







PRODUCT INFORMATION

DuPont™ Tychem® 2000 C Apron model PA30L0. Shin-length. Neck and waist ties. Yellow.

ATTRIBUTES	
Full Part Number	TCPA30TYL00
Fabric/Materials	Tychem® 2000 C
Design	Apron with ties
Seam	No seams
Color	Yellow
Sizes	0
Quantity/Box	25 per box, bulk packed.

FEATURES

- Certified according to Regulation (EU) 2016/425
- Partial body chemical protective clothing, Category III, Type PB [3-B]
- EN 14126 (barrier to infective agents)
- Antistatic treatment (EN 1149-1) on inside; see footnotes

SIZETABLE

PRODUCT SIZE	ARTICLE NUMBER	ADDITIONAL INFO	
N/A	D13984657	One Size	

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL RESULT	EN
Abrasion Resistance ⁷	EN 530 Method 2	>1500 cycles	5/6 ¹
Basis Weight	DIN EN ISO 536	83 g/m ²	N/A
Bursting Strength (Mullenburst)	ISO 2758	500 kPa	N/A
Colour	N/A	Yellow	N/A
Exposure to high Temperature	N/A	Garments seams opens at ~98 °C	N/A
Flex Cracking Resistance ⁷	EN ISO 7854 Method B	>5000 cycles	3/6 ¹
Flex Cracking Resistance at -30°C	EN ISO 7854 Method B	>500 cycles	N/A
Puncture Resistance	EN 863	>10 N	2/6 1
Resistance to water penetration	DIN EN 20811	>30 kPa	N/A
Surface Resistance at RH 25%, inside ⁷	EN 1149-1	< 2,5 · 10 ⁹ Ohm	N/A
Surface Resistance at RH 25%, outside ⁷	EN 1149-1	No antistatic treatment	N/A
Tensile Strength (MD)	DIN EN ISO 13934-1	>100 N	3/6 ¹
Tensile Strength (XD)	DIN EN ISO 13934-1	>100 N	3/6 ¹
Thickness	DIN EN ISO 534	185 µm	N/A
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 | 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	TYPICAL RESULT	EN
Shelf Life ⁷	N/A	10 years ⁶	N/A
Type PB 3: Partial Body Protection	EN 14605	Pass	N/A

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	TYPICAL RESULT	EN
Air Permeability (Gurley method)	ISO 5636-5	No	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	TYPICAL RESULT	EN
Repellency to Liquids, o-Xylene	EN ISO 6530	>95 %	3/3 ¹
Repellency to Liquids, Butan-1-ol	EN ISO 6530	>90 %	2/3 ¹
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, Butan-1-ol	EN ISO 6530	<1 %	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
Resistance to Penetration by Liquids, o-Xylene	EN ISO 6530	<1 %	3/3 ¹

1 According to EN 14325 \mid > Larger than \mid < Smaller than \mid

BIOLOGICAL BARRIER





PROPERTY	TEST METHOD	TYPICAL RESULT	EN
Resistance to Penetration by Biologically Contaminated Aerosols	ISO/DIS 22611	log ratio >5	3/3 ²
Resistance to Penetration by Blood and Body Fluids using Synthetic Blood	ISO 16603	20 kPa	6/6 ²
Resistance to Penetration by Blood-borne Pathogens using Bacteriophage Phi-X174	ISO 16604 Procedure C	20 kPa	6/6 ²
Resistance to Penetration by Contaminated Liquids	EN ISO 22610	>75 min	6/6 ²
Resistance to Penetration by Contaminated Solid Particles	ISO 22612	log cfu <1	3/3 ²

1 According to EN 14325 \mid > Larger than \mid < Smaller than \mid

PERMEATION DATA DUPONT™ TYCHEM® 2000 C ACCESSORY

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Acetic acid (10%)	Liquid	64-19-7	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Acetic acid (2%)	Liquid	64-19-7	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Acetic acid (>95%)	Liquid	64-19-7	imm	imm	imm		3	0.05 ppm			
Acetic acid ethyl ester	Liquid	141-78-6	imm	imm	imm		12.7	0.11 ppm			
Acetone	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
Acetonitrile	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Acroleic acid	Liquid	79-10-7	imm	imm	imm		5.4	0.2			
Acrylic acid	Liquid	79-10-7	imm	imm	imm		5.4	0.2			
Acrylonitrile	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
Amino benzene	Liquid	62-53-3	imm	imm	imm		2.1	0.14			
Ammonia (gaseous)	Vapor	7664-41-7	imm	imm	imm		3.1	0.001			
Ammonium hydroxide (28% - 30%)	Liquid	1336-21-6	imm	imm	imm		62	0.035			
Aniline	Liquid	62-53-3	imm	imm	imm		2.1	0.14			
Benzenamine	Liquid	62-53-3	imm	imm	imm		2.1	0.14			
Bromine	Liquid	7726-95-6	imm	imm	imm		>50	0.0064			
Butadiene, 1,3- (gaseous)	Vapor	106-99-0	imm	imm	imm		>12	0.001			
Butanal, n-	Liquid	123-72-8	imm	imm	imm		22	0.0063			
Butanol, 1-	Liquid	71-36-3	imm	imm	imm		1.6	0.057 ppm			
Butanol, n-	Liquid	71-36-3	imm	imm	imm		1.6	0.057 ppm			
Butyl alcohol, n-	Liquid	71-36-3	imm	imm	imm		1.6	0.057 ppm			
Butyraldehyde, n-	Liquid	123-72-8	imm	imm	imm		22	0.0063			
Carbon disulfide	Liquid	75-15-0	imm	imm	imm		4367	0.0057 ppm			
Carboplatin (10 mg/ml)	Liquid	41575-94-4	>240	>240	>240	5	<0.001	0.001			
Carburant n° 2	Liquid	68476-30-2	imm	imm	imm		1.776	0.01			
Carmustine (3.3 mg/ml, 10 % Ethanol)	Liquid	154-93-8	>10	>240	>240	5	0.002	0.001			
Caustic ammonia (28% - 30%)	Liquid	1336-21-6	imm	imm	imm		62	0.035			
Caustic soda (42%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Caustic soda (50% at 50° C)	Liquid	1310-73-2	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Caustic soda (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Chlorine (gaseous)	Vapor	7782-50-5	imm	imm	imm		>50	0.2			
Chloro ethanol, 2-	Liquid	107-07-3	imm	imm	imm		3.1	0.06 ppm			
Chloro form	Liquid	67-66-3	imm	imm	imm		348	1 ppm			
Chromic acid (CrO3) (44.9%)	Liquid	1333-82-0	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6





Control (1968)	HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Cyannecthylene Liquid 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19 1971-19	and the second s	Liquid	1333-82-0	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Cyanomathane Claud 7505-8 mm mm mm mm mm mm mm	Cisplatin (1 mg/ml)	Liquid	15663-27-1	>240	>240	>240	5	<0.002	0.002			
Control phosphamide (20	Cyanoethylene	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
	Cyanomethane	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Description of the full of t		Liquid	50-18-0	imm	>240	>240	5	<0.01	0.002			
Destroy amino	Dichloro methane	Liquid	75-09-2	imm	imm	imm		>50	0.001			
Dimethyl Lymanize (27°C, solid)		Liquid	mix	imm	imm	imm		3.29	0.01			
Dimethyl ketal Liquid 67-64-1 Mm Mm Mm Mm 47-08-18 47-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18 48-08-18	Diethyl amine	Liquid	109-89-7	imm	imm	imm		64.3	0.017 ppm			
Dimethyl ketone Liquid 67-641 Imm Imm		Solid	624-49-7	177*/317	nm	291*/415	5	<0.39	0.39			
Documentation HCL (2 mg/ml) Liquid 25186-40-9 7-5218 mm mm mm mm mm mm mm	Dimethyl ketal	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
Eposy ethane (gaseous)	Dimethyl ketone	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
Ethane	Doxorubicin HCl (2 mg/ml)	Liquid	25136-40-9	>240	>240	>240	5	<0.007	0.007			
Ethane nitrile Liquid 75-05-8 mm mm mm mm mm mm 12-7 12-7 0.11 ppm 12-7 12-7 12-7 0.11 ppm 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-7 12-	Epoxy ethane (gaseous)	Vapor	75-21-8	imm	imm	imm		170	0.02			
Ethyl acetate Liquid 141-78-6 imm imm	Ethane 1,2-diol	Liquid	107-21-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethyle thanamine, N- Liquid 109-89-7 imm imm	Ethane nitrile	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Ethyl nitrile	Ethyl acetate	Liquid	141-78-6	imm	imm	imm		12.7	0.11 ppm			
Ethylene carboxylic acid Liquid 79-10-7 imm imm imm imm imm imm 3.1 0.06 ppm	Ethyl ethanamine, N-	Liquid	109-89-7	imm	imm	imm		64.3	0.017 ppm			
Ethylene chlorohydrin Liquid 107-07-3 imm imm imm imm 170 0.06 ppm 170-07-3 imm imm imm imm 170 0.02 111-08-08-08-08-08-08-08-08-08-08-08-08-08-	Ethyl nitrile	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Ethylene glycol Liquid 107-21-1 2480 2480 2480 6 0.05 0.05 0.05 24 2480 6 Ethylene oxide (gaseous) Vapor 75-21-8 imm imm imm imm imm imm 170 0.02	Ethylene carboxylic acid	Liquid	79-10-7	imm	imm	imm		5.4	0.2			
Ethylene oxide (gaseous) Vapor 75-21-8 imm imm imm imm imm 70 0.02 Ethylene tetrachloride Liquid 127-18-4 imm imm imm imm imm 2400 0.11 ppm Etoposide (Toposar®, Teva) (20 mg/ml, 332 % (v) /0) Ethanolo (20 mg/ml, 332 % (v) /0) Ethanolo (20 mg/ml, 332 % (v) /0) Ethanolo (33-35%) Liquid 7705-08-0 ×480 ×480 ×480 ×480 6 <0.005 0.005 <0.25 ×480 6 Fluorosilicic acid (33-35%) Liquid 16961-83-4 ×480 ×480 ×480 6 <0.004 0.04 <19.2 ×480 6 Fluorosilicic acid (33-35%) Liquid 51-21-8 ×240 ×240 ×240 5 <0.002 0.002	Ethylene chlorohydrin	Liquid	107-07-3	imm	imm	imm		3.1	0.06 ppm			
Ethylene tetrachloride Liquid 127-18-4 imm imm imm imm > >400 0.11 ppm Etoposide (Toposar®, Teva) (20 mg/ml, 33.2 % (v V) Ethanol)	Ethylene glycol	Liquid	107-21-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Etoposide (Toposar*) Liquid 33419-42-0 >240 >240 5 <0.01 <0.01	Ethylene oxide (gaseous)	Vapor	75-21-8	imm	imm	imm		170	0.02			
Tevaly (20 mg/ml, 33.2 % (v/V) Ethanol) Liquid (40%) 33419-42-0 by 240	Ethylene tetrachloride	Liquid	127-18-4	imm	imm	imm		>400	0.11 ppm			
Fluorosilicic acid (33-35%) Liquid 16961-83-4 >480 >480 >480 6 < <0.04 0.04 <19.2 >480 6 Fluorouracil, 5- (50 mg/ml) Liquid 51-21-8 >240 >240 >240 >240 5 <0.002 0.002	Teva) (20 mg/ml, 33.2 % (v	Liquid	33419-42-0	>240	>240	>240	5	<0.01	<0.01			
Fluorouracil, 5- (50 mg/ml) Liquid 51-21-8 > 240 > 240 > 240 5 < 0.002 0.002 Formaldehyde (10%) Liquid 50-00-0	Ferric (III) chloride (40%)	Liquid	7705-08-0	>480	>480	>480	6	<0.005	0.005	<2.5	>480	6
Formaldehyde (10%)	Fluorosilicic acid (33-35%)	Liquid	16961-83-4	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Formaldehyde (37%) Liquid 50-00-0 imm imm >480 6 0.31 0.1 Formalin (10%) Liquid 50-00-0 >480 >480 >480 6 0.31 0.1 Formalin (10%) Liquid 50-00-0 imm imm >480 6 0.31 0.1 Fuel-oil no 2 Liquid 68476-30-2 imm imm imm 1776 0.01 Gemcitabine (38 mg/ml) Liquid 95058-81-4 >10 >240 >240 5 0.01 0.003 Glycol alcohol Liquid 107-21-1 >480 >480 >480 6 0.05 0.05 0.05 0.05 0.05 0.05 0.05 Glycol chlorohydrin Liquid 107-07-3 imm imm imm imm 3.1 0.06 ppm Hydrochloric acid (32%) Liquid 7647-01-0 107*/179 240*/331 >480 6 0.03 0.03 33.3 >480 6 Hydrochloric acid (37%) Liquid 7647-01-0 imm/14 imm/29 38*/61 2 <2.5 0.03 105, 120 min 150 2 Hydrofluoric acid (48-51%) Liquid 7664-39-3 imm imm imm 81 3 na 0.005 Hydrofluoric acid (70%) Liquid 7664-39-3 imm imm imm 15*/20 1 15.3 0.1 Hydrogen chloride (38 mg/ml) Liquid 7647-01-0 imm imm imm imm imm imm Hydrogen chloride (39%) Liquid 7647-01-0 imm imm imm imm imm imm imm imm imm im	Fluorouracil, 5- (50 mg/ml)	Liquid	51-21-8	>240	>240	>240	5	<0.002	0.002			
Formalin (10%) Liquid 50-00-0 >480 >480 >480 6 <0.1 0.1 <48 >480 6 Formalin (37%) Liquid 50-00-0 imm imm >480 6 0.31 0.1	Formaldehyde (10%)	Liquid	50-00-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Formalin (37%) Liquid 50-00-0 imm imm >480 6 0.31 0.1 Fuel-oil no 2 Liquid 68476-30-2 imm imm imm imm 1.776 0.01 Gemcitabine (38 mg/ml) Liquid 95058-81-4 >10 >240 >240 5 <0.01 0.003 Glycol alcohol Liquid 107-21-1 >480 >480 >480 6 <0.05 0.05 <24 >480 6 Glycol chlorohydrin Liquid 107-07-3 imm imm imm 3.1 0.06 ppm Hydrochloric acid (32%) Liquid 7647-01-0 107*/179 240*/331 >480 6 <0.3 0.03 33.3 >480 6 Hydrochloric acid (37%) Liquid 7647-01-0 imm/14 imm/29 38*/61 2 <2.5 0.03 105, 120 min 150 2 Hydrofluoric acid (48-51%) Liquid 7664-39-3 imm imm 81 3 na 0.005 Hydrofluoric acid (70%) Liquid 7664-39-3 imm imm 15*/20 1 15.3 0.1 Hydrogen chloride (gaseous) Vapor 7647-01-0 imm imm imm imm Hydrogen peroxide (50%) Liquid 7722-84-1 >480 >480 >480 6 <0.01 0.01 <4.8 >480 6	Formaldehyde (37%)	Liquid	50-00-0	imm	imm	>480	6	0.31	0.1			
Fuel-oil no 2 Liquid 68476-30-2 imm imm imm imm imm imm imm 1.776 0.01 Gemcitabine (38 mg/ml) Liquid 95058-81-4 >10 >240 >240 >240 5 <0.01 0.003	Formalin (10%)	Liquid	50-00-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Gemcitabine (38 mg/ml) Liquid 95058-81-4 >10 >240 >240 5 <0.01 0.003 Glycol alcohol Liquid 107-21-1 >480 >480 >480 6 <0.05 0.05 <24 >480 6 Glycol chlorohydrin Liquid 107-07-3 imm imm imm imm 3.1 0.06 ppm Hydrochloric acid (32%) Liquid 7647-01-0 107*/179 240*/331 >480 6 <0.3 0.03 33.3 >480 6 Hydrochloric acid (37%) Liquid 7647-01-0 imm/14 imm/29 38*/61 2 <2.5 0.03 105, 120 min 150 2 Hydrofluoric acid (48-51%) Liquid 7664-39-3 imm 17 >480 6 na 0.005 134 >480 6 Hydrofluoric acid (60%) Liquid 7664-39-3 imm imm 81 3 na 0.005 Hydrofluoric acid (70%) Liquid 7664-39-3 imm imm 15*/20 1 15.3 0.1 Hydrogen chloride (gaseous) Hydrogen peroxide (50%) Liquid 7722-84-1 >480 >480 >480 6 <0.01 0.01 <4.8 >480 6	Formalin (37%)	Liquid	50-00-0	imm	imm	>480	6	0.31	0.1			
Glycol alcohol Liquid 107-21-1 >480 >480 >480 6 <0.05 0.05 <24 >480 6 Glycol chlorohydrin Liquid 107-07-3 imm imm imm imm 3.1 0.06 ppm Hydrochloric acid (32%) Liquid 7647-01-0 107*/179 240*/331 >480 6 <0.3 0.03 33.3 >480 6 Hydrochloric acid (37%) Liquid 7647-01-0 imm/14 imm/29 38*/61 2 <2.5 0.03 105, 120 min 150 2 Hydrofluoric acid (48-51%) Liquid 7664-39-3 imm 17 >480 6 na 0.005 134 >480 6 Hydrofluoric acid (60%) Liquid 7664-39-3 imm imm 81 3 na 0.005 Hydrofluoric acid (70%) Liquid 7664-39-3 imm imm 15*/20 1 15.3 0.1 Hydrogen chloride (gaseous) Vapor 7647-01-0 imm imm imm imm Hydrogen chloride (150%) Liquid 7722-84-1 >480 >480 >480 6 <0.01 0.01 <4.8 >480 6	Fuel-oil no 2	Liquid	68476-30-2	imm	imm	imm		1.776	0.01			
Glycol chlorohydrin Liquid 107-07-3 imm imm imm 3.1 0.06 ppm Hydrochloric acid (32%) Liquid 7647-01-0 107*/179 240*/331 >480 6 <0.3	Gemcitabine (38 mg/ml)	Liquid	95058-81-4	>10	>240	>240	5	<0.01	0.003			
Hydrochloric acid (32%) Liquid 7647-01-0 107*/179 240*/331 >480 6 <0.3	Glycol alcohol	Liquid	107-21-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydrochloric acid (37%) Liquid 7647-01-0 imm/14 imm/29 38*/61 2 <2.5 0.03 105, 120 min 150 2	Glycol chlorohydrin	Liquid	107-07-3	imm	imm	imm		3.1	0.06 ppm			
Hydrofluoric acid (48-51%) Liquid 7664-39-3 imm 17 >480 6 na 0.005 134 >480 6 Hydrofluoric acid (60%) Liquid 7664-39-3 imm imm 81 3 na 0.005	Hydrochloric acid (32%)	Liquid	7647-01-0	107*/179	240*/331	>480	6	<0.3	0.03	33.3	>480	6
Hydrofluoric acid (60%) Liquid 7664-39-3 imm imm imm 81 3 na 0.005 Hydrofluoric acid (70%) Liquid 7664-39-3 imm imm imm 15*/20 1 15.3 0.1 Hydrogen chloride (gaseous) Vapor 7647-01-0 imm imm imm imm Hydrogen peroxide (50%) Liquid 7722-84-1 >480 >480 >480 6 <0.01 0.01 <4.8 >480 6	Hydrochloric acid (37%)	Liquid	7647-01-0	imm/14	imm/29	38*/61	2	<2.5	0.03	105, 120 min	150	2
Hydrofluoric acid (70%) Liquid 7664-39-3 imm imm 15*/20 1 15.3 0.1 Hydrogen chloride (gaseous) Vapor 7647-01-0 imm imm imm Hydrogen peroxide (50%) Liquid 7722-84-1 >480 >480 6 <0.01	Hydrofluoric acid (48-51%)	Liquid	7664-39-3	imm	17	>480	6	na	0.005	134	>480	6
Hydrogen chloride (gaseous) Vapor 7647-01-0 imm imm Hydrogen peroxide (50%) Liquid 7722-84-1 >480 >480 6 <0.01	Hydrofluoric acid (60%)	Liquid	7664-39-3	imm	imm	81	3	na	0.005			
(gaseous) Vapor 7647-01-0 Imm Imm Imm Imm Imm Imm Imm Imm Imm Im	Hydrofluoric acid (70%)	Liquid	7664-39-3	imm	imm	15*/20	1	15.3	0.1			
		Vapor	7647-01-0	imm	imm	imm						
Hydrogen peroxide (70%) Liquid 7722-84-1 >480 >480 >480 6 <0.02 0.02 <9.6 >480 6	Hydrogen peroxide (50%)	Liquid	7722-84-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
	Hydrogen peroxide (70%)	Liquid	7722-84-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6





HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
fosfamide (50 mg/ml)	Liquid	3778-73-2	>240	>240	>240	5	<0.009	0.009			
odomethane	Liquid	74-88-4	imm	imm	imm		nm	0.07	4550/8 min	imm	
sopropanol	Liquid	67-63-0	imm	imm	imm		8	0.04			
sopropyl alcohol	Liquid	67-63-0	imm	imm	imm		8	0.04			
Ketone propane	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
imonene d-	Liquid	5989-27-5	imm	imm	imm		29.8	0.02			
Mercuric II chloride (sat)	Liquid	7487-94-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Mercury	Liquid	7439-97-6	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Methanol	Liquid	67-56-1	imm	imm	imm		2.2	0.18 ppm			
Methotrexate (25 mg/ml, 1.1 N NaOH)	Liquid	59-05-2	>240	>240	>240	5	<0.001	0.001			
Methyl 4-isopropenyl-1- yclohexene, 1-	Liquid	5989-27-5	imm	imm	imm		29.8	0.02			
Methyl acetyl	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
Methyl benzol	Liquid	108-88-3	imm	imm	imm			0.04			
Methyl cyanide	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Methyl iodide	Liquid	74-88-4	imm	imm	imm		nm	0.07	4550/8 min	imm	
Methyl ketone	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
Methylene chloride	Liquid	75-09-2	imm	imm	imm		>50	0.001			
Aitomycin (0.5 mg/ml)	Liquid	50-07-7	>240	>240	>240	5	<0.002	0.002			
licotine (9 mg/ml)	Liquid	54-11-5	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
litric acid (70%)	Liquid	7697-37-2	77	101	314	5	na	0.05	349	354	5
litro benzene	Liquid	98-95-3	imm	imm	imm		17.7	0.001			
leum (30% free SO3)	Liquid	8014-95-7	18	82	105	3	na	0.005			
)xaliplatin (5 mg/ml)	Liquid	63121-00-6	>120	>240	>240	5	<0.1	0.008			
Paclitaxel (Hospira) (6 mg ml, 49.7 % (v/v) Ethanol)	Liquid	33069-62-4	>240	>240	>240	5	<0.01	<0.01			
erchloric acid (70%)	Liquid	7601-90-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
henyl amine	Liquid	62-53-3	imm	imm	imm		2.1	0.14			
hosphoric acid (85%)	Liquid	7664-38-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
otassium chromate (sat)	Liquid	7789-00-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
otassium hydroxide 50%)	Liquid	1310-58-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
ropan -2-ol	Liquid	67-63-0	imm	imm	imm		8	0.04			
ropan -2-one	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
ropene acid	Liquid	79-10-7	imm	imm	imm		5.4	0.2			
ropenenitrile, 2-	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
ropenoic acid nitrile	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
yroacetic ether	Liquid	67-64-1	imm	imm	imm		<20	0.02	>908	13	1
odium cyanide (sat)	Liquid	143-33-9	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
odium fluoride (sat)	Liquid	7681-49-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
odium hydroxide (42%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
odium hydroxide (50% at 0°C)	Liquid	1310-73-2	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
odium hydroxide (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
odium hypochlorite (15%)	Liquid	7681-52-9	>480	>480	>480	6	<0.05	0.05	<24	>480	6
ulfuric acid (50%)	Liquid	7664-93-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
ulfuric acid (98% at 50°	Liquid	7664-93-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
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HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Sulfuric acid fuming (30% free SO3)	Liquid	8014-95-7	18	82	105	3	na	0.005			
Tetrachloro ethylene, 1,1,2,2-	Liquid	127-18-4	imm	imm	imm		>400	0.11 ppm			
Tetrahydrofuran	Liquid	109-99-9	imm	imm	imm			0.05			
Tetramethyl ammonium hydroxide (25%)	Liquid	75-59-2	>480	>480	>480	6	<0.37	0.037	<17.7	>480	6
Thiotepa (10 mg/ml)	Liquid	52-24-4	imm	>240	>240	5	<0.01	0.001			
Toluene	Liquid	108-88-3	imm	imm	imm			0.04			
Toluene diisocyanate, 2,4-	Liquid	584-84-9	imm	imm	imm		7	0.01			
Trichloro benzene, 1,2,4-	Liquid	120-82-1	imm	imm	imm		8.4	0.001			
Trichloro methane	Liquid	67-66-3	imm	imm	imm		348	1 ppm			
Vinyl cyanide	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
Vinyl ethylene (gaseous)	Vapor	106-99-0	imm	imm	imm		>12	0.001			

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] | CUM480 Cumulative permeation mass after 480 mins [µg/cm²] |

Time150 Time to reach cumulative permeation mass of 150 μg/cm² [mins] | ISO Classification according to ISO 16602 |

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 | GPR grade General purpose reagent grade | * Based on lowest single value |

8 Actual breakthrough time; normalized breakthrough time is not available | DOT5 Degradation after 5 min | DOT30 Degradation after 30 min |

DOT60 Degradation after 60 min | DOT240 Degradation after 240 min | BT1383 Normalized breakthrough time at 0.1 µg/cm²/min [mins] acc. ASTM F1383 |

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 (31-50% 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.

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

The information provided herein corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials or additives or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights.

WARNING





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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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