DUPONT™ TYCHEM® 10000 FR

TECHNICAL DATA SHEET



PRODUCT INFORMATION

DuPont™ Tychem® 10000 FR Encapsulated Level A Suit. Certified to NFPA 1991. Expanded Back, Front Entry. 4 layer (20 mil polycarbonate/ 40 mil PVC/ 5 mil Teflon® FEP/ 40 mil PVC) face shield. Attached Dual Layer Gloves, Internal: North Silver Shield® / 4H® External: Neoprene. Separate Kevlar® Knit Over Gloves Included. Attached Socks with Outer Boot Flaps. Double Storm Flap with Hook & Loop Closure. Two Exhaust Valves. Double Taped Seams. Silver.

ATTRIBUTES

Full Part Number	RF600TSVxx0001yy (xx=size;yy=option code)
Fabric/Materials	Tychem® 10000 FR
Design	Encap. Level A, Expanded Back, Front Entry. Certified to NFPA 1991.
Seam	Double Taped
Color	Silver
Sizes	SM,MD,LG,XL,2X,3X,4X
Quantity/Box	1 per case
Option Codes	7M,7N,**,00

FEATURES

- Patented design certified compliant to the 2016 edition of NFPA 1991, Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies, without requiring overgarment. Compliant with Base Requirements and Chemical Flash Fire Protection Option and Liquefied Gas Protection Option Requirements of NFPA 1991, 2016 edition. (28)
- Encapsulated Level A garment design is our highest level of protection from liquid splash and vapor/gas exposures for both the wearer and respiratory equipment
- Double taped seams provide strong chemical resistance against heavy liquid splashes. A sewn seam is covered, both inside and outside of garment with compatible chemical-resistant material by heat-sealing.
- 4 layer (20 mil polycarbonate/ 40 mil PVC/ 5 mil Teflon® FEP/ 40 mil PVC) face shield
- Front entry design allows wearer to partially don garment (maintain standby position) without assistance
- Expanded back to accommodate self-contained air breathing apparatus (SCBA)

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL RESULT
Basis Weight	ASTM D3776	16 oz/yd^2
Breaking Strength - Grab (CD)	ASTM D751	230 lb_f
Breaking Strength - Grab (MD)	ASTM D751	180 lb_f
Burst Strength - Ball	ASTM D751	250 lb_f
Puncture, Propagation, Tear Resistance (CD)	ASTM D2582	55 lb_f
Puncture, Propagation, Tear Resistance (MD)	ASTM D2582	45 lb_f
Tear Resistance - Trap Tear (CD)	ASTM D5733	55 lb_f
Tear Resistance - Trap Tear (MD)	ASTM D5733	95 lb_f
Thickness	ASTM D1777	40 mils
Wearing Apparel Flammability	16 CFR 1610	Class 1

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

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TECHNICAL DATA SHEET

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 |

PERMEATION DATA DUPONT™ TYCHEM® 10000 FR

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Acetaldehyde	Liquid	75-07-0	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetic acid (>95%)	Liquid	64-19-7	>480	>480	>480	6	<0.1	0.1	<48	>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	<0.01	0.01	<4.8	>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	<0.05	0.05	<24	>480	6
Acetic acid pentyl ester	Liquid	628-63-7	>480	>480	>480	6	<0.003	0.003	<1.4	>480	6
Acetic anhydride	Liquid	108-24-7	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Acetic chloride	Liquid	75-36-5		>480	>480	6	<0.0126	0.0126			
Acetone	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Acetone cyanohydrin	Liquid	75-86-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetonitrile	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetyl chloride	Liquid	75-36-5		>480	>480	6	<0.0126	0.0126			
Acroleic acid	Liquid	79-10-7	270	270			1.577	0.01			
Acrolein	Liquid	107-02-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Acrylamide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acrylic acid	Liquid	79-10-7	270	270			1.577	0.01			
Acrylic acid ethyl ester	Liquid	140-88-5	14	14			90.8	0.01			
Acrylic acid n-butyl ester	Liquid	141-32-2		51	51	2	18.4	0.01			
Acrylicamide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acrylonitrile	Liquid	107-13-1	>480	>480	>480	6	<0.0003	0.0003			
Adipic acid dinitrile	Liquid	111-69-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Adipic acid nitrile	Liquid	111-69-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Adiponitrile	Liquid	111-69-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Allyl alcohol	Liquid	107-18-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Allyl chloride	Liquid	107-05-1	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Amido sulfonic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Amino 2-methylpropane, 2-	Liquid	75-64-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Amino 3,4-dichlorobenzene, 1-	Solid	95-76-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Amino 3,4-dichlorobenzene, 1- (70 °C, molten)	Liquid	95-76-1	128*/216	216*/284			2.4	0.001			
Amino benzene	Liquid	62-53-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Amino ethanol, 2-	Liquid	141-43-5	>480	>480	>480	6	<0.1	0.1	<48	>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	<0.01	0.01	<4.8	>480	6
Ammonia (-70 °C, liquid)	Liquid	7664-41-7	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6

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TECHNICAL DATA SHEET

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Ammonia (gaseous)	Vapor	7664-41-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ammonium fluoride (40%)	Liquid	12125-01-8		>480	>480	6	<0.1	0.01			
Ammonium hydroxide (28% - 30%)	Liquid	1336-21-6		>480	>480	6	<0.1	0.01			
Amyl acetate, n-	Liquid	628-63-7	>480	>480	>480	6	<0.003	0.003	<1.4	>480	6
Amyl ester acetic acid	Liquid	628-63-7	>480	>480	>480	6	<0.003	0.003	<1.4	>480	6
Aniline	Liquid	62-53-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Arsine	Vapor	7784-42-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Aziridine	Liquid	151-56-4	59	59	>480	6	0.281	0.01			
Azolidine	Liquid	123-75-1	407	413			9.2	0.012			
Benzenamine	Liquid	62-53-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Benzene	Liquid	71-43-2	>480	>480	>480	6	<0.0008	0.0008	<0.48	>480	6
Benzene carbonyl chloride	Liquid	98-88-4	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Benzene sulfone chloride	Liquid	98-09-9	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Benzene sulfonyl chloride	Liquid	98-09-9	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Benzene thiol	Liquid	108-98-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzidine (25% in Methanol)	Liquid	92-87-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Benzo nitrile	Liquid	100-47-0	>480	>480	>480	6	<0.004	0.004	<1.9	>480	6
Benzoyl chloride	Liquid	98-88-4	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Benzyl chloride	Liquid	100-44-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Biphenyl 4,4'-diamine, 1,1'- (25% in Methanol)	Liquid	92-87-5	>480	>480	>480	6	<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
Black Liquor (mix)	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Boron trichloride	Vapor	10294-34-5		>480	>480	6	<0.1	0.00118			
Boron trifluoride	Vapor	7637-07-2	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Bromine	Liquid	7726-95-6	imm	imm	imm		517	0.31			
Bromo 4-fluorobenzene, 1-	Liquid	460-00-4	>480	>480	>480	6	<0.0013	0.0013	<0.6	>480	6
Bromo fluorobenzene, 4-	Liquid	460-00-4	>480	>480	>480	6	<0.0013	0.0013	<0.6	>480	6
Bromo methane	Vapor	74-83-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Butadiene, 1,3- (gaseous)	Vapor	106-99-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butanal, n-	Liquid	123-72-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Butanol, 1-	Liquid	71-36-3	>480	>480	>480	6	<0.002	0.002	<1	>480	6
Butanol, n-	Liquid	71-36-3	>480	>480	>480	6	<0.002	0.002	<1	>480	6
Butanone	Liquid	78-93-3	>480	>480	>480	6	<0.0067	0.0067	<3.2	>480	6
Butanone oxime, 2-	Liquid	96-29-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Butenal, 2-	Liquid	123-73-9		>480	>480	6	<0.1	0.006			
Butyl acetate, n-	Liquid	123-86-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Butyl acrylate, n-	Liquid	141-32-2		51	51	2	18.4	0.01			
Butyl alcohol, n-	Liquid	71-36-3	>480	>480	>480	6	<0.002	0.002	<1	>480	6
Butyl amine	Liquid	109-73-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Butyl amine, tert-	Liquid	75-64-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Butyl ether, n-	Liquid	142-96-1	228*/396	>480	>480	6	0.001	0.001			
Butyraldehyde, n-	Liquid	123-72-8	>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

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Carbon monoxide	Vapor	630-08-0	330	330	>480	6	0.1	0.1			
Carbon tetrachloride	Liquid	56-23-5	>480	>480	>480	6	<0.015	0.015	<7.2	>480	6
Carbon tetrafluoride	Vapor	75-73-0	>480	>480	>480	6	<0.0177	0.0177	<8.5	>480	6
Caustic ammonia (28% - 30%)	Liquid	1336-21-6		>480	>480	6	<0.1	0.01			
Caustic soda (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Cellosolve acetate	Liquid	110-80-5	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Chlor allylene	Liquid	107-05-1	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Chlordane (60-75%)	Liquid	57-74-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chlorine (-70 °C, liquid)	Liquid	7782-50-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chlorine (gaseous)	Vapor	7782-50-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chlorine sulfide (80%)	Liquid	10545-99-0	70	70				0.1			
Chlorine trifluoride	Vapor	7790-91-2	45	45	45	2	96	0.1			
Chloro 1,2-propanediol, 3-	Liquid	96-24-2		>480	>480	6	<0.0142	0.0142			
Chloro 1-methylbenzene, 2-	Liquid	95-49-8	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Chloro 2,3-epoxy propane, 1-	Liquid	106-89-8	>480	>480	>480	6	<0.014	0.014	<6.7	>480	6
Chloro acetic acid (80%)	Liquid	79-11-8		>480	>480	6	<0.01	0.01			
Chloro acetyl chloride	Liquid	79-04-9	160	160	170	4	23.2	0.1			
Chloro aniline, p-	Solid	106-47-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro aniline, p- (70 °C, molten)	Liquid	106-47-8	272	272*/323	355	5	9.4	0.001			
Chloro benzenamine, 4-	Solid	106-47-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro benzenamine, 4- (70 °C, molten)	Liquid	106-47-8	272	272*/323	355	5	9.4	0.001			
Chloro benzene	Liquid	108-90-7	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Chloro ethanol, 2-	Liquid	107-07-3	>480	>480	>480	6	<0.0082	0.0082	<3.9	>480	6
Chloro ethene	Vapor	75-01-4	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Chloro form	Liquid	67-66-3	>480	>480	>480	6	<0.0037	0.0037	<1.7	>480	6
Chloro methyl methyl ether	Liquid	107-30-2	305	>480	>480	6	0.03	0.001			
Chloro phenol, p- (sat in Methanol)	Liquid	106-48-9	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Chloro prene, 3-	Liquid	107-05-1	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Chloro toluene, alpha-	Liquid	100-44-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chloro toluene, o-	Liquid	95-49-8	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Chlorsulfonic acid	Liquid	7790-94-5	180	180			98.4	0.1			
Chromic acid (CrO3) (44.9%)	Liquid	1333-82-0	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Cresols, mixed isomers	Liquid	1319-77-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Cresylic acid	Liquid	1319-77-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Croton aldehyde	Liquid	123-73-9		>480	>480	6	<0.1	0.006			
Crude oil, California	Liquid	8002-05-9	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Cumene	Liquid	98-82-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Cyanide chloride (20% in Toluene)	Liquid	108-77-0	>480	>480	>480	6	<0.10	0.1	<48	>480	6
Cyanobenzene	Liquid	100-47-0	>480	>480	>480	6	<0.004	0.004	<1.9	>480	6
Cyanoethylene	Liquid	107-13-1	>480	>480	>480	6	<0.0003	0.0003			
Cyanomethane	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Cyanopropan-2-ol, 2-	Liquid	75-86-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6

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Cyclo hexane	Liquid	110-82-7		>480	>480	6	<0.0028	0.0028	<1.3	>480	6
Cyclo hexanone	Liquid	108-94-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diaminobiphenyl, 4,4'- (25% in Methanol)	Liquid	92-87-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diaminodiphenyl, p- (25% in Methanol)	Liquid	92-87-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diaminodiphenylmethane, 4,4'- (15% in Methyl Ethyl Ketone)	Liquid	101-77-9	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Diaminoethane, 1,2-	Liquid	107-15-3	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Diborane (10%)	Vapor	19287-45-7		>480	>480	6	<0.1	0.0045			
Dibromoethane, 1,2-	Liquid	106-93-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
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	251	>480	>480	6	<0.02	0.005	<0.9	>480	6
Dichlorethane, 1.2.-	Liquid	107-06-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Dichloro -4,4'-methylenedianiline, 2,2'- (sat in Methanol)	Liquid	101-14-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Dichloro -6-isopropyl-S-triazine, 2,4- (22% in Toluene)	Liquid	30894-74-7	>480	>480	>480	6	<0.10	0.1	<48	>480	6
Dichloro acetyl chloride	Liquid	79-36-7	100	100	110	3	20.5	0.01			
Dichloro aniline, 3,4-	Solid	95-76-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Dichloro aniline, 3,4- (70 ° C, molten)	Liquid	95-76-1	128*/216	216*/284			2.4	0.001			
Dichloro ethyl ether	Liquid	111-44-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Dichloro ethylene, 1,1-	Liquid	75-35-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Dichloro methane	Liquid	75-09-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dichloro propene, 2,3-	Liquid	78-88-6	>480	>480	>480	6	<0.0081	0.0081	<3.8	>480	6
Dichloro silane	Vapor	4109-96-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Dicyanobutane, 1,4-	Liquid	111-69-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Diesel fuel	Liquid	68334-30-5	>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 aniline, N,N-	Liquid	91-66-7	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Diethyl benzene (95%)	Liquid	25340-17-4	>480	>480	>480	6	<0.022	0.022	<10.6	>480	6
Diethyl ethanamine, N,N-	Liquid	121-44-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Diethyl ether	Liquid	60-29-7	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Diethyl hexyl phthalate	Liquid	117-81-7	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Diethylene imide oxide	Liquid	110-91-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Diethylene triamine	Liquid	111-40-0	>480	>480	>480	6	<0.0166	0.0166	<8	>480	6
Diiodo-1,1,2,2-tetrafluorobutane, 1,4-	Liquid	755-95-3		>480							
Dimethyl acetamide, N,N-	Liquid	127-19-5	>480	>480	>480	6	<0.006	0.006	<2.9	>480	6
Dimethyl aniline, N,N-	Liquid	121-69-7	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Dimethyl formamide, N,N-	Liquid	68-12-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Dimethyl hydrazine, N,N-	Liquid	57-14-7		>480[8]							
Dimethyl ketal	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Dimethyl ketone	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Dimethyl phenylamine, N, N-	Liquid	121-69-7	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

DUPONT™ TYCHEM® 10000 FR

TECHNICAL DATA SHEET

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Dimethyl sulfate	Liquid	77-78-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Dimethyl sulfoxide	Liquid	67-68-5	164*/372	>480	>480	6	0.003	0.001	<14.4	>480	6
Dinitro-o-cresol, 4,6- (sat in Methanol)	Liquid	534-52-1	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Dinitrocresol (sat in Methanol)	Liquid	534-52-1	>480	>480	>480	6	<0.013	0.013	<6.2	>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'-	Solid	101-68-8	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
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			
Disulphur dichloride	Liquid	10025-67-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Epichlorohydrin	Liquid	106-89-8	>480	>480	>480	6	<0.014	0.014	<6.7	>480	6
Epoxy ethane (0 °C, liquid)	Liquid	75-21-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Epoxy ethane (gaseous)	Vapor	75-21-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Epoxy propane, 1,2-	Liquid	75-56-9	>480	>480	>480	6	<0.0016	0.0016	<0.7	>480	6
Ethane 1,2-diol	Liquid	107-21-1		>480	>480	6	<0.1	0.014			
Ethane dioic acid (10.5%)	Liquid	144-62-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Ethane diol dipropanoate, 1,2-	Liquid	123-73-9		>480	>480	6	<0.1	0.006			
Ethane nitrile	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>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	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Ethanol amine	Liquid	141-43-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Ethanoyl chloride	Liquid	75-36-5		>480	>480	6	<0.0126	0.0126			
Ethoxy ethanol, 2-	Liquid	110-80-5	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Ethoxy ethylacetat	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethyl Cellosolve®	Liquid	110-80-5	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Ethyl acetate	Liquid	141-78-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethyl acrylate	Liquid	140-88-5	14	14			90.8	0.01			
Ethyl amine (15 °C, liquid)	Liquid	75-04-7	361	361	417	5	1.49	0.05			
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	<0.001	0.001	<0.48	>480	6
Ethyl glycol acetate	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>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	<0.05	0.05	<24	>480	6
Ethyl parathion	Liquid	56-38-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylene carboxylic acid	Liquid	79-10-7	270	270			1.577	0.01			
Ethylene chlorohydrin	Liquid	107-07-3	>480	>480	>480	6	<0.0082	0.0082	<3.9	>480	6
Ethylene diamine	Liquid	107-15-3	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Ethylene dibromide	Liquid	106-93-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Ethylene dichloride	Liquid	107-06-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylene glycol	Liquid	107-21-1		>480	>480	6	<0.1	0.014			
Ethylene glycol mono ethyl ether acetate	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monoethyl ether	Liquid	110-80-5	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

DUPONT™ TYCHEM® 10000 FR

TECHNICAL DATA SHEET

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Ethylene glycol monomethyl ether	Liquid	109-86-4	>480	>480	>480	6	<0.005	0.005	<4.8	>480	6
Ethylene glycol monomethyl ether acetate	Liquid	110-49-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylene imine	Liquid	151-56-4	59	59	>480	6	0.281	0.01			
Ethylene oxide (0 °C, liquid)	Liquid	75-21-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylene oxide (gaseous)	Vapor	75-21-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethylene tetrachloride	Liquid	127-18-4	>480	>480			0.05				
Ethylene trichloride	Liquid	79-01-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Fluorobenzene	Liquid	462-06-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Fluorosilicic acid (33-35%)	Liquid	16961-83-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Fluorosulfonic acid	Liquid	7789-21-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Formaldehyde (100 ppm)	Vapor	50-00-0	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Formalin (100 ppm)	Vapor	50-00-0	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Formalin (37% (10-15% Methanol))	Liquid	50-00-0	>480	>480	>480	6	<0.0048	0.0048	<2.3	>480	6
Formic acid (>95%)	Liquid	64-18-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Furaldehyde, 2-	Liquid	98-01-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Furfural	Liquid	98-01-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Gasoline, unleaded	Liquid	86290-81-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Glutaral (5%)	Liquid	111-30-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Glutaral (50%)	Liquid	111-30-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Glutaraldehyde (5%)	Liquid	111-30-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Glutaraldehyde (50%)	Liquid	111-30-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Glycol alcohol	Liquid	107-21-1		>480	>480	6	<0.1	0.014			
Glycol chlorohydrin	Liquid	107-07-3	>480	>480	>480	6	<0.0082	0.0082	<3.9	>480	6
Glycolic acid (sat)	Liquid	79-14-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Green Liquor (mix)	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hexachloro butadiene	Liquid	87-68-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hexachloro cyclohexane, 1,2,3,4,5,6- (sat in Acetone)	Liquid	58-89-9	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Hexafluoro ethane	Vapor	76-16-4		>480	>480	6	<0.1	0.0139			
Hexafluoro isobutylene	Vapor	382-10-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hexamethyl disilazane	Liquid	999-97-3		>480	>480	6	<0.1	0.014			
Hexamethyl disilazane, 1,1,1,3,3,3-	Liquid	999-97-3		>480	>480	6	<0.1	0.014			
Hexamethylene diamine (45 °C, molten)	Liquid	124-09-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hexamethylene diisocyanate	Liquid	822-06-0	>480	>480	>480	6	<0.0271	0.0271	<13	>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	<0.01	0.01	<4.8	>480	6
Hexone	Liquid	108-10-1	32*/120	>480	>480	6	<0.1	0.001			
Hydrazine	Liquid	302-01-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydrazine hydrate	Liquid	10217-52-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hydrazine hydrate (85%)	Liquid	10217-52-4	240*/360	440	>480	6	0.06	0.004			
Hydriodic acid (55-57%)	Liquid	10034-85-2	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hydrochloric acid (37%)	Liquid	7647-01-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Hydrofluoric acid (48-51%)	Liquid	7664-39-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Hydrofluoric acid (70%)	Liquid	7664-39-3	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

DUPONT™ TYCHEM® 10000 FR

TECHNICAL DATA SHEET

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Hydrogen bromide (gaseous)	Vapor	10035-10-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hydrogen chloride (gaseous)	Vapor	7647-01-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydrogen cyanide (21 °C, liquid)	Liquid	74-90-8	108	135	>480	6	0.53	0.0082			
Hydrogen cyanide (27 °C, gaseous)	Vapor	74-90-8	>480	>480	>480	6	<0.1	0.0217			
Hydrogen fluoride (20-27 °C, gaseous)	Vapor	7664-39-3	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydrogen peroxide (70%)	Liquid	7722-84-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hydrogen selenide	Vapor	7783-07-5		>480							
Hydrogen sulfide	Vapor	7783-06-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hydroxy 2-methylpropionitrile, 2-	Liquid	75-86-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hydroxy 2-nitrobenzene, 1- (70 °C, molten)	Liquid	88-75-5		208	>480	6	0.17	0.004			
Hydroxy acetic acid (sat)	Liquid	79-14-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hydroxy chlorobenzene (sat in Methanol)	Liquid	106-48-9	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Hydroxy isobutyronitrile	Liquid	75-86-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Iodomethane	Liquid	74-88-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Isobutyl methyl ketone	Liquid	108-10-1	32*/120	>480	>480	6	<0.1	0.001			
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	<0.01	0.01	<4.8	>480	6
Isopropyl benzene	Liquid	98-82-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Isopropylidenediphenol diglycidyl ether, 4,4'-	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
JP-4 Jet Fuel	Liquid	50815-00-4	>480	>480	>480	6	<0.0017	0.0017			
JP-8 Jet Fuel	Liquid	94114-58-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ketone propane	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Lewisite (L), MIL-STD-282 (10 g/m^2)	Liquid	541-25-3		>480[8]							
Lewisite (L), MIL-STD-282 (100 g/m^2)	Liquid	541-25-3		120[8]							
Limonene d-	Liquid	5989-27-5	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Lindane (sat in Acetone)	Liquid	58-89-9	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Low boiling point naphtha - unspecified	Liquid	8052-41-3	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Malathion	Liquid	121-75-5	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Mercapto acetic acid	Liquid	68-11-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Mercuric II chloride (sat)	Liquid	7487-94-7		>480[8]							
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	<0.01	0.01	<4.8	>480	6
Methanesulfonyl chloride	Liquid	124-63-0		>480	>480	6	<0.1	0.0006			
Methanethiol	Vapor	74-93-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Methanol	Liquid	67-56-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methomyl (29%)	Liquid	16752-77-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methoxy 2-methylpropane, 2-	Liquid	1634-04-4	>480	>480	>480	6	<0.007	0.007			
Methoxy chloromethane	Liquid	107-30-2	305	>480	>480	6	0.03	0.001			

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

DUPONT™ TYCHEM® 10000 FR

TECHNICAL DATA SHEET

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Methoxy ethanol, 2	Liquid	109-86-4	>480	>480	>480	6	<0.005	0.005	<4.8	>480	6
Methoxy ethylacetate, 2-	Liquid	110-49-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl 1,5-pentantedinitrile, 2- (87%)	Liquid	4553-62-2	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methyl 2-methyl-2-propenoate	Liquid	80-62-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
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	<0.001	0.001	<0.48	>480	6
Methyl acetyl	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Methyl acrolein	Liquid	123-73-9		>480	>480	6	<0.1	0.006			
Methyl acrylate	Liquid	96-33-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl amine (40%)	Liquid	74-89-5	72	261			3.9	0.017			
Methyl amine (50%)	Liquid	74-89-5	204	232							
Methyl amine (gaseous)	Vapor	74-89-5	105	105			40	0.1			
Methyl aniline, o-	Liquid	95-53-4	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Methyl benzol	Liquid	108-88-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl bromide	Vapor	74-83-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl chloride (gaseous)	Vapor	74-87-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl chloro formate	Liquid	79-22-1		>480	>480	6	<0.1	0.011			
Methyl chloroform	Liquid	71-55-6	>480	>480	>480	6	<0.004	0.004	<1.9	>480	6
Methyl cyanide	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl ethyl ketone	Liquid	78-93-3	>480	>480	>480	6	<0.0067	0.0067	<3.2	>480	6
Methyl ethyl ketoxime	Liquid	96-29-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methyl fluoride	Vapor	593-53-3		>480	>480	6	<0.1	0.0205			
Methyl formate	Liquid	107-31-3		>480	>480	6	<0.1	0.007			
Methyl hydrazine	Liquid	60-34-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl iodide	Liquid	74-88-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl isocyanate	Liquid	624-83-9	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Methyl ketone	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Methyl mercaptan	Vapor	74-93-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Methyl methacrylate	Liquid	80-62-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl pentan-2-one, 4-	Liquid	108-10-1	32*/120	>480	>480	6	<0.1	0.001			
Methyl phenols	Liquid	1319-77-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl propenoic acid, 2-	Liquid	79-41-4	>480	>480	>480	6	<0.01	0.01	<4.8	>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	<0.007	0.007			
Methyl trichloromethane	Liquid	71-55-6	>480	>480	>480	6	<0.004	0.004	<1.9	>480	6
Methyl trichlorosilane	Liquid	75-79-6	>480	>480	>480	6	<0.007	0.007	<3.4	>480	6
Methylene bis(2-Chloroaniline), 4,4- (sat in Methanol)	Liquid	101-14-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methylene chloride	Liquid	75-09-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methylene dianiline (15% in Methyl Ethyl Ketone)	Liquid	101-77-9	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methylene diphenyl diisocyanate, 4,4'-	Solid	101-68-8	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Methylene diphenyl diisocyanate, 4,4'- (50 °C, molten)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Mineral spirit	Liquid	64475-85-0	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Morpholine	Liquid	110-91-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Méthyl aziridine, 2- (90%)	Liquid	75-55-8	120	150	>480	6	0.34	0.01			
Naphthalene (25% in Diethylene glycol dimethylether)	Liquid	91-20-3	>480	>480	>480	6	<0.007	0.007	<3.4	>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	<0.1	0.1	<48	>480	6
Nitric acid (90%)	Liquid	7697-37-2		>480	>480	6	<0.1	0.033			
Nitric acid, red fuming (90%)	Liquid	52583-42-3		>480	>480	6	<0.1	0.033			
Nitro benzene	Liquid	98-95-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Nitro methane	Liquid	75-52-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Nitro phenol, o- (70 °C, molten)	Liquid	88-75-5		208	>480	6	0.17	0.004			
Nitro propane, 2-	Liquid	79-46-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Nitrogen tetroxide	Liquid	10544-72-6	60	>480	>480	6					
Nitrogen tetroxide (gaseous)	Vapor	10544-72-6	90	90			>1.1	0.003			
Nitrogen trifluoride	Vapor	7783-54-2		>480	>480	6	<0.014	0.014			
Nitrous oxide	Vapor	10024-97-2		>480	>480	6	<0.018	0.018			
Norflurane	Vapor	811-97-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Octane, n-	Liquid	111-65-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Oleum (40% free SO3)	Liquid	8014-95-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Oxalic acid (10.5%)	Liquid	144-62-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
PCB (50% in Trichlorbenzene)	Liquid	mix	>480	>480	>480	6	6	6			
Paraphenylene diisocyanate (PPDI) crude	Liquid	104-49-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Pentachlorophenol (sat in Methanol)	Liquid	87-86-5	>480	>480	>480	6	<0.013	0.013	<6.2	>480	6
Pentanedial, 1,5- (5%)	Liquid	111-30-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Pentanedial, 1,5- (50%)	Liquid	111-30-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Pentene nitrile, 3-	Liquid	4635-87-4	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Pentene nitrile, cis-2- (70%)	Liquid	25899-50-7	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Pentyl acetate	Liquid	628-63-7	>480	>480	>480	6	<0.003	0.003	<1.4	>480	6
Perchloric acid (70%)	Liquid	7601-90-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Perfluoro 2-propoxy propionyl fluoride	Liquid	2062-98-8	imm	>480	>480	6	<0.04	0.008	<19.2	>480	6
Perfluoroethane	Vapor	76-16-4		>480	>480	6	<0.1	0.0139			
Phenethylene	Liquid	100-42-5	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Phenol (45 °C, molten)	Liquid	108-95-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phenol (60 °C, molten)	Liquid	108-95-2	81	87	89	3	<24	0.01	352/132 min	120	3
Phenol (85% at 45 °C)	Liquid	108-95-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phenol (85%)	Liquid	108-95-2	>480	>480	>480	6	<0.06	0.006	<2.9	>480	6
Phenyl amine	Liquid	62-53-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Phenyl chloride	Liquid	108-90-7	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Phenyl cyanide	Liquid	100-47-0	>480	>480	>480	6	<0.004	0.004	<1.9	>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 mercaptan	Liquid	108-98-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

DUPONT™ TYCHEM® 10000 FR

TECHNICAL DATA SHEET

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Phenyl propane, 2-	Liquid	98-82-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phosgene	Vapor	75-44-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Phosphine	Vapor	7803-51-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phosphoric acid (85%)	Liquid	7664-38-2	>480	>480	>480	6	<0.18	0.18	<86.4	>480	6
Phosphorus oxychloride	Liquid	10025-87-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Phosphorus trichloride	Liquid	7719-12-2	>480	>480	>480	6	<0.1	0.1	<48	>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	<0.01	0.01	<4.8	>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[8]	>480	6	<0.49	0.49			
Potassium chromate (sat)	Liquid	7789-00-6	>480	>480[8]	>480	6	<0.51	0.51			
Potassium hydroxide (45%)	Liquid	1310-58-3		>480	>480	6	<0.1	0.008			
Prop-2-en-1-al	Liquid	107-02-8	>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	<0.005	0.005	<2.4	>480	6
Propane	Vapor	74-98-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Propen 1-ol, 2-	Liquid	107-18-6	>480	>480	>480	6	<0.1	0.1	<48	>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	270	270			1.577	0.01			
Propenenitrile, 2-	Liquid	107-13-1	>480	>480	>480	6	<0.0003	0.0003			
Propenoic acid butyl ester, 2-	Liquid	141-32-2		51	51	2	18.4	0.01			
Propenoic acid nitrile	Liquid	107-13-1	>480	>480	>480	6	<0.0003	0.0003			
Propylene aldehyde	Liquid	123-73-9		>480	>480	6	<0.1	0.006			
Propylene dichloride	Liquid	78-87-5	>480	>480	>480	6					
Propylene imine (90%)	Liquid	75-55-8	120	150	>480	6	0.34	0.01			
Propylene oxide, 1,2-	Liquid	75-56-9	>480	>480	>480	6	<0.0016	0.0016	<0.7	>480	6
Pyridine	Liquid	110-86-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Pyroacetic ether	Liquid	67-64-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Pyrrolidine	Liquid	123-75-1	407	413			9.2	0.012			
Sarin (GB), MIL-STD-282 (10 g/m^2)	Liquid	107-44-8		>480[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	<0.1	0.1	<48	>480	6
Sodium hydroxide (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Sodium hypochlorite (15%)	Liquid	7681-52-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Sodium metabisulphite (38%)	Liquid	7681-57-4		>480	>480	6	<0.052	0.052			
Sodium methylate (50% in Methanol)	Liquid	124-41-4	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Soman (GD), MIL-STD-282 (10 g/m^2)	Liquid	96-64-0		>480[8]							
Stoddard solvent	Liquid	8052-41-3	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Styrene	Liquid	100-42-5	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Sulfamic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Sulfamidic acid (15%)	Liquid	5329-14-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Sulfur Mustard (HD), MIL-STD-282 (10 g/m^2)	Liquid	505-60-2		>480[8]							
Sulfur Mustard (HD), MIL-STD-282 (100 g/m^2)	Liquid	505-60-2		>480[8]							
Sulfur dioxide	Vapor	7446-09-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Sulfur hexafluoride	Vapor	2551-62-4		>480	>480	6	<0.015	0.015			
Sulfur monochloride	Liquid	10025-67-9	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Sulfur trioxide	Liquid	7446-11-9	90	90	90	3	696	0.1			
Sulfuric acid (>95%)	Liquid	7664-93-9	>480	>480	>480	6	<0.005	0.05	<24	>480	6
Sulfuric acid dimethyl ester	Liquid	77-78-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Sulfuric acid fuming (40% free SO3)	Liquid	8014-95-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Sulfuryl chloride	Liquid	7791-25-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Sulphur dichloride (80%)	Liquid	10545-99-0	70	70				0.1			
Tabun (GA), MIL-STD-282 (10 g/m^2)	Liquid	77-81-6		>480[8]							
Tetrachloro ethane, 1,1,2,2,-	Liquid	79-34-5	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Tetrachloro ethylene, 1,1,2,2-	Liquid	127-18-4	>480	>480			0.05				
Tetrachloro methane	Liquid	56-23-5	>480	>480	>480	6	<0.015	0.015	<7.2	>480	6
Tetraethoxysilane	Liquid	78-10-4		>480	>480	6	<0.014	0.014			
Tetraethyl lead	Liquid	78-00-2	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Tetraethylene pentamine	Liquid	112-57-2	306*/421	>480	>480	6	<0.01	0.005	<4.8	>480	6
Tetrafluoroethane, 1,1,1,2-	Vapor	811-97-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Tetrafluoromethane	Vapor	75-73-0	>480	>480	>480	6	<0.0177	0.0177	<8.5	>480	6
Tetrahydrofuran	Liquid	109-99-9	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Tetramethyl tin (0.5% in Pentane)	Liquid	594-27-4		>480	>480	6	<0.006	0.006			
Thioglycolic acid	Liquid	68-11-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Thionyl chloride	Liquid	7719-09-7	<15*/35	35							
Titan(IV) chloride	Liquid	7550-45-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Titanium tetrachloride	Liquid	7550-45-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Toluene	Liquid	108-88-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Toluene diisocyanate, 1,3-	Liquid	26471-62-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Toluene diisocyanate, 2,4-	Liquid	584-84-9	>480	>480	>480	6	<0.0216	0.0216	<13.5	>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	<0.001	0.001	<0.48	>480	6
Trichloro 1,2,2-trifluoroethane, 1,1,2-	Liquid	76-13-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trichloro 1,3,5-triazine, 2,4,6- (20% in Toluene)	Liquid	108-77-0	>480	>480	>480	6	<0.10	0.1	<48	>480	6
Trichloro benzene, 1,2,4-	Liquid	120-82-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trichloro ethane, 1,1,1-	Liquid	71-55-6	>480	>480	>480	6	<0.004	0.004	<1.9	>480	6
Trichloro ethane, 1,1,2-	Liquid	79-00-5	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Trichloro ethanol, 2,2,2-	Liquid	115-20-8	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Trichloro ethylene	Liquid	79-01-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Trichloro methane	Liquid	67-66-3	>480	>480	>480	6	<0.0037	0.0037	<1.7	>480	6
Trichloro silane	Liquid	10025-78-2		>480	>480	6	<0.0218	0.0218			

DISTRIBUIDOR AUTORIZADO: TERRAN INDUSTRIAL SAC 20615723135

HAZARD / CHEMICAL NAME	PHYSICAL STATE	CAS	BT ACT	BT 0.1	BT 1.0	EN	SSPR	MDPR	CUM 480	TIME 150	ISO
Triethyl aluminum (93%)	Liquid	97-93-8		>480	>480	6	<0.1	0.0166			
Triethyl amine	Liquid	121-44-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Triethylentetramine (60%)	Liquid	112-24-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	Vapor	382-10-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trifluoro ethanol, 2,2,2-	Liquid	75-89-8	>480	>480	>480	6	<0.0013	0.0013	<0.6	>480	6
Trifluoro methane	Vapor	75-46-7		>480	>480	6	<0.0141	0.0141			
Trifluoro methansulfonic acid	Liquid	1493-13-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trimethyl aminomethane	Liquid	75-64-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Trimethyl phosphate	Liquid	512-56-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trimethyl phosphite	Liquid	121-45-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Tripropyl amine	Liquid	102-69-2	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Tungsten hexafluoride	Vapor	7783-82-6		>480	>480	6	<0.0259	0.0259			
VM & P Naphtha	Liquid	8030-30-6	>480	>480	>480	6	<0.0201	0.0201	<9.6	>480	6
VX Nerve Agent, MIL-STD-282 (10 g/m^2)	Liquid	50782-69-9		>480[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	<0.001	0.001	<0.48	>480	6
Vinyl carbinol	Liquid	107-18-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Vinyl chloride	Vapor	75-01-4	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Vinyl cyanide	Liquid	107-13-1	>480	>480	>480	6	<0.0003	0.0003			
Vinyl ethylene (gaseous)	Vapor	106-99-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Vinyl magnesium chloride (16.5% in Tetrahydrofuran)	Liquid	3536-96-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Vinylidene chloride	Liquid	75-35-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
White Liquor	Liquid	mix	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Xylene, mixed isomers	Liquid	1330-20-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
m-Cresol 55%, p-Cresol 30%, Phenol 15% (mix)	Liquid	mix	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
t-Sodium-amylate / t-amyl alcohol (mix)	Liquid	mix	120	120	240	5	4.9	0.01			

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

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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: 3/25/2022

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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