

DuPont™ Tyvek® 100 EC , TYCHF5SWHEC



EN 1149-5



EN 14126



Technical Data Sheet

DuPont™ Tyvek® 100 EC. Hooded coverall. Ergonomic-protective design. Stitched external seams. Elasticated wrists, ankles and face. Elasticated waist (glued-in). Tyvek® zipper and flap. White.

Standards

- EN 14126 (barrier to infective agents)
- Antistatic treatment (EN 1149-5) - on both sides

Packaging(Quantity/Box)

100 per box, individually packed/100 per box

Product Size	Article Number
MD	D15551778
LG	D15551779
XL	D15551780
2X	D15551781

Full Part Number: TYCHF5SWHEC

PHYSICAL PROPERTIES

Property	Test Method	Typical Result	EN
Abrasion Resistance	EN 530 Method 2	>100 cycles	2/6 ¹
Basis Weight	DIN EN ISO 536	41.5 g/m ²	N/A
Colour	N/A	White	N/A
Exposure to high Temperature	N/A	Melting point ~135 °C	N/A
Exposure to low Temperature	N/A	Flexibility retained down to -73 °C	N/A
Flex Cracking Resistance	EN ISO 7854 Method B	>100000 cycles	6/6 ¹
Flex Cracking Resistance at -30°C	EN ISO 7854 Method B	>4000 cycles	N/A
Puncture Resistance	EN 863	>10 N	2/6 ¹
Resistance to Water Penetration	DIN EN 20811	>10 kPa	N/A
Surface Resistance at RH 25%, inside	EN 1149-1	< 2,5 • 10 ⁹ Ohm	N/A
Surface Resistance at RH 25%, outside	EN 1149-1	< 2,5 • 10 ⁹ Ohm	N/A
Tensile Strength (MD)	DIN EN ISO 13934-1	>60 N	2/6 ¹
Tensile Strength (XD)	DIN EN ISO 13934-1	>60 N	2/6 ¹
Trapezoidal Tear Resistance (MD)	EN ISO 9073-4	>10 N	1/6 ¹
Trapezoidal Tear Resistance (XD)	EN ISO 9073-4	>10 N	1/6 ¹

¹ According to EN 14325 > Larger than < Smaller than N/A NotApplicable

COMFORT

Property	Test Method	Typical Result	EN
Air Permeability (Gurley method)	ISO 5636-5	< 45 s	N/A
Air Permeability (Gurley method)	ISO 5636-5	Yes	N/A
Thermal Resistance, R _{ct}	EN 31092/ISO 11092	16.3*10 ⁻³ m ² *K/W	N/A
Thermal Resistance, clo value	EN 31092/ISO 11092	0.105 clo	N/A
Water Vapour Resistance, Ret	EN 31092/ISO 11092	11.3 m ² *Pa/W	N/A

< Smaller than N/A Not Applicable

PENETRATION AND REPELLENCY

Property	Test Method	Typical Result	EN
Repellency to Liquids, Sodium Hydroxide (10%)	EN ISO 6530	>95 %	3/3 ¹
Repellency to Liquids, Sulphuric Acid (30%)	EN ISO 6530	>95 %	3/3 ¹
Resistance to Penetration by Liquids, Sodium Hydroxide (10%)	EN ISO 6530	<1 %	3/3 ¹
Resistance to Penetration by Liquids, Sulphuric Acid (30%)	EN ISO 6530	<1 %	3/3 ¹

¹ According to EN 14325 > Larger than < Smaller than

BIOLOGICAL BARRIER

Property	Test Method	Typical Result	EN
Resistance to Penetration by Biologically Contaminated Aerosols	ISO/DIS 22611	Pass	1/3 ²
Resistance to Penetration by Blood and Body Fluids using Synthetic Blood	ISO 16603	3,5 kPa	3/6 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	≤ 15 min	1/6 ²
Resistance to Penetration by Contaminated Solid Particles	ISO 22612	Pass	1/3 ²

² According to EN 14126 > Larger than < Smaller than

CLEANILESS

Property	Test Method	Typical Result	EN
Dry Linting Propensity, inside	BS 6909	128 Average particle count/17 liters of air	N/A
Dry Linting Propensity, outside	BS 6909	56 Average particle count/17 liters of air	N/A

N/A NotApplicable

Permeation Data for Tyvek® 100 EC

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR
Acetic acid (30%)	Liquid	64-19-7	imm	imm	imm		13.5	0.001
Ammonium hydroxide (16%)	Liquid	1336-21-6	imm	imm	imm		20.3	0.005
Ammonium hydroxide (28% - 30%)	Liquid	1336-21-6	imm	imm	imm		16.7	0.014
Carboplatin (10 mg/ml)	Liquid	41575-94-4	>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
Caustic ammonia (16%)	Liquid	1336-21-6	imm	imm	imm		20.3	0.005
Caustic ammonia (28% - 30%)	Liquid	1336-21-6	imm	imm	imm		16.7	0.014
Caustic soda (10%)	Liquid	1310-73-2	>240	>480	>480	6	<0.005	0.005
Caustic soda (40%)	Liquid	1310-73-2	imm	>30	>240	5	<0.005	0.005
Caustic soda (50%)	Liquid	1310-73-2	imm	>30	>240	6	0.85	0.01
Caustic soda (>95%, solid)	Solid	1310-73-2	>480	>480	>480	6	<0.01	0.01
Cisplatin (1 mg/ml)	Liquid	15663-27-1	>240	>240	>240	5	<0.0002	0.0002
Cyclo phosphamide (20 mg/ml)	Liquid	50-18-0	>240	>240	>240	5	<0.002	0.002
Dimethyl sulfate	Liquid	77-78-1	imm	imm	imm		>160	0.02
Doxorubicin HCl (2 mg/ml)	Liquid	25136-40-9	>240	>240	>240	5	<0.003	0.003
Ethane 1,2-diol	Liquid	107-21-1	imm	imm	imm		6.6	0.002
Ethylene glycol	Liquid	107-21-1	imm	imm	imm		6.6	0.002
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	>30	2	na	0.001
Formic acid (30%)	Liquid	64-18-6	imm	imm	imm		nm	0.001
Ganciclovir (3 mg/ml)	Liquid	82410-32-0	>240	>240	>240	5	<0.005	0.005
Gemcitabine (38 mg/ml)	Liquid	95058-81-4	imm	>60	>240	5	<0.4	0.005
Glycerine	Liquid	56-81-5	>240	>480	>480	6	0.03	0.01
Glycerol	Liquid	56-81-5	>240	>480	>480	6	0.03	0.01
Glycol alcohol	Liquid	107-21-1	imm	imm	imm		6.6	0.002
Hydrochloric acid (16%)	Liquid	7647-01-0	imm	imm	imm		na	0.05
Hydrochloric acid (32%)	Liquid	7647-01-0	imm	imm	imm		na	0.05
Hydrogen peroxide (10%)	Liquid	7722-84-1	>10	>10	>480	6	<0.01	0.01
Hydrogen peroxide (30%)	Liquid	7722-84-1	imm	imm	imm		>0.11	0.04
Ifosfamide (50 mg/ml)	Liquid	3778-73-2	imm	imm	>240	5	<0.5	0.003

BTAct (Actual) Breakthrough time at MDPR [mins] BT0.1 Normalized breakthrough time at 0.1 µg/cm²/min [mins] BT1.0 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] CAS Chemical abstracts service registry number min Minute > Larger than < Smaller than imm Immediate (< 10 min) nm Not tested sat Saturated solution N/A Not Applicable na Not attained

Permeation Data for Tyvek® 100 EC

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR
Irinotecan (20 mg/ml)	Liquid	100286-90-6	imm	>240	>240	5	<0.1	0.0028
Methotrexate (25 mg/ml, 0.1 N NaOH)	Liquid	59-05-2	>240	>240	>240	5	<0.001	0.001
Mitomycin (0.5 mg/ml)	Liquid	50-07-7	>240	>240	>240	5	<0.0009	0.0009
Nicotine (9 mg/ml)	Liquid	54-11-5	>480	>480	>480	6	<0.08	0.08
Nitric acid (10%)	Liquid	7697-37-2	>60	>120	>480	6	na	0.05
Nitric acid (30%)	Liquid	7697-37-2	imm	imm	imm		4.6	0.001
Oxaliplatin (5 mg/ml)	Liquid	63121-00-6	imm	imm	imm		na	0.006
Paclitaxel (Hospira) (6 mg/ml, 49.7 % (v/v) Ethanol)	Liquid	33069-62-4	>240	>240	>240	5	<0.01	<0.01
Phosphoric acid (50%)	Liquid	7664-38-2	>480	>480	>480	6	<0.05	0.05
Potassium chromate (sat)	Liquid	7789-00-6	>480	>480	>480	6	<0.005	0.005
Potassium hydroxide (40%)	Liquid	1310-58-3	imm	imm	>30	2	0.7	0.001
Propane -1,2,3-triol	Liquid	56-81-5	>240	>480	>480	6	0.03	0.01
Sodium acetate (sat)	Liquid	127-09-3	imm	>480	>480	6	<0.1	0.05
Sodium chloride (9 g/l)	Liquid	7647-14-5	>240	>240	>240	5	<0.02	0.02
Sodium hydroxide (10%)	Liquid	1310-73-2	>240	>480	>480	6	<0.005	0.005
Sodium hydroxide (40%)	Liquid	1310-73-2	imm	>30	>240	5	<0.005	0.005
Sodium hydroxide (50%)	Liquid	1310-73-2	imm	>30	>240	6	0.85	0.01
Sodium hydroxide (>95%, solid)	Solid	1310-73-2	>480	>480	>480	6	<0.01	0.01
Sodium hypochlorite (10-15 % active chlorine)	Liquid	7681-52-9	>240	>240	>480	6	<0.6	0.05
Sodium hypochlorite (5.25-6%)	Liquid	7681-52-9	>480	>480	>480	6	<0.025	0.025
Sulfuric acid (18%)	Liquid	7664-93-9	>240	>240	>480	6	<0.05	0.05
Sulfuric acid (30%)	Liquid	7664-93-9	>10	>240	>240	5	<0.05	0.05
Sulfuric acid (50%)	Liquid	7664-93-9	imm	>30	>60	3	38	0.01
Sulfuric acid dimethyl ester	Liquid	77-78-1	imm	imm	imm		>160	0.02
Thiotepa (10 mg/ml)	Liquid	52-24-4	imm	imm	imm		na	0.001
Vincristine sulfate (1 mg/ml)	Liquid	2068-78-2	>240	>240	>240	6	<0.001	0.001
Vinorelbine (0.1 mg/ml)	Liquid	71486-22-1	>240	>240	>240	6	<0.0209	0.00209

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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.

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.

Permeation data for Tyvek® is applicable to white Tyvek® 100, 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.

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: 5/5/2020

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The footnotes can be found on the SafeSPEC® website.

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