sat** Saturated solution **N/A** Not Applicable ***** Based on lowest single value **na** Not attained **8** Actual breakthrough time; normalized breakthrough time is not available

Important Note

The permeation data published have been generated for DuPont by independent accredited testing laboratories according to the test method applicable at that time (EN ISO 6529 (method A and B), ASTM F739, ASTM F1383, ASTM D6978, EN369, EN 374-3)
The data is typically the average of three fabrics samples tested.
All chemicals have been tested at an assay of greater than 95 (w/w) % unless otherwise stated.
The tests were performed between 20 °C and 27°C and at environmental pressure unless otherwise stated.
A different temperature may have significant influence on the breakthrough time.
Permeation typically increases with temperature.

Cumulative permeation data have been measured or have been calculated based on minimum detectable permeation rate.
Cytostatic drugs testing has been performed at a test temperature of 27°C according to ASTM D6978 or ISO 6529 with the additional requirement of reporting a normalized breakthrough time at 0.01 µg/cm²/min.
Chemical warfare agents (Lewisite, Sarin, Soman, Mustard, Tabun and VX Nerve Agent) have been tested according to MIL-STD-282 at 22°C or according to FINABEL 0.7 at 37°C.
Permeation data for Tyvek® is applicable to white Tyvek® 500 and Tyvek® 600 only and is not applicable for other Tyvek® styles or colours.
Permeation data are usually measured for single chemicals. The permeation characteristics of mixtures can often deviate considerably from the behaviour of the individual chemicals.

The permeation data for gloves published have been generated according to ASTM F739 and to ASTM F1383.
The degradation data for gloves published have been generated based on a gravimetric method.
This degradation testing exposes one side of the glove material to the test chemical for four hours. The percent weight change after exposure is measured at four time intervals: 5, 30, 60 and 240 minutes.

Degradation Ratings:
- E: EXCELLENT (0-10% Weight Change)
- G: GOOD (11-20% Weight Change)
- F: FAIR (21-30% Weight Change)
- P: POOR (31-90% Weight Change)
- NR: NOT RECOMMENDED (Above 50% Weight Change)
- NT: NOT TESTED

Degradation is the physical change in a material after chemical exposure. Typical observable effects may be swelling, wrinkling, deterioration, or delamination. Strength loss may also occur.

- A: The garment does not protect against ionizing radiation.
- A: This garment and/or fabric are not flame resistant and should not be used around heat, open flame, sparks or in potentially flammable environments.

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Please use the permeation data provided as a part of the risk assessment to assist with the selection of a protective fabric, garment, glove or accessory suitable for your application.
Breakthrough time is not the same as safe wear time. Breakthrough times are indicative of the barrier performance, but results can vary between the test methods and laboratories. Breakthrough time alone is insufficient to determine how long a garment may be worn once the garment has been contaminated. Safe user wear time may be longer or shorter than the breakthrough time depending on the permeation behaviour of the substance, the toxicity of the substance, working conditions and the exposure conditions (e.g. temperature, pressure, concentration, physical state).

Latest Update Permeation Data: 15/03/2019
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