Technical data sheet

DuPont™ Tychem® 6000 F , *TFCHA5TGY00*

CAT III T3 T4 T5 T6 EN 1073-2

EN 1149-5 EN 14126



Product Description

DuPont™ Tychem® 6000 F Grey. Hooded coverall. Stitched and over-taped seams. Thumb loops. Elastication at wrists, ankles, face and waist. Self-adhesive double zipper flap and chin flap. Grey.

Certifications

- Certified according to Regulation (EU) 2016/425
- Chemical protective clothing, Category III, Type 3-B, 4-B, 5-B and 6-B
- EN 14126 (barrier to infective agents), EN 1073-2 (protection against radioactive contamination)
- Antistatic treatment (EN 1149-5) - on inside

Packaging (Quantity/Box)

25 per box, individually packed.

Size	Article Number	Chest Girth(cm)	Body Height(cm)	Chest Girth(in)	Body Height(ft/in)
SM	D13495186	84-92	162-170	33-36	5'4"-5'7"
MD	D13495156	92-100	168-176	36-39	5'6"-5'9"
LG	D13395221	100-108	174-182	39-43	5'8"-6'0"
XL	D13395545	108-116	180-188	43-46	5'11"-5'2"
2X	D13395268	116-124	186-194	46-49	6'1"-6'4"
3X	D13495118	124-132	192-200	49-52	6'3"-6'7"
4X	D15522786	132-140	200-208	52-55	6'7"-6'10"
5X	D15522787	140-148	208-216	55-58	6'10"-7'1"

Reference Number: TFCHA5TGY00

Physical Properties

Property	Test Method	Result	EN Class
Colour	N/A	Grey	N/A
Basis Weight	DIN EN ISO 536	120 g/m^2	N/A
Thickness	DIN EN ISO 534	210 µm	N/A
Abrasion Resistance [7]	EN 530 Method 2	>2000 cycles	6 of 6 [1]
Flex Cracking Resistance [7]	EN ISO 7854 Method B	>1000 cycles	1 of 6 [1]
Flex Cracking Resistance at -30 °C	EN ISO 7854 Method B	>1000 cycles	N/A
Trapezoidal Tear Resistance (MD)	EN ISO 9073-4	40 N	2 of 6 [1]
Trapezoidal Tear Resistance (XD)	EN ISO 9073-4	35 N	2 of 6 [1]
Tensile Strength (MD)	DIN EN ISO 13934-1	240 N	3 of 6 [1]
Tensile Strength (XD)	DIN EN ISO 13934-1	245 N	3 of 6 [1]
Puncture Resistance	EN 863	26 N	2 of 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
Exposure to high Temperature	N/A	Garments seams opens at ~98 °C	N/A
Exposure to low Temperature	N/A	Flexibility retained down to -73 °C	N/A
Resistance to Ignition [7]	EN 13274-4 Method 3	No after flame, no drop formation, hole formation	N/A
Bursting Strength (Mullenburst)	ISO 2758	610 kPa	N/A

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
Type 3: Resistance to Penetration by Liquids (Jet Test)	EN 17491-3	Pass	N/A
Type 4: Resistance to Penetration by Liquids (High Level Spray Test)	EN ISO 17491-4, Method B	Pass	N/A
Type 5: Inward Leakage of Airborne Solid Particulates	EN ISO 13982-2	Pass	N/A
Type 6: Resistance to Penetration by Liquids (Low Level Spray Test)	EN ISO 17491-4, Method A	Pass	N/A
Nominal protection factor [7]	EN 1073-2	>5	1 of 3 [3]
Seam Strength	EN ISO 13935-2	>125 N	4 of 6 [1]
Shelf Life [7]	N/A	10 years [6]	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	Result	EN Class
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	Result	EN Class
Resistance to Penetration by Liquids, Sulphuric Acid (30%)	EN ISO 6530	<1 %	3 of 3 [1]
Resistance to Penetration by Liquids, Sodium Hydroxide (10%)	EN ISO 6530	<1 %	3 of 3 [1]
Resistance to Penetration by Liquids, o-Xylene	EN ISO 6530	<1 %	3 of 3 [1]
Resistance to Penetration by Liquids, Butan-1-ol	EN ISO 6530	<1 %	3 of 3 [1]
Repellency to Liquids, Sulphuric Acid (30%)	EN ISO 6530	>95 %	3 of 3 [1]
Repellency to Liquids, Sodium Hydroxide (10%)	EN ISO 6530	>95 %	3 of 3 [1]
Repellency to Liquids, o-Xylene	EN ISO 6530	>95 %	3 of 3 [1]
Repellency to Liquids, Butan-1-ol	EN ISO 6530	>95 %	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 Blood-borne Pathogens using Bacteriophage Phi-X174	ISO 16604 Procedure C	20 kPa	6 of 6 [2]
Resistance to Penetration by Contaminated Liquids	EN ISO 22610	>75 min	6 of 6 [2]
Resistance to Penetration by Biologically Contaminated Aerosols	ISO/DIS 22611	log ratio >5	3 of 3 [2]
Resistance to Penetration by Contaminated Solid Particles	ISO 22612	log cfu <1	3 of 3 [2]

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
2-(2-Butoxyethoxy) ethanol	Liquid	112-34-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetaldehyde	Liquid	75-07-0	imm	imm	13*	1	2	0.06			
Acetic acid (>95%)	Liquid	64-19-7	>480	>480	>480	6	<0.08	0.080	<38.4	>480	6
Acetic acid 2 ethoxy ethyl ester	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Acetic acid 2 methoxy ethyl ester	Liquid	110-49-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Acetic acid ethenyl ester	Liquid	108-05-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetic acid ethyl ester	Liquid	141-78-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetic acid pentyl ester	Liquid	628-63-7	12*	136*	>480	6	0.007	0.001			
Acetic anhydride	Liquid	108-24-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetic chloride	Liquid	75-36-5	155	>480	>480	6	0.0014	0.0001			
Acetone	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Acetone cyanohydrin	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetonitrile	Liquid	75-05-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acetyl chloride	Liquid	75-36-5	155	>480	>480	6	0.0014	0.0001			
Acroleic acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Acrolein	Liquid	107-02-8	51*	75*	>480	6	<0.5	0.02	105	>480	6
Acryl amide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acrylic acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Acrylic amide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acrylonitrile	Liquid	107-13-1	4	8*	>480	6	0.57	0.01			
Acryloyl Chloride	Liquid	814-68-6	166*	334	>480	6	<0.3	0.04	29.6	>480	6
Adipic acid dinitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Adipic acid nitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Adiponitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Adipyl dinitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Allyl alcohol	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Allyl chloride	Liquid	107-05-1	291*	381*	>480	6	<0.02	0.02	<18.5	>480	6
Amido sulfonic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Amino benzene	Liquid	62-53-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Amino diphenyl, 4- (1 mg/ml in Methanol)	Liquid	92-67-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Amino ethanol, 2-	Liquid	141-43-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Amino ethylethanolamine	Liquid	111-41-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Amino ethylethanolamine (60%)	Liquid	111-41-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Amino ethylpiperazine	Liquid	140-31-8	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Amino propane, 2-	Liquid	75-31-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ammonia (gaseous)	Vapor	7664-41-7	20	20	21	1	1.5	0.0024			
Ammonium aqueous (32%)	Liquid	1336-21-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ammonium bifluoride (sat)	Liquid	1341-49-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ammonium hydrogendifluoride (sat)	Liquid	1341-49-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Amyl acetate, n-	Liquid	628-63-7	12*	136*	>480	6	0.007	0.001			
Amyl alcohol	Liquid	71-41-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Amyl ester acetic acid	Liquid	628-63-7	12*	136*	>480	6	0.007	0.001			
Anilin, 4-Trifluoromethoxy-	Liquid	461-82-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Aniline	Liquid	62-53-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Anthracene (sat in Toluene)	Liquid	120-12-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Anthracin (sat in Toluene)	Liquid	120-12-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Antimony pentachloride	Liquid	7647-18-9	<15	<15	<15	1	>10	0.1			
Arsenic (III) chloride	Liquid	7784-34-1	22*	32*	59*	2	334	0.01			
Arsenic trichloride	Liquid	7784-34-1	22*	32*	59*	2	334	0.01			
Azolidine	Liquid	123-75-1	40*	45*	145*	4	4.7	0.05			
Benzenamine	Liquid	62-53-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Benzene	Liquid	71-43-2	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzene carbonyl chloride	Liquid	98-88-4	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Benzene sulfone chloride	Liquid	98-09-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzene sulfonyl chloride	Liquid	98-09-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzo nitrile	Liquid	100-47-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzol	Liquid	71-43-2	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzoyl chloride	Liquid	98-88-4	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Benzyl alcohol	Liquid	100-51-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Benzyl chloride	Liquid	100-44-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Benzyl cyanide	Liquid	140-29-4	>390	>390	>390	5	<0.01	0.01	<4.8	>480	6
Benzyl methylamine, N-	Liquid	103-67-3	>480	>480	>480	6	>0.02	0.02	<9.6	>480	6
Benzyl nitrile	Liquid	140-29-4	>390	>390	>390	5	<0.01	0.01	<4.8	>480	6
Bis (4-(2,3-epoxypropoxy)phenyl)propane	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Bis phenol A diglycidyl ether	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Boron fluoride ethyl ether	Liquid	109-63-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Boron trifluoride diethyl etherate	Liquid	109-63-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Boron trifluoride dimethyl etherate	Liquid	353-42-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Boron trifluoride etherate	Liquid	109-63-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Bromine (liquid)	Liquid	7726-95-6	imm	imm	nm		105	0.001			
Bromo 4-fluorobenzene, 1-	Liquid	460-00-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Bromo fluorobenzene, 4-	Liquid	460-00-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Bromthiophene, 2-	Liquid	1003-09-4	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
But-3-en-2-one	Liquid	78-94-4	287*	>480	>480	6	<0.02	0.02	<9.6	>480	6
Butadiene, 1,3- (gaseous)	Vapor	106-99-0	4*	>480	>480	6	0.005	0.001			
Butan-1-ol	Liquid	71-36-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butanal, n-	Liquid	123-72-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butane dinitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6

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Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Butanol, n-	Liquid	71-36-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butanol, tert-	Liquid	75-65-0	10*	37*	>480	6	0.26	0.02			
Butanone	Liquid	78-93-3	imm	40*	>480	6	0.36	0.001			
Butanone oxime, 2-	Liquid	96-29-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Butenal, 2-	Liquid	123-73-9	121	147	>480	6	<1	0.02	210	405	5
Butoxy ethanol, 2-	Liquid	111-76-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butyl acetate, n-	Liquid	123-86-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Butyl alcohol, n-	Liquid	71-36-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butyl amine	Liquid	109-73-9	170	200	>480	6	0.84	0.01	137.5	>480	6
Butyl ether, n-	Liquid	142-96-1	4*	192*	>480	6	0.13	0.001			
Butyl stannium trichloride	Liquid	1118-46-3	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Butyraldehyde, n-	Liquid	123-72-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Calomel (sat)	Liquid	10112-91-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Carbon disulfide	Liquid	75-15-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Carbon tetrachloride	Liquid	56-23-5	4*	4*	>480	6	0.57	0.001			
Carmustine (3.3 mg/ml, 10 % Ethanol)	Liquid	154-93-8	>240	>240	>240	5	<0.001	0.001			
Caustic ammonia (32%)	Liquid	1336-21-6	>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
Chlor allylene	Liquid	107-05-1	291*	381*	>480	6	<0.02	0.02	<18.5	>480	6
Chlor trinitromethan	Liquid	76-06-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chlorine (gaseous)	Vapor	7782-50-5	>480	>480	>480	6	<0.005	0.005	<0.6	>480	6
Chloro 1,2-propylene oxide, 3-	Liquid	106-89-8	355	395	>480	6	<0.4	0.02	18.4	>480	6
Chloro 1,3-butadiene, 2- (50% in Butanol)	Liquid	126-99-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro 1-methylbenzene, 2-	Liquid	95-49-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro 1-propene, 3-	Liquid	107-05-1	291*	381*	>480	6	<0.02	0.02	<18.5	>480	6
Chloro 2,3-epoxy propane, 1-	Liquid	106-89-8	355	395	>480	6	<0.4	0.02	18.4	>480	6
Chloro 2-nitrobenzene, 1- (35-40 °C)	Liquid	88-73-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Chloro 2-propene, 1-	Liquid	107-05-1	291*	381*	>480	6	<0.02	0.02	<18.5	>480	6
Chloro acetic acid (80%)	Liquid	79-11-8	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Chloro acetone (95%)	Liquid	78-95-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chloro acrylonitrile, 2-	Liquid	920-37-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chloro aniline, p- (molten at 70 °C)	Liquid	106-47-8	10	10	11	1	256	0.0206			
Chloro benzenamine, 4- (molten at 70 °C)	Liquid	106-47-8	10	10	11	1	256	0.0206			
Chloro benzene	Liquid	108-90-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chloro buta-1,3-diene, 2- (50% in Butanol)	Liquid	126-99-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro ethanol, 2-	Liquid	107-07-3	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Chloro ethene	Vapor	75-01-4	imm	>480	>480	6	0.02	0.001	<9.6	>480	6
Chloro form	Liquid	67-66-3	4*	8	8		10.6	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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO	ISO
Chloro prene (50% in Butanol)	Liquid	126-99-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Chloro prene, 3-	Liquid	107-05-1	291*	381*	>480	6	<0.02	0.02	<18.5	>480	6	
Chloro propan-2-one, 1- (95%)	Liquid	78-95-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6	
Chloro toluene, alpha-	Liquid	100-44-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6	
Chloro toluene, o-	Liquid	95-49-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Chloropicrin	Liquid	76-06-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6	
Chlorsulfonic acid	Liquid	7790-94-5	423	>480	>480	6	0.0003	0.0001				
Chromic acid (CrO3) (44.9%)	Liquid	1333-82-0	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6	
Citric acid (sat)	Liquid	77-92-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6	
Creosote	Liquid	8001-58-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Cresol o-	Liquid	95-48-7	173	179	211	4	<4	0.02	674	295	5	
Cresols, mixed isomers	Liquid	1319-77-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6	
Cresylic acid	Liquid	1319-77-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6	
Crotonaldehyde	Liquid	123-73-9	121	147	>480	6	<1	0.02	210	405	5	
Cumene	Liquid	98-82-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6	
Cyanamide (50%)	Liquid	420-04-2	62*	nm	>480	6	na	0.17	<81.6	>480	6	
Cyanobenzene	Liquid	100-47-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Cyanoethylene	Liquid	107-13-1	4	8*	>480	6	0.57	0.01				
Cyanomethane	Liquid	75-05-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6	
Cyanopropan-2-ol, 2-	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6	
Cyclohexane	Liquid	110-82-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Cyclohexanone	Liquid	108-94-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6	
Diamine	Liquid	302-01-2	269	283	352	5	2.3	0.001				
Diaminoethane, 1,2-	Liquid	107-15-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6	
Dibromoethane, 1,2-	Liquid	106-93-4	84*	144*	>480	6	0.52	0.001				
Dibutyl 1,2-benzenedicarboxylate	Liquid	84-74-2	nm	nm	>480	6	<0.05	0.05	<24	>480	6	
Dibutylphthalate	Liquid	84-74-2	nm	nm	>480	6	<0.05	0.05	<24	>480	6	
Dibutylsebacate	Liquid	109-43-3	nm	nm	>480	6	<1	1				
Dichlorbenzen, 1,2-	Liquid	95-50-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6	
Dichlorbenzen, 1,3-	Liquid	541-73-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6	
Dichlorbenzen, 1,4- (50% in Ethanol)	Liquid	106-46-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6	
Dichlorethane, 1.2.-	Liquid	107-06-2	65*	93	109	3	<3	0.04	898	182	4	
Dichloro-2-propanone, 1,3- (molten at 45 °C)	Liquid	534-07-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Dichloroacetone (molten at 45 °C)	Liquid	534-07-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Dichloroacetyl chloride	Liquid	79-36-7	160	160	180	4	78.41	0.01				
Dichloroethyl ether	Liquid	111-44-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Dichloroethylene, 1,1-	Liquid	75-35-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6	
Dichloromethane	Liquid	75-09-2	imm	imm	imm		23.7	0.03				
Dichloropropene, 2,3-	Liquid	78-88-6	4*	4*	54*	2	2.4	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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Diesel Fuel Grade D-2	Liquid	N/A	>480	>480	>480	6	<0.03	0.03	14.4	>480	6
Diethyl amine	Liquid	109-89-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diethyl benzene (95%)	Liquid	25340-17-4	>480	>480	>480	6	<0.0216	0.0216	<10.4	>480	6
Diethyl ethanamine, N,N-	Liquid	121-44-8	>480	>480	>480	6	0.05	0.05	<24	>480	6
Diethyl ether	Liquid	60-29-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diethyl sulfate	Liquid	64-67-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diethylene glycol monobutyl ether	Liquid	112-34-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diethylene triamine	Liquid	111-40-0	5	>480	>480	6	<0.01	0.005	<4.8	>480	6
Diketene Acetone (95%)	Liquid	5394-63-8	>480	>480	>480	6	<0.0229	0.0229	<11	>480	6
Dimethyl acetamide, N,N-	Liquid	127-19-5	>480	>480	>480	6	<0.014	0.014	<6.72	>480	6
Dimethyl amine	Vapor	124-40-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dimethyl aniline, N,N-	Liquid	121-69-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Dimethyl dichlorosilane	Liquid	75-78-5	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Dimethyl formamide, N,N-	Liquid	68-12-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dimethyl fumarate (27 °C)	Solid	624-49-7	>480	nm	>480	6	<0.39	0.39			
Dimethyl fumarate (37 °C)	Solid	624-49-7	>480	nm	>480	6	<0.39	0.39			
Dimethyl ketal	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Dimethyl ketone	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Dimethyl nitrosamine	Liquid	62-75-9	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Dimethyl phenylamine, N,N-	Liquid	121-69-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Dimethyl sulfate	Liquid	77-78-1	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Dimethyl sulfide	Liquid	75-18-3	83*	271	452	5	1.21	0.02			
Dimethyl sulfoxide	Liquid	67-68-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dioxane, 1,4-	Liquid	123-91-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diphenyl methane diisocyanate, 4,4'- (molten at 50 °C)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6
Epichlorohydrin	Liquid	106-89-8	355	395	>480	6	<0.4	0.02	18.4	>480	6
Epoxy ethane (gaseous)	Vapor	75-21-8	106	126	>480	6	<0.35	0.05	76	>480	6
Epoxy propane, 1,2-	Liquid	75-56-9	41	43	51	2	<5	0.03	1860	114	3
Ethane 1,2-diol	Liquid	107-21-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Ethane dioic acid (sat)	Liquid	144-62-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethane diol dipropanoate, 1,2-	Liquid	123-73-9	121	147	>480	6	<1	0.02	210	405	5
Ethane nitrile	Liquid	75-05-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Ethane thiol	Liquid	75-08-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethane trichloride	Liquid	79-00-5	120*	164*	202*	4	9.1	0.01			
Ethanol	Liquid	64-17-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Ethanol amine	Liquid	141-43-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethanoyl chloride	Liquid	75-36-5	155	>480	>480	6	0.0014	0.0001			
Ethoxy ethanol, 2-	Liquid	110-80-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethoxy ethylacetat	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Ethyl alcohol	Liquid	64-17-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Ethyl benzene	Liquid	100-41-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethyl ethanamine, N-	Liquid	109-89-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethyl ether	Liquid	60-29-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethyl mercaptan	Liquid	75-08-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethyl nitrile	Liquid	75-05-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Ethylene carboxylic acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Ethylene chlorohydrin	Liquid	107-07-3	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Ethylene diamine	Liquid	107-15-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene dibromide	Liquid	106-93-4	84*	144*	>480	6	0.52	0.001			
Ethylene dichloride	Liquid	107-06-2	65*	93	109	3	<3	0.04	898	182	4
Ethylene glycol	Liquid	107-21-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Ethylene glycol mono ethyl ether acetate	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monobutyl ether	Liquid	111-76-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethylene glycol monoethyl ether	Liquid	110-80-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monomethyl ether	Liquid	109-86-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monomethyl ether acetate	Liquid	110-49-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene oxide (gaseous)	Vapor	75-21-8	106	126	>480	6	<0.35	0.05	76	>480	6
Ethylene tetrachloride	Liquid	127-18-4	>480	>480	>480	6	<0.05	0.05	<24		6
Ethylene trichloride	Liquid	79-01-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylglycol acetate	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ferric (II) chloride (50%)	Liquid	7758-94-3	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Ferric (III) chloride (40%)	Liquid	7705-08-0	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Fluorobenzene	Liquid	462-06-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Fluorosilicic acid (33-35%)	Liquid	16961-83-4	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Fluorosulfonic acid	Liquid	7789-21-1	87	194	>480	6	nm	0.02	29	>480	6
Formaldehyde (37%)	Liquid	50-00-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Formalin (37%)	Liquid	50-00-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Formic acid (50%)	Liquid	64-18-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Formic acid (>95%)	Liquid	64-18-6	172	260	>480	6	0.24	0.001			
Furaldehyde, 2-	Liquid	98-01-1	459	>480	>480	6	na	0.03	<14.4	>480	6
Furfural	Liquid	98-01-1	459	>480	>480	6	na	0.03	<14.4	>480	6
Gasoline, leaded	Liquid	N/A	imm	4*	>480	6	0.32	0.001			
Gasoline, unleaded	Liquid	86290-81-5	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Glutaral (50%)	Liquid	111-30-8	150	170	200	4	1.861	0.01			
Glutaraldehyde (50%)	Liquid	111-30-8	150	170	200	4	1.861	0.01			
Glycol alcohol	Liquid	107-21-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Glycol chlorohydrin	Liquid	107-07-3	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Hexafluoro isobutylene	Vapor	382-10-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Hexamethylene diisocyanate	Liquid	822-06-0	>480	>480	>480	6	<0.0271	0.0271	<13.0	>480	6
Hexane dinitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hexane n-	Liquid	110-54-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hexanone	Liquid	108-94-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hexone	Liquid	108-10-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydrazine	Liquid	302-01-2	269	283	352	5	2.3	0.001			
Hydriodic acid (57%)	Liquid	10034-85-2	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Hydrobromic acid (48%)	Liquid	10035-10-6	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Hydrochloric acid (37%)	Liquid	7647-01-0	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Hydrofluoric acid (48%)	Liquid	7664-39-3	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydrofluoric acid (60%)	Liquid	7664-39-3	18	52	373	5	nm	0.005			
Hydrofluoric acid (70%)	Liquid	7664-39-3	22	35	293	5	na	0.005	414	227	4
Hydrogen bromide (gaseous)	Vapor	10035-10-6	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Hydrogen chloride (gaseous)	Vapor	7647-01-0	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Hydrogen fluoride (gaseous at 21 °C)	Vapor	7664-39-3	nm	nm	48	2	<0.1	0.01			
Hydrogen fluoride (gaseous at 27 °C)	Vapor	7664-39-3	8	9	23	1	na	0.05			
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	<10	>480	6
Hydroxy 1,2,3-propanetricarboxylic acid, 2- (sat)	Liquid	77-92-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Hydroxy 1-ethanethiol, 2-	Liquid	60-24-2	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Hydroxy 2-methylpropionitrile, 2-	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydroxy isobutyronitrile	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydroxy propene	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Hydroxy toluene	Liquid	100-51-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hydroxy toluene, o-	Liquid	95-48-7	173	179	211	4	<4	0.02	674	295	5
Hypophosphorus acid (50%)	Liquid	6303-21-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Iodomethane	Liquid	74-88-4	254	296	>480	6	nm	0.07	53.6	>480	6
Isobutyl methyl ketone	Liquid	108-10-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isophthaloyldichloride (molten at 45 °C)	Liquid	99-63-8	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Isopropanol	Liquid	67-63-0	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Isopropyl alcohol	Liquid	67-63-0	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Isopropyl amine	Liquid	75-31-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isopropyl benzene	Liquid	98-82-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isopropylidenediphenol diglycidyl ether, 4,4'-	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Kerosene	Liquid	8008-20-6	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Ketone propane	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Lewisite (L), FINABEL 0.7.C	Liquid	541-25-3		>260*[8]							
Lewisite (L), MIL-STD-282 (100 g/m^2)	Liquid	541-25-3		360[8]							
Limonene d-	Liquid	5989-27-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Maleic Anhydride (liquid at 66 °C)	Liquid	108-31-6	21	22	24	1	24.6	0.016			
Mercapto acetic acid	Liquid	68-11-1	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Mercapto ethanol	Liquid	60-24-2	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Mercuric I chloride (sat)	Liquid	10112-91-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Mercury	Liquid	7439-97-6	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Methacrylic acid	Liquid	79-41-4	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Methanesulfonyl chloride	Liquid	124-63-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methanesulphonic acid (70%)	Liquid	75-75-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methanethiol	Vapor	74-93-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methanol	Liquid	67-56-1	56	117	>480	6	0.14	0.02			
Methoxy 2-methylpropane, 2-	Liquid	1634-04-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methoxy chloromethane	Liquid	107-30-2	imm*	8*	>480	6	0.75	0.001			
Methoxy ethanol, 2	Liquid	109-86-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Methoxy ethylacetate, 2-	Liquid	110-49-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Methyl 1,5-pentantedinitrile, 2-	Liquid	4553-62-2	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methyl 2-methyl-2-propenoate	Liquid	80-62-6	4*	8*	180*	4	1.4	0.001			
Methyl 2-pyrrolidon, N-	Liquid	872-50-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl 4-isopropenyl-1-cyclohexene, 1-	Liquid	5989-27-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl N-nitrosomethanamine, N-	Liquid	62-75-9	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Methyl acetyl	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl acrolein	Liquid	123-73-9	121	147	>480	6	<1	0.02	210	405	5
Methyl acrylate	Liquid	96-33-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl amine	Vapor	74-89-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl aniline, o-	Liquid	95-53-4	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Methyl benzol	Liquid	108-88-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl benzylamine, N-	Liquid	103-67-3	>480	>480	>480	6	>0.02	0.02	<9.6	>480	6
Methyl chloride (gaseous)	Vapor	74-87-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl chloroformate	Liquid	79-22-1	99*	204*	>480	6	0.17	0.05	<24	>480	6
Methyl cyanide	Liquid	75-05-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methyl ethyl ketone	Liquid	78-93-3	imm	40*	>480	6	0.36	0.001			
Methyl ethyl ketoxime	Liquid	96-29-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl ethylamine, 1-	Liquid	75-31-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl formamide, N-	Liquid	123-39-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl hydrazine	Liquid	60-34-4	83*	183*	280*	5	0.98	0.01			
Methyl iodide	Liquid	74-88-4	254	296	>480	6	nm	0.07	53.6	>480	6
Methyl isocyanate	Liquid	624-83-9	imm	4*	>480	6	0.42	0.001			
Methyl ketone	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl mercaptan	Vapor	74-93-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl methacrylate	Liquid	80-62-6	4*	8*	180*	4	1.4	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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Methyl phenols	Liquid	1319-77-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Methyl propan-2-ol, 2-	Liquid	75-65-0	10*	37*	>480	6	0.26	0.02			
Methyl propenoic acid, 2-	Liquid	79-41-4	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Methyl pyridine, 2-	Liquid	109-06-8	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Methyl pyridine, 3-	Liquid	108-99-6	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Methyl tert-butyl ether	Liquid	1634-04-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl trichlorosilane	Liquid	75-79-6	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Methyl vinyl ketone	Liquid	78-94-4	287*	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methylen Isocyclohexylamine, 4.4- (40 °C)	Liquid	1761-71-3	>480	>480	>480	6	<0.01	1	<4.8	>480	6
Methylene bromide	Liquid	74-95-3	imm	imm	20	1	111	0.05			
Methylene chloride	Liquid	75-09-2	imm	imm	imm		23.7	0.03			
Methylene diphenyl diisocyanate, 4,4'- (molten at 50 °C)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6
Naphthalene	Solid	91-20-3	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Naphthalene (25% in Diethylene glycol dimethylether)	Solid	91-20-3	>480	>480	>480	6	<0.007	0.007	<3.36	>480	6
Neoprene (50% in Butanol)	Liquid	126-99-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Nicotine	Liquid	54-11-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Nitric acid (70%)	Liquid	7697-37-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Nitric acid, red fuming (90%)	Liquid	52583-42-3	9	10	32	2	na	0.08	342, 80 min	59	3
Nitro benzene	Liquid	98-95-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Nitro chlorobenzene, o- (35-40 °C)	Liquid	88-73-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Nitro methane	Liquid	75-52-5	157	233	nm		0.97	0.001			
Nitro propane, 2-	Liquid	79-46-9	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Nitro toluene, 2-	Liquid	88-72-2	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Nitrochlormethan	Liquid	76-06-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Nitrogen dioxide	Vapor	10102-44-0	<15	<15	nm		>0.2	0.01			
Norflurane	Vapor	811-97-2	>480	>480	>480	6	<0.04	0.04	<19.2	<480	6
Oleum (20%)	Liquid	8014-95-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Oleum (40%)	Liquid	8014-95-7	130*	455*	>480	6	0.32	0.0001			
Oleum (65%)	Liquid	8014-95-7	180	248	370	5	nm	0.04	398	428	5
Oxalic acid (sat)	Liquid	144-62-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
PCB 1254 (50% in Trichlorbenzen)	Liquid	11097-69-1	324*	>480	>480	6	0.032	0.01			
Pentachloroantimony	Liquid	7647-18-9	<15	<15	<15	1	>10	0.1			
Pentanedial, 1,5- (50%)	Liquid	111-30-8	150	170	200	4	1.861	0.01			
Pentanol, 1-	Liquid	71-41-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Pentene nitrile, 2-	Liquid	13284-42-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Pentyl acetate	Liquid	628-63-7	12*	136*	>480	6	0.007	0.001			
Perchloric acid (70%)	Liquid	7601-90-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Phenethylene	Liquid	100-42-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenol (85%)	Liquid	108-95-2	>480	>480	>480	6	<0.05	0.05	<6	>480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Phenol (molten at 60 °C)	Liquid	108-95-2	imm	imm	imm		na	0.01	426, 24 min	14	1
Phenyl acetonitrile	Liquid	140-29-4	>390	>390	>390	5	<0.01	0.01	<4.8	>480	6
Phenyl amine	Liquid	62-53-3	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Phenyl chloride	Liquid	108-90-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenyl cyanide	Liquid	100-47-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Phenyl ethane	Liquid	100-41-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Phenyl ethanol, 1-	Liquid	98-85-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Phenyl propane, 2-	Liquid	98-82-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenyl trichlorosilane	Liquid	98-13-5	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Phosgene	Vapor	75-44-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Phosphine	Vapor	7803-51-2	imm	imm	nm		>0.11	0.003			
Phosphinic acid (50%)	Liquid	6303-21-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phosphoric acid (85%)	Liquid	7664-38-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Phosphorus oxychloride	Liquid	10025-87-3	nm	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phosphorus trichloride	Liquid	7719-12-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Picoline, 2-	Liquid	109-06-8	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Picoline, 3-	Liquid	108-99-6	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Pimelic ketone	Liquid	108-94-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Polymethylene polyphenyle isocyanate (p-MDI)	Liquid	9016-87-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Potassium acetate (sat)	Liquid	127-08-2	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Potassium chromate (sat)	Liquid	7789-00-6	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Potassium hydroxide (45%)	Liquid	1310-58-3	>480	>480	>480	6	<0.023	0.023	<11	>480	6
Potassium hydroxide (50%)	Liquid	1310-58-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Prop-2-en-1-al	Liquid	107-02-8	51*	75*	>480	6	<0.5	0.02	105	>480	6
Prop-2-yn-1-ol	Liquid	107-19-7	123	123	127	4	37.9	0.07			
Propan-1-ol	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propan-2-ol	Liquid	67-63-0	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Propan-2-one	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propanol, 1-	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propanol, n-	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propargyl alcohol	Liquid	107-19-7	123	123	127	4	37.9	0.07			
Propen-1-ol, 2-	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propenamide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Propene acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Propenenitrile, 2-	Liquid	107-13-1	4	8*	>480	6	0.57	0.01			
Propenoic acid nitrile	Liquid	107-13-1	4	8*	>480	6	0.57	0.01			
Propyl alcohol	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propyl amine, n-	Liquid	107-10-8	7	16*	>480	6	0.52	0.05			
Propyl bromide, n-	Liquid	106-94-5	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Propylene oxide, 1,2-	Liquid	75-56-9	41	43	51	2	<5	0.03	1860	114	3
Pyridene, 2-fluoro-6-(trifluoromethyl)	Liquid	94239-04-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Pyridine	Liquid	110-86-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Pyroacetic ether	Liquid	67-64-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Pyrrolidine	Liquid	123-75-1	40*	45*	145*	4	4.7	0.05			
Sarin (GB), FINABEL 0.7.C	Liquid	107-44-8		>1400 [8]							
Sarin (GB), MIL-STD-282 (100 g/m^2)	Liquid	107-44-8		>480 [8]							
Silane	Vapor	7803-62-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Silicon tetrachloride	Liquid	10026-04-7	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Sodium bisulphite (38-40%)	Liquid	7631-90-5	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Sodium cyanide (sat)	Liquid	143-33-9	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Sodium hydroxide (50% at 50 °C)	Liquid	1310-73-2	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Sodium hydroxide (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Sodium hypochlorite (15%)	Liquid	7681-52-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Soman (GD), FINABEL 0.7.C	Liquid	96-64-0		>1400 [8]							
Soman (GD), MIL-STD-282 (100 g/m^2)	Liquid	96-64-0		>480 [8]							
Spiritus	Liquid	64-17-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Styrene	Liquid	100-42-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Sulfamic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Sulfamidic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Sulfur Mustard (HD), FINABEL 0.7.C	Liquid	505-60-2		>1400 [8]							
Sulfur Mustard (HD), MIL-STD-282 (100 g/m^2)	Liquid	505-60-2		>480 [8]							
Sulfur dioxide	Vapor	7446-09-5	24*	24*	24*	1	2.6	0.34			
Sulfuric acid (>95% at 50 °C)	Liquid	7664-93-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Sulfuric acid (>95%)	Liquid	7664-93-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Sulfuric acid diethyl ester	Liquid	64-67-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Sulfuric acid dimethyl ester	Liquid	77-78-1	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Sulfuric acid fuming (20%)	Liquid	8014-95-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Sulfuric acid fuming (40%)	Liquid	8014-95-7	130*	455*	>480	6	0.32	0.0001			
Sulfuric acid fuming (65%)	Liquid	8014-95-7	180	248	370	5	nm	0.04	398	428	5
Sulfuryl chloride	Liquid	7791-25-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Tabun (GA), FINABEL 0.7.C	Liquid	77-81-6		>1400 [8]							
Tabun (GA), MIL-STD-282 (100 g/m^2)	Liquid	77-81-6		>480 [8]							
Tetrachloro bisphenol-A, 2,2',6,6'-	Solid	79-95-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Tetrachloro ethane, 1,1,2,2,-	Liquid	79-34-5	>480	>480	>480	6	<0.008	0.008	<3.84	>480	6
Tetrachloro ethylene, 1,1,2,2-	Liquid	127-18-4	>480	>480	>480	6	<0.05	0.05	<24		6
Tetrachloro methane	Liquid	56-23-5	4*	4*	>480	6	0.57	0.001			
Tetraethylene pentamine	Liquid	112-57-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Tetrafluoroethane, 1,1,1,2-	Vapor	811-97-2	>480	>480	>480	6	<0.04	0.04	<19.2	<480	6

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

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Tetramethyl ammonium hydroxide (25%)	Liquid	75-59-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Thioglycolic acid	Liquid	68-11-1	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Thionyl chloride	Liquid	7719-09-7	21	21	33	3	nm	0.1	nm	47	2
Thiotepa (10 mg/ml)	Liquid	52-24-4	imm	>240	>240	5	<0.1	0.001			
Tin chloride, mono-n-butyl	Liquid	1118-46-3	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Tin chloride, tri-n-butyl	Liquid	1461-22-9	nm	nm	>480	6	nm	0.2			
Titan(IV) chloride	Liquid	7550-45-0	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Titanium tetrachloride	Liquid	7550-45-0	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Toluene	Liquid	108-88-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Toluene diisocyanate, 2.4-	Liquid	584-84-9	>480	>480	>480	6	<0.0216	0.0216	<10.4	>480	6
Toluene diisocyanate, 2.4- (80%)	Liquid	584-84-9	>480	>480	>480	6	<0.0281	0.0281	<13.5	>480	6
Toluidine, o-	Liquid	95-53-4	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Tributyl amine	Liquid	102-82-9	>480>	>480	>480	6	<0.04	0.04	<19.2	>480	6
Trichloro acetic acid	Liquid	76-03-9	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Trichloro acetone, 1,1,3-	Liquid	921-03-9	nm	nm	>480	6	nm	0.05			
Trichloro benzene, 1,2,4-	Liquid	120-82-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Trichloro ethane, 1,1,2-	Liquid	79-00-5	120*	164*	202*	4	9.1	0.01			
Trichloro ethanol, 2,2,2-	Liquid	115-20-8	>480	>480	>480	6	<0.008	0.008	<3.84	>480	6
Trichloro ethylene	Liquid	79-01-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trichloro methane	Liquid	67-66-3	4*	8	8		10.6	0.001			
Trichloro phenylsilane	Liquid	98-13-5	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Triethyl amine	Liquid	121-44-8	>480	>480	>480	6	0.05	0.05	<24	>480	6
Triethylentetramine (60%)	Liquid	112-24-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Trifluoro acetic acid	Liquid	76-05-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trifluoro methansulfonic acid	Liquid	1493-13-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trifluoro-2-(trifluoromethyl)propene, 3,3,3-	Vapor	382-10-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Trimethyl chinon (30 °C)	Liquid	935-92-2	nm	nm	>480	6	nm	0.05			
VX Nerve Agent, FINABEL 0.7.C	Liquid	50782-69-9		>1400 [8]							
VX Nerve Agent, MIL-STD-282 (100 g/m^2)	Liquid	50782-69-9		>480[8]							
Vinyl acetate	Liquid	108-05-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Vinyl benzol	Liquid	100-42-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Vinyl carbinol	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Vinyl chloride	Vapor	75-01-4	imm	>480	>480	6	0.02	0.001	<9.6	>480	6
Vinyl cyanide	Liquid	107-13-1	4	8*	>480	6	0.57	0.01			
Vinyl ethylene (gaseous)	Vapor	106-99-0	4*	>480	>480	6	0.005	0.001			
Vinylidene chloride	Liquid	75-35-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
White spirit	Liquid	N/A	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Xylene, mixed isomers	Liquid	1330-20-7	>480	>480	>480	6	<0.001	0.001	<4.8	>480	6

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

< test="%{productPermData16.size() > 0}">

Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO

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

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Permeation Data for Tychem® 6000

Hazard Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO

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

< test="%{productPermData1.size() > 0}">

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 (EN369, ASTM F739, EN 374-3, EN ISO 6529 (method A and B) or ASTM D6978)
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 at room temperature and 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 steady state 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/ 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 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: 30/05/2018

- The garment does not protect against ionizing radiation.
- 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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