FIREBREAK SA
SAFETY APPLIANCES PTY LTD

DUPONT™ DUPONT™ TYCHEM® 2000 TAPE

TECHNICAL DATA SHEET

PRODUCT INFORMATION

DuPont™ Tychem® 2000 Tape. Chemical barrier tape, Cat. I certified. Tested against 95 chemicals. Width 48 mm, length 50 m. Yellow.

ATTRIBUTES

Full Part Number	QC00990YLNL
Fabric/Materials	Tychem® 2000
Design	Tape
Color	Yellow
Sizes	One size
Quantity/Box	12 rolls per case

FEATURES

- Certified according to Regulation (EU) 2016/425
- PPE Category I
- Chemical protection against inorganic acids and bases
- Permeation data available for 95 chemicals, allowing comparison and match between the protection level of the chemical protective garment and the chemical glove
- High elongation for better and smoother seal
- Optimum level of elasticity and adhesion

SIZETABLE

PRODUCT SIZE	ARTICLE NUMBER	ADDITIONAL INFO
One size	D15542741	

PERMEATION DATA DUPONT™ DUPONT™ TYCHEM® 2000 TAPE

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
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		5.9				
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			
Amido sulfonic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
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			
Black Liquor (mix)	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
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			

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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			
Carmustine (3.3 mg/ml, 10 % Ethanol)	Liquid	154-93-8	49*/129	>240	>240	5	0.012	<0.01		>240	5
Caustic ammonia (28% - 30%)	Liquid	1336-21-6	imm	imm	imm		62	0.035			
Caustic soda (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.016	0.016	<7.7	>480	6
Chlorine (20 ppm)	Vapor	7782-50-5		>480[8]							
Chlorine (gaseous)	Vapor	7782-50-5	imm	imm	imm		>50	0.2			
Chloro 2-nitrobenzene, 1-	Solid	88-73-3	15	15	15	1	4.1	0.1			
Chloro acetic acid (80%)	Liquid	79-11-8	>480	>480	>480	6	0.038	0.038	<18.3	>480	6
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			
Cresol o-	Liquid	95-48-7	12	13	20	1	15.3	0.0174			
Cresols, mixed isomers	Liquid	1319-77-3	70	71	77	3	11.7	0.0169			
Cresylic acid	Liquid	1319-77-3	70	71	77	3	11.7	0.0169			
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			
Cyclo phosphamide (20 mg/ml)	Liquid	50-18-0	>240	>240	>240	5	<0.01	<0.01		>240	5
Diaminoethane, 1,2-	Liquid	107-15-3	25	>480	>480	6	0.004	0.005			
Dichloro methane	Liquid	75-09-2	imm	imm	imm		>50	0.001			
Diesel automotive test fuel	Liquid	mix	imm	imm			3.29	0.01			
Diethyl amine	Liquid	109-89-7	imm	imm	imm		64.3	0.017 ppm			
Dimethyl acetamide, N,N- (8%)	Liquid	127-19-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Dimethyl formamide, N,N-	Liquid	68-12-2	imm	imm	>480	6	0.73	0.001			
Dimethyl ketal	Liquid	67-64-1	imm	imm	imm		5.9				
Dimethyl ketone	Liquid	67-64-1	imm	imm	imm		5.9				
Diphenyl methane diisocyanate, 4,4'- (50 °C, molten)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6
Disodium sulfide (60% (slurry))	Liquid	1313-82-2		>480	>480	6	<0.1	0.052			
Doxorubicin HCl (2 mg/ml)	Liquid	25136-40-9	>240	>240	>240	5	<0.01	<0.01		>240	5
DuPont Activator 193S (mix)	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
DuPont Activator 4505S (mix)	Liquid	mix	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
DuPont Activator 4507S (mix)	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Epoxy ethane (gaseous)	Vapor	75-21-8	imm	imm	imm		170	0.02			
Ethane 1,2-diol	Liquid	107-21-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethane nitrile	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Ethyl acetate	Liquid	141-78-6	imm	imm	imm		12.7	0.11 ppm			
Ethyl ethanamine, N-	Liquid	109-89-7	imm	imm	imm		64.3	0.017 ppm			
Ethyl nitrile	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			

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Ethylene carboxylic acid	Liquid	79-10-7	imm	imm	imm		5.4	0.2			
Ethylene chlorohydrin	Liquid	107-07-3	imm	imm	imm		3.1	0.06 ppm			
Ethylene diamine	Liquid	107-15-3	25	>480	>480	6	0.004	0.005			
Ethylene glycol	Liquid	107-21-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethylene oxide (gaseous)	Vapor	75-21-8	imm	imm	imm		170	0.02			
Ethylene tetrachloride	Liquid	127-18-4	imm	imm	imm		>400	0.11 ppm			
Etoposide (Toposar®, Teva) (20 mg/ml, 33.2 % (v /v) Ethanol)	Liquid	33419-42-0	>240	>240	>240	5	<0.01	<0.01		>240	5
Fluorouracil, 5- (50 mg/ml)	Liquid	51-21-8	>240	>240	>240	5	<0.01	<0.01		>240	5
Formalin (3.7%, 1-1.5% Methanol)	Liquid	50-00-0	>480	>480	>480	6	<0.0048	0.0048	<2.3	>480	6
Formalin (37% (10-15% Methanol))	Liquid	50-00-0	imm	imm	>480	6	0.84	0.0048			
Fuel-oil no 2	Liquid	68476-30-2	imm	imm	imm		1.776	0.01			
Glutaral (5%)	Liquid	111-30-8	>480	>480	>480	6	<0.005	0.005	<48	>480	6
Glutaraldehyde (5%)	Liquid	111-30-8	>480	>480	>480	6	<0.005	0.005	<48	>480	6
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			
Green Liquor (mix)	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hexamethylene diisocyanate	Liquid	822-06-0	>480	>480	>480	6	<0.0271	0.0271	<13.0	>480	6
Hexane, n-	Liquid	110-54-3	imm	imm	imm		407	0.035 ppm			
Hydrochloric acid (37%)	Liquid	7647-01-0	65	140	450	5	0.746	0.01			
Hydrofluoric acid (48-51%)	Liquid	7664-39-3	166*/200	446	>480	6	<0.12	0.025	9.3	>480	6
Hydrogen chloride (gaseous)	Vapor	7647-01-0	imm	imm	imm						
Hydrogen fluoride (20-27 ° C, gaseous)	Vapor	7664-39-3	imm	imm			6	0.2 ppm			
Hydrogen peroxide (30%)	Liquid	7722-84-1	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydrogen peroxide (50%)	Liquid	7722-84-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Hydrogen peroxide (70%)	Liquid	7722-84-1	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydroxy toluene, o-	Liquid	95-48-7	12	13	20	1	15.3	0.0174			
Isopropanol	Liquid	67-63-0	imm	imm	imm		8	0.04			
Isopropanol (70%)	Liquid	67-63-0	imm	imm	imm		6.3	0.0097			
Isopropyl alcohol	Liquid	67-63-0	imm	imm	imm		8	0.04			
Isopropyl alcohol (70%)	Liquid	67-63-0	imm	imm	imm		6.3	0.0097			
Ketone propane	Liquid	67-64-1	imm	imm	imm		5.9				
Limonene d-	Liquid	5989-27-5	imm	imm	imm		29.8	0.02			
Lithium chloride (20%)	Liquid	7447-41-8	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Lithium hydroxide (14.9%)	Liquid	1310-65-2	>480	>480	>480	6	<0.05	0.05	<24	>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		358.7	0.92 ppm			
Methyl 4-isopropenyl-1-cyclohexene, 1-	Liquid	5989-27-5	imm	imm	imm		29.8	0.02			
Methyl acetyl	Liquid	67-64-1	imm	imm	imm		5.9				
Methyl benzol	Liquid	108-88-3	imm	imm	imm			0.04			
Methyl chloride (gaseous)	Vapor	74-87-3	imm	imm	>480	6	0.23	0.001			
Methyl cyanide	Liquid	75-05-8	imm	imm	imm		9.4	0.13 ppm			
Methyl ketone	Liquid	67-64-1	imm	imm	imm		5.9				
Methyl phenols	Liquid	1319-77-3	70	71	77	3	11.7	0.0169			

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Methyl salicylate	Liquid	119-36-8	<15	<15	>480	6	0.5	0.01			
Methylene chloride	Liquid	75-09-2	imm	imm	imm		>50	0.001			
Methylene diphenyl diisocyanate, 4,4'- (50 °C, molten)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6
Mineral spirit	Liquid	64475-85-0	imm	imm	imm						
Nitric acid (70%)	Liquid	7697-37-2	260	388	>480	6	na	0.01	16.3		
Nitro benzene	Liquid	98-95-3	imm	imm	imm		17.7	0.001			
Nitro chlorobenzene, p-	Solid	100-00-5	imm	imm	imm		2.3	0.1			
Nitro toluene, p-	Solid	99-99-0	imm	imm	imm		14	0.1			
Oleum (103% (13% free SO3))	Liquid	8014-95-7	220	230	430	5	1.13	0.03			
Oleum (20% free SO3)	Liquid	8014-95-7	30	60	420	5	1.126	0.01			
Paclitaxel (Hospira) (6 mg /ml, 49.7 % (v/v) Ethanol)	Liquid	33069-62-4	>240	>240	>240	5	<0.01	<0.01		>240	5
Pentanedial, 1,5- (5%)	Liquid	111-30-8	>480	>480	>480	6	<0.005	0.005	<48	>480	6
Phenol (85%)	Liquid	108-95-2	imm	11	>480	6	0.4	0.05			
Phenyl amine	Liquid	62-53-3	imm	imm	imm		2.1	0.14			
Polymethylene polyphenyle isocyanate (p-MDI)	Liquid	9016-87-9	>480	>480	>480	6	0.0303	0.0303	<14.5	>480	6
Potassium cyanide (10%)	Liquid	151-50-8	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Potassium hydroxide (45%)	Liquid	1310-58-3	>480	>480	>480	6	<0.023	0.023	<11	>480	0
Potassium permanganate (sat)	Liquid	7722-64-7	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Propan -2-ol	Liquid	67-63-0	imm	imm	imm		8	0.04			
Propan -2-ol (70%)	Liquid	67-63-0	imm	imm	imm		6.3	0.0097			
Propan -2-one	Liquid	67-64-1	imm	imm	imm		5.9				
Propene acid	Liquid	79-10-7	imm	imm	imm		5.4	0.2			
Propenenitrile, 2-	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
Propenoic acid nitrile	Liquid	107-13-1	imm	imm	imm		10.6	0.005			
Pyroacetic ether	Liquid	67-64-1	imm	imm	imm		5.9				
Sodium hydroxide (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.016	0.016	<7.7	>480	6
Sodium hypochlorite (15%)	Liquid	7681-52-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Sodium hypochlorite (5.25-6%)	Liquid	7681-52-9	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Sodium metabisulphite (38%)	Liquid	7681-57-4		imm							
Sodium silicate (40-42%)	Liquid	6834-92-0	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Sulfamic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Sulfamidic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Sulfur dioxide	Vapor	7446-09-5	imm	imm			>29	0.14			
Sulfuric acid (>95%)	Liquid	7664-93-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Sulfuric acid fuming (103% (13% free SO3))	Liquid	8014-95-7	220	230	430	5	1.13	0.03			
Sulfuric acid fuming (20% free SO3)	Liquid	8014-95-7	30	60	420	5	1.126	0.01			
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	<0.01	0.01	<4.8	>480	6

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Thiotepa (10 mg/ml)	Liquid	52-24-4	69*/93	>240	>240	5	0.02	<0.01		>240	5
Toluene	Liquid	108-88-3	imm	imm	imm			0.04			
Toluene diisocyanate, 2,4-	Liquid	584-84-9	imm	imm	imm		7	0.01			
Toluene diisocyanate, 2,4- (80%)	Liquid	584-84-9	59	60	97	3	6.75	0.0281			
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			
Trifluoro ethanol, 2,2,2-	Liquid	75-89-8	imm	imm	imm						
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			
White Liquor	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6

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 orshorter 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

DuPont™ SafeSPEC™ - We're here to help

Our powerful web-based tool can assist you with finding the

appropriate DuPont garments for chemical, controlled environment, thermal and mechanical hazards.

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CREATED ON: NOVEMBER 8, 2021