

# BR528T YL

DuPont™ Tychem® BR



## Chemical Resistance Data

### Testing Details

#### Tychem® BR - Fabric Data

Hazard / Chemical Name	CAS Number	Phase	Breakthrough Time (average, normalized to 0.1 ug/cm <sup>2</sup> /min) / Performance
1,1,2,2-Tetrachloroethylene	127-18-4	Liquid	>480
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	Vapor	>480
1,3-Butadiene (gas)	106-99-0	Vapor	>480
1,5-Pentanedial (5% in water)	111-30-8	Liquid	>480
1,5-Pentanedial (50%)	111-30-8	Liquid	>480

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Hazard / Chemical Name	CAS Number	Phase	Breakthrough Time (average, normalized to 0.1 ug/cm <sup>2</sup> /min) / Performance
1-Aminobutane	109-73-9	Liquid	>480
Acetaldehyde	75-07-0	Liquid	>480
Acetic acid	64-19-7	Liquid	339
Acetic anhydride	108-24-7	Liquid	>480
Acetone	67-64-1	Liquid	>480
Acetone cyanohydrin	75-86-5	Liquid	>480
Acetonitrile	75-05-8	Liquid	>480
Acetyl chloride	75-36-5	Liquid	181
Acrolein	107-02-8	Liquid	>480
Acrylamide (50% in water)	79-06-1	Liquid	>480
Acrylic acid	79-10-7	Liquid	270
Acrylonitrile	107-13-1	Liquid	>480
Acrylonitrile (10 g/m <sup>2</sup> )	107-13-1	Liquid	>480
Adiponitrile	111-69-3	Liquid	>480
Allyl alcohol	107-18-6	Liquid	>480
Allyl chloride	107-05-1	Liquid	>480
Aminobutane, 1-	109-73-9	Liquid	>480
Ammonia (gas)	7664-41-7	Vapor	46
Ammonium fluoride (40%)	12125-01-8	Liquid	>480
Ammonium hydroxide (28%-30%)	1336-21-6	Liquid	160
Amyl acetate, n-	628-63-7	Liquid	>480
Anhydrous ammonia (gas)	7664-41-7	Vapor	46
Aniline	62-53-3	Liquid	>480
Arsine	7784-42-1	Vapor	>480
Asbestos (all forms)	1332-21-4	Solid	May be Suitable for Use
Benzene	71-43-2	Liquid	>480

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Benzene sulfonyl chloride	98-09-9	Liquid	>480
Benzidine (25% in methanol)	92-87-5	Liquid	>480
Benzonitrile	100-47-0	Liquid	>480
Benzoyl chloride	98-88-4	Liquid	>480
Benzyl chloride	100-44-7	Liquid	>480
Beryllium	7440-41-7	Solid	May be Suitable for Use
Biological fluids w/ potentially infectious diseases	unknown	Liquid	May be Suitable for Use
Bisphenol-A diglycidyl ether	1675-54-3	Liquid	>480
Black liquor	308074-23-9	Liquid	>480
Blood	unknown	Liquid	May be Suitable for Use
Blood w/ potentially infectious diseases	unknown	Liquid	May be Suitable for Use
Bodily fluids	unknown	Liquid	May be Suitable for Use
Bodily fluids w/ potentially infectious diseases	unknown	Liquid	May be Suitable for Use
Boron trichloride	10294-34-5	Vapor	>480
Boron trifluoride	7637-07-2	Vapor	>480
Bromine	7726-95-6	Liquid	imm.
Bromofluorobenzene, 4-	460-00-4	Liquid	>480
Butadiene, 1,3- (gas)	106-99-0	Vapor	>480
Butan-1-amine	109-73-9	Liquid	>480
Butanol, n-	71-36-3	Liquid	>480
Butyl acetate, n-	123-86-4	Liquid	>480
Butyl acrylate, n-	141-32-2	Liquid	51
Butyl ether, n-	142-96-1	Liquid	>480
Butylamine, n-	109-73-9	Liquid	>480
Butyraldehyde, n-	123-72-8	Liquid	>480
Carbon disulfide	75-15-0	Liquid	>480

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Carbon monoxide	630-08-0	Vapor	330
Carbon tetrachloride	56-23-5	Liquid	>480
Caustic potash (45%)	1310-58-3	Liquid	>480
Caustic soda (42-50%)	1310-73-2	Liquid	>480
Chlordane	57-74-9	Liquid	>480
Chlorine (gas)	7782-50-5	Vapor	>480
Chlorine dioxide (1000 ppm)	10049-04-4	Vapor	>480
Chlorine dioxide (150 ppm)	10049-04-4	Vapor	>480
Chlorine sulfide (80%)	10545-99-0	Liquid	70
Chlorine trifluoride	7790-91-2	Vapor	45
Chloro-1,2-propanediol, 3-	96-24-2	Liquid	>480
Chloroacetic acid	79-11-8	Liquid	>480
Chloroacetic acid (70%-80%)	79-11-8	Liquid	>480
Chloroacetyl chloride	79-04-9	Liquid	160
Chloroaniline, 4-	106-47-8	Solid	>480
Chloroaniline, 4- (70° C)	106-47-8	Liquid	344
Chloroaniline, p-	106-47-8	Solid	>480
Chloroaniline, p- (70° C)	106-47-8	Liquid	344
Chlorobenzene	108-90-7	Liquid	>480
Chloroethanol, 2-	107-07-3	Liquid	>480
Chloroform	67-66-3	Liquid	>480
Chloromethyl methyl ether	107-30-2	Liquid	>480
Chlorophenol, 4- (sat. sol. in methanol)	106-48-9	Liquid	>480
Chlorosulfonic acid	7790-94-5	Liquid	180
Chlorotoluene, o-	95-49-8	Liquid	>480
Cresol, mixed isomers	1319-77-3	Liquid	>480

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Crude oil	8002-05-9	Liquid	>480
Cumene	98-82-8	Liquid	>480
Cyanuric chloride (20%, Toluene 80%)	108-77-0	Liquid	>480
Cyclohexane	110-82-7	Liquid	>480
Cyclohexanone	108-94-1	Liquid	>480
Diborane (10%)	19287-45-7	Vapor	>480
Dichloro-6-isopropyl-S-triazine, 2,4- (22% in toluene)	30894-74-7	Liquid	>480
Dichloroacetone (40° C)	534-07-6	Liquid	>480
Dichloroacetyl chloride	79-36-7	Liquid	100
Dichloroaniline, 3,4- (liquid, 70° C)	95-76-1	Liquid	284
Dichloroaniline, 3,4- (solid)	95-76-1	Solid	>480
Dichloroethyl ether	111-44-4	Liquid	>480
Dichloromethane	75-09-2	Liquid	432
Dichloropropene,2,3-	78-88-6	Liquid	>480
Dichlorosilane	4109-96-0	Vapor	>480
Diesel fuel	68334-30-5	Liquid	>480
Diethylamine	109-89-7	Liquid	>480
Diethylenetriamine	111-40-0	Liquid	>480
Diethylhexyl phthalate	117-81-7	Liquid	>480
Diiodo-1,1,2,2-tetrafluorobutane, 1,4-	755-95-3	Liquid	>480
Dimethyl sulfate	77-78-1	Liquid	>480
Dimethyl sulfoxide	67-68-5	Liquid	>480
Dimethyl-acetamide, N,N-	127-19-5	Liquid	>480
Dimethylaniline, N,N-	121-69-7	Liquid	>480
Dimethylene oxide (gas)	75-21-8	Vapor	>480
Dimethylene oxide (liquid, 0° C)	75-21-8	Liquid	>480

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Hazard / Chemical Name	CAS Number	Phase	Breakthrough Time (average, normalized to 0.1 ug/cm <sup>2</sup> /min) / Performance
Dimethylformamide, N,N-	68-12-2	Liquid	>480
Dimethylhydrazine, 1,1-	57-14-7	Liquid	>480*
Dinitrocresol (sat. sol. in methanol)	534-52-1	Liquid	>480
Dioxane, 1,4-	123-91-1	Liquid	>480
Dirt (general)	unknown	Solid	May be Suitable for Use
Disodium sulfide (60% w/w in water slurry)	1313-82-2	Liquid	>480
Disulfur dichloride	10025-67-9	Liquid	>480
Epichlorohydrin	106-89-8	Liquid	>480
Epoxyethane (gas)	75-21-8	Vapor	>480
Epoxyethane (liquid, 0° C)	75-21-8	Liquid	>480
Ethanolamine	141-43-5	Liquid	>480
Ethyl Cellosolve®	110-80-5	Liquid	>480
Ethyl Cellosolve® acetate	111-15-9	Liquid	>480
Ethyl acetate	141-78-6	Liquid	>480
Ethyl acrylate	140-88-5	Liquid	14
Ethyl benzene	100-41-4	Liquid	>480
Ethyl ether	60-29-7	Liquid	>480
Ethyl parathion	56-38-2	Liquid	>480
Ethylamine (15° C)	75-04-7	Liquid	361
Ethylene dibromide	106-93-4	Liquid	>480
Ethylene dichloride	107-06-2	Liquid	>480
Ethylene glycol	107-21-1	Liquid	>480
Ethylene oxide (gas)	75-21-8	Vapor	>480
Ethylene oxide (liquid, 0° C)	75-21-8	Liquid	>480
Ethylenediamine	107-15-3	Liquid	>480
Ethyleneimine	151-56-4	Liquid	59

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Feces (solid)	unknown	Solid	May be Suitable for Use
Fertilizer (general; solid form)	unknown	Solid	May be Suitable for Use
Fiberglass	unknown	Solid	May be Suitable for Use
Fluorobenzene	462-06-6	Liquid	>480
Fluorosilicic acid	16961-83-4	Liquid	>480
Fluorosulfonic acid	7789-21-1	Liquid	>480
Formaldehyde (100 ppm)	50-00-0	Vapor	>480
Formalin	mixture	Liquid	>480
Formic acid	64-18-6	Liquid	>480
Fungicide (general; solid form)	unknown	Solid	May be Suitable for Use
Furfural	98-01-1	Liquid	>480
Gasoline	86290-81-5	Liquid	>480
Glutaric acid dialdehyde (5% in water)	111-30-8	Liquid	>480
Glutaric acid dialdehyde (50%)	111-30-8	Liquid	>480
Glutaric aldehyde (5% in water)	111-30-8	Liquid	>480
Glutaric aldehyde (50%)	111-30-8	Liquid	>480
Gluteraldehyde (5% in water)	111-30-8	Liquid	>480
Gluteraldehyde (50%)	111-30-8	Liquid	>480
Glycolic acid (sat. sol. in water)	79-14-1	Liquid	>480
Green liquor	68131-30-6	Liquid	>480
HCN (Hydrogen cyanide) (gas)	74-90-8	Vapor	>480
HCN (Hydrogen cyanide) (liquid, 21° C)	74-90-8	Liquid	105
Hazardous Particles (larger than 0.3 micron in size)	unknown	Solid	May be Suitable for Use
Hazardous Particles (larger than 1 micron in size)	unknown	Solid	May be Suitable for Use
Herbicide (general; solid form)	unknown	Solid	May be Suitable for Use
Hexachlorobutadiene	87-68-3	Liquid	>480

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Hexafluoroethane	76-16-4	Vapor	>480
Hexafluoroisobutylene	382-10-5	Vapor	>480
Hexamethyldisilazane	999-97-3	Liquid	>480
Hexamethylene diisocyanate	822-06-0	Liquid	>480
Hexamethylenediamine, 1,6- (45° C)	124-09-4	Liquid	>480
Hexane, n-	110-54-3	Liquid	>480
Hexone	108-10-1	Liquid	>480
Hydrazine	302-01-2	Liquid	>480
Hydrazine hydrate (85%)	10217-52-4	Liquid	440
Hydriodic acid (55-57%)	10034-85-2	Liquid	>480
Hydrochloric acid (37%)	7647-01-0	Liquid	>480
Hydrocyanic acid (gas)	74-90-8	Vapor	>480
Hydrocyanic acid (liquid, 21° C)	74-90-8	Liquid	105
Hydrofluoric acid (48-51%)	7664-39-3	Liquid	>480
Hydrofluoric acid (92% at 90° C)	7664-39-3	Liquid	67*
Hydrogen bromide (gas)	10035-10-6	Vapor	>480
Hydrogen chloride (gas)	7647-01-0	Vapor	>480
Hydrogen cyanide (gas)	74-90-8	Vapor	>480
Hydrogen cyanide (liquid, 21° C)	74-90-8	Liquid	105
Hydrogen fluoride (gas)	7664-39-3	Vapor	135
Hydrogen peroxide (70%)	7722-84-1	Liquid	>480
Hydrogen selenide	7783-07-5	Vapor	>480
Hydrogen sulfide	7783-06-4	Vapor	>480
IPA (Isopropyl alcohol)	67-63-0	Liquid	>480
Insecticide (general; solid form)	unknown	Solid	May be Suitable for Use
Isopropanol	67-63-0	Liquid	>480

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Isopropyl alcohol	67-63-0	Liquid	>480
Isopropylamine	75-31-0	Liquid	>480
JP-4 jet fuel	50815-00-4	Liquid	>480
JP-8 jet fuel	94114-58-6	Liquid	>480
Jet A fuel	8008-20-6	Liquid	>480
KOH (Potassium hydroxide) (45%)	1310-58-3	Liquid	>480
Kerosene	8008-20-6	Liquid	>480
Lead	7439-92-1	Solid	May be Suitable for Use
Lewisite (10 g/m <sup>2</sup> )	541-25-3	Liquid	>480
Lewisite (100 g/m <sup>2</sup> )	541-25-3	Liquid	120
Lime	mixture	Solid	May be Suitable for Use
Lindane (sat. sol. in acetone)	58-89-9	Liquid	>480
Lye (42-50%)	1310-73-2	Liquid	>480
MEK (Methyl ethyl ketone)	78-93-3	Liquid	>480
MIBK (Methyl isobutyl ketone)	108-10-1	Liquid	>480
Malathion	121-75-5	Liquid	>480
Malathion (50% in methanol)	121-75-5	Liquid	>480
Mercuric chloride (sat. sol. in water)	7487-94-7	Liquid	>480*
Mercury	7439-97-6	Liquid	>480
Methacrylic acid	79-41-4	Liquid	>480
Methane sulfonyl chloride	124-63-0	Liquid	>480
Methanol	67-56-1	Liquid	157
Methomyl (29% in water)	16752-77-5	Liquid	>480
Methyl Cellosolve®	109-86-4	Liquid	>480
Methyl Cellosolve® acetate	110-49-6	Liquid	>480
Methyl acrylate	96-33-3	Liquid	>480

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Methyl bromide	74-83-9	Vapor	>480
Methyl chloride (gas)	74-87-3	Vapor	>480
Methyl chloroformate	79-22-1	Liquid	>480
Methyl ethyl ketone	78-93-3	Liquid	>480
Methyl ethyl ketoxime	96-29-7	Liquid	>480
Methyl fluoride	593-53-3	Vapor	>480
Methyl hydrazine	60-34-4	Liquid	>480
Methyl iodide	74-88-4	Liquid	>480
Methyl isobutyl ketone	108-10-1	Liquid	>480
Methyl isocyanate	624-83-9	Liquid	>480
Methyl mercaptan	74-93-1	Vapor	>480
Methyl methacrylate	80-62-6	Liquid	>480
Methyl tert-butyl ether	1634-04-4	Liquid	>480
Methyl trichlorosilane	75-79-6	Liquid	>480
Methyl-1,5-pentanedinitrile, 2- (87%)	4553-62-2	Liquid	>480
Methyl-2-pyrrolidone, N-	872-50-4	Liquid	>480
Methylamine	74-89-5	Vapor	105
Methylamine (40% in water)	74-89-5	Liquid	261
Methylamine (50% in water)	74-89-5	Liquid	232
Methylene bis (o-chloroaniline), 4,4'- (sat. sol. in methanol)	101-14-4	Liquid	>480
Methylene chloride	75-09-2	Liquid	432
Methylene dianiline, 4,4'- (15% in MEK)	101-77-9	Liquid	>480
Methylene diphenyl isocyanate	101-68-8	Solid	>480
Methylglutaronitrile, 2- (87%)	4553-62-2	Liquid	>480
Mineral spirits	64475-85-0	Liquid	>480

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Hazard / Chemical Name	CAS Number	Phase	Breakthrough Time (average, normalized to 0.1 ug/cm <sup>2</sup> /min) / Performance
Mold spores	unknown	Solid	May be Suitable for Use
Morpholine	110-91-8	Liquid	>480
Muriatic acid (37%)	7647-01-0	Liquid	>480
N,N-Dimethylformamide	68-12-2	Liquid	>480
NaOH (Sodium hydroxide) (42-50%)	1310-73-2	Liquid	>480
Nicotine	54-11-5	Liquid	>480
Nitric acid (70%)	7697-37-2	Liquid	>480
Nitric acid (90%)	7697-37-2	Liquid	>480
Nitric acid, red fuming	52583-42-3	Liquid	>480
Nitrobenzene	98-95-3	Liquid	>480
Nitrogen tetroxide (gas)	10544-72-6	Vapor	90
Nitrogen tetroxide (liquid, 0° C)	10544-72-6	Liquid	>480
Nitrogen trifluoride	7783-54-2	Vapor	>480
Nitromethane	75-52-5	Liquid	>480
Nitrophenol, o- (70° C)	88-75-5	Liquid	208
Nitropropane, 2-	79-46-9	Liquid	>480
Nitrous oxide	10024-97-2	Vapor	>480
Non-Hazardous Particles (larger than 0.3 micron in size)	unknown	Solid	May be Suitable for Use
Non-Hazardous Particles (larger than 1 micron in size)	unknown	Solid	May be Suitable for Use
Octane, n-	111-65-9	Liquid	>480
Oleum (40% free SO <sub>3</sub> )	8014-95-7	Liquid	>480
Oxalic acid (10.5%)	144-62-7	Liquid	>480
PCB (50% in trichlorobenzene)	mixture	Liquid	>480
Paraphenylene diisocyanate (PPDI) crude	104-49-4	Liquid	>480

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Pentachlorophenol (sat. sol. in methanol)	87-86-5	Liquid	>480
Pentanedial, 1,5- (5% in water)	111-30-8	Liquid	>480
Pentanedial, 1,5- (50%)	111-30-8	Liquid	>480
Pentenenitrile, 3-	4635-87-4	Liquid	>480
Perchloric acid (70%)	7601-90-3	Liquid	>480
Pesticide (general; solid form)	unknown	Solid	May be Suitable for Use
Phenol	108-95-2	Liquid	>480
Phenol (88% at 45° C)	108-95-2	Liquid	135
Phosgene	75-44-5	Vapor	>480
Phosphine	7803-51-2	Vapor	>480
Phosphoric acid (85%)	7664-38-2	Liquid	>480
Phosphorus oxychloride	10025-87-3	Liquid	>480
Phosphorus trichloride	7719-12-2	Liquid	>480
Picoline, 2-	109-06-8	Liquid	46
Picoline, 3-	108-99-6	Liquid	11
Polychlorinated biphenyl (50% in trichlorobenzene)	mixture	Liquid	>480
Polymethylene polyphenyl-polyisocyanate	9016-87-9	Liquid	>480
Potash lye (45%)	1310-58-3	Liquid	>480
Potassium acetate (sat. sol. in water)	127-08-2	Liquid	>480*
Potassium chromate (sat. sol. in water)	7789-00-6	Liquid	>480*
Potassium hydroxide (45%)	1310-58-3	Liquid	>480
Propylene dichloride	78-87-5	Liquid	>480
Propylene imine	75-55-8	Liquid	150
Propylene oxide, 1,2-	75-56-9	Liquid	>480
Pyridine	110-86-1	Liquid	>480
Pyrrolidine	123-75-1	Liquid	413

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Radioactive particles	unknown	Solid	May be Suitable for Use
Sarin (10 g/m <sup>2</sup> )	107-44-8	Liquid	>480
Sarin (100 g/m <sup>2</sup> )	107-44-8	Liquid	>480
Silane	7803-62-5	Vapor	>480
Silicon tetrachloride	10026-04-7	Liquid	>480
Sodium disulfite (38% w/w in water)	7681-57-4	Liquid	>480
Sodium hydroxide (42-50%)	1310-73-2	Liquid	>480
Sodium metabisulfite (38% w/w in water)	7681-57-4	Liquid	>480
Sodium methylate (50% in methanol)	124-41-4	Liquid	>480
Sodium pyrosulfite (38% w/w in water)	7681-57-4	Liquid	>480
Sodium sulfide (60% w/w in water slurry)	1313-82-2	Liquid	>480
Soman (10 g/m <sup>2</sup> )	96-64-0	Liquid	>480
Stoddard solvent	8052-41-3	Liquid	>480
Styrene	100-42-5	Liquid	>480
Sulfamic acid (15%)	5329-14-6	Liquid	>480
Sulfonyl chloride	7791-25-5	Liquid	>480
Sulfur chloride	10025-67-9	Liquid	>480
Sulfur dichloride (80%)	10545-99-0	Liquid	70
Sulfur dioxide	7446-09-5	Vapor	>480
Sulfur hexafluoride	2551-62-4	Vapor	>480
Sulfur monochloride	10025-67-9	Liquid	>480
Sulfur mustard (10 g/m <sup>2</sup> )	505-60-2	Liquid	>480
Sulfur mustard (100 g/m <sup>2</sup> )	505-60-2	Liquid	>480
Sulfur trioxide	7446-11-9	Liquid	90
Sulfuric acid	7664-93-9	Liquid	>480
Tabun (10 g/m <sup>2</sup> )	77-81-6	Liquid	>480

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Tar balls	unknown	Solid	May be Suitable for Use
Tetrachloroethane, 1,1,2,2-	79-34-5	Liquid	>480
Tetrachloroethylene, 1,1,2,2-	127-18-4	Liquid	>480
Tetraethoxysilane	78-10-4	Liquid	>480
Tetraethyl lead	78-00-2	Liquid	>480
Tetrafluoromethane	75-73-0	Vapor	>480
Tetrahydrofuran	109-99-9	Liquid	>480
Tetramethyltin (0.5% in n-pentane)	mixture	Liquid	>480
Thioglycolic acid	68-11-1	Liquid	>480
Thionyl chloride	7719-09-7	Liquid	35
Titanium tetrachloride	7550-45-0	Liquid	>480
Toluene	108-88-3	Liquid	>480
Toluene-1,3-diisocyanate	26471-62-5	Liquid	>480
Toluene-2,4-diisocyanate	584-84-9	Liquid	>480*
Toluidine, o-	95-53-4	Liquid	>480
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	Vapor	>480
Trichlorobenzene, 1,2,4-	120-82-1	Liquid	>480
Trichloroethane, 1,1,1-	71-55-6	Liquid	>480
Trichloroethane, 1,1,2-	79-00-5	Liquid	>480
Trichloroethanol, 2,2,2-	115-20-8	Liquid	>480
Trichloroethylene	79-01-6	Liquid	>480
Trichlorosilane	10025-78-2	Liquid	>480
Triethylamine	121-44-8	Liquid	>480
Trifluoroethanol, 2,2,2-	75-89-8	Liquid	>480
Trifluoromethane	75-46-7	Vapor	>480
Trifluoromethane sulfonic acid	1493-13-6	Liquid	>480

Tychem® BR - Fabric Data

Hazard / Chemical Name	CAS Number	Phase	Breakthrough Time (average, normalized to 0.1 ug/cm <sup>2</sup> /min) / Performance
Trimethyl phosphate	512-56-1	Liquid	>480
Trimethyl phosphite	121-45-9	Liquid	>480
Tripropylamine	102-69-2	Liquid	>480
Tungsten hexafluoride	7783-82-6	Liquid	>480
VM&P Naphtha	8030-30-6	Liquid	>480
VX Nerve agent (10 g/m <sup>2</sup> )	50782-69-9	Liquid	>480
VX Nerve agent (100 g/m <sup>2</sup> )	50782-69-9	Liquid	>480
Vinyl acetate	108-05-4	Liquid	>480
Vinyl chloride	75-01-4	Vapor	>480
Vinylidene chloride	75-35-4	Liquid	>480
Vinylmagnesium chloride (16.5%)	3536-96-7	Liquid	>480
White liquor	68131-33-9	Liquid	>480
Xylene, mixed isomers	1330-20-7	Liquid	>480
cis-2-Pentenenitrile (70%)	25899-50-7	Liquid	>480
d-Limonene	5989-27-5	Liquid	>480
m-Cresol 55%, p-Cresol 30%, Phenol 15%	mixture	Liquid	>480
n-Hexane	110-54-3	Liquid	>480
t-Sodium-amylate / t-amyl alcohol	mixture	Solid	120
tert-Butylamine	75-64-9	Liquid	>480
trans-Crotonaldehyde	123-73-9	Liquid	>480

### DuPont Fabric Permeation Data - Testing Details

Permeation data obtained per ASTM F739. Normalized breakthrough times (the time at which the permeation rate is equal to 0.1 µg/cm<sup>2</sup>/min) reported in minutes. All liquid chemicals have been tested between approximately 20°C and 27°C unless otherwise stated. All chemicals have been tested at a concentration of greater than 95% unless otherwise stated. Chemical warfare agents (Lewisite, Sarin,

Soman, Sulfur Mustard, Tabun and VX Nerve Agent) have been tested at 22°C and 50% relative humidity per military standard MIL-STD-282.

>	Greater than.
"imm."	Immediate; having a normalized breakthrough time of 10 minutes or less.
blank cells	Fabric has not been tested. The fabric may or may not offer barrier.
*	Actual breakthrough time; normalized breakthrough time is not available.
**	Solid tested, vapor phase permeation measured.
"May be Suitable for Use"	Permeation testing was not conducted.

## Special Warnings

1. \*CAUTION: This information is based upon technical data that DuPont believes to be reliable. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligation or liability in connection with this information. It is the user's responsibility to determine the level of toxicity and the proper personal protective equipment needed. The information set forth herein reflects laboratory performance of fabrics, not complete garments, under controlled conditions. It is intended for informational use by persons having technical skill for evaluation under their specific end-use conditions, at their own discretion and risk. Anyone intending to use this information should first verify that the garment selected is suitable for the intended use. In many cases, seams and closures have shorter breakthrough times and higher permeation rates than the fabric. Please contact DuPont for specific data. If fabric becomes torn, abraded or punctured, or if seams or closures fail, or if attached gloves, visors, etc. are damaged, end user should discontinue use of garment to avoid potential exposure to chemical. Since conditions of use are outside our control, we make no warranties, express or implied, including, without limitation, no warranties of merchantability or fitness for a particular use and assume no liability in connection with any use of this information. This information is not intended as a license to operate under or a recommendation to infringe any patent or technical information of DuPont or others covering any material or its use.  
  
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