RC550T TN

DuPont™ Tychem® RESPONDER® CSM

DuPont™ Tychem® RESPONDER® CSM Encapsulated Level A Suit. Expanded Back, Front Entry. Standard Visor, 3 Layers: 40 mil PVC / 5 mil Teflon® / 20 mil PVC. Attached Butyl (mil. spec.) Gloves. Attached Socks with Outer Boot Flaps. Double Storm Flap with Hook & Loop Closure. Two Exhaust Valves. Double Taped Seams. Tan. Product Change Notice

Name	Description
Full Part Number	RC550TTNxx0001yy (xx=size;yy=option code)
Fabric/Materials	Tychem® RESPONDER® CSM
Design	Encap. Level A, Expanded Back, Front Entry
Seam	Double Taped
Color	Tan
Quantity/Box	1 per case
Sizes	XS, SM, MD, LG, XL, 2X, 3X, 4X, 5X, 6X
Option Codes	7W,7C,**,00

FEATURES & PRODUCT DETAILS

Tychem® RESPONDER® CSM combines multiple film barriers laminated to both sides of a high-strength polypropylene substrate for high level protection against toxic and corrosive chemicals. It is effective for handling chemical warfare agents as well as military site cleanup and HazMat first response. Tychem® RESPONDER® CSM fabric provides at least 30 minutes of protection against 320 chemical challenges. Each suit undergoes rigorous inspection and each Level A suit, pressure testing. Each fabric lot is tested using live toxic agents plus one garment for each test fabric production run is also tested for seam barrier with live toxic agents. Desert tan color for low visibility applications.

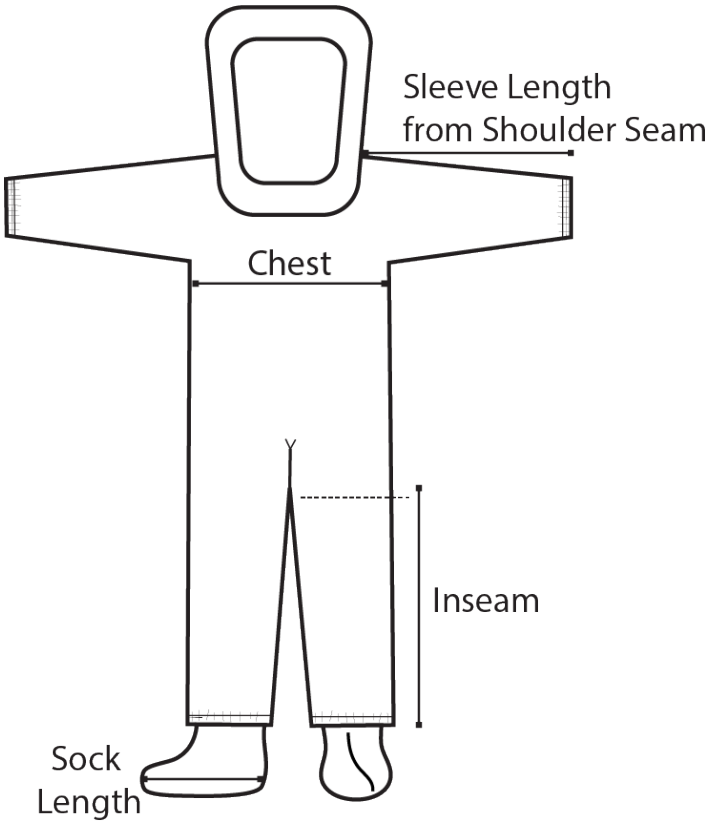
- Encapsulated Level A garment design is our highest level of protection from liquid splash and vapor/gas exposures for both the wearer and respiratory equipment
- Double taped seams provide strong chemical resistance against heavy liquid splashes. A sewn seam is covered, both inside and outside of garment with compatible chemical-resistant material by heat-sealing.
- Standard width, three layer (PVC 40 mil/Teflon® 5 mil/PVC 20 mil) faceshield
- Front entry design allows wearer to partially don garment (maintain standby position) without assistance
- Expanded back to accommodate self-contained air breathing apparatus (SCBA)
- Vapor tight zipper. Extra long to increase garment opening and aid donning and doffing
- Storm flap covers zipper which can be secured by the wearer with rugged hook and loop material to prevent intrusion at zipper
- Integrated socks composed of garment material
- Attached flaps are designed to cover boot tops to help reduce potential for liquid intrusion
- Two exhaust valves release higher pressure inside encapsulating garments while simultaneously helping to prevent inward leakage of external vapors or particles into the garment. One-way valves are positive pressure and open on demand. Valves include splash covers made of barrier material to help prevent liquid intrusion. Valves are located on left back of head and right lower back. (146)
- Each suit has a unique serial number and is fully tested at time of manufacture including positive air pressure integrity testing per ASTM F1052.
- Pass-thrus are optional and can be installed upon request when ordering. Some suits are available with optional pass-thrus to accommodate the following SCBA manufacturers: Scott, Interspiro, MSA, Draeger, Survivair®. Please call Customer Service 1-800-931-3456 for additional information. (3377)
- Made in the USA, North American Free Trade Agreement (NAFTA) compliant and Trade Agreement Act (TAA) compliant

AVAILABLE OPTIONS

Option Code	Description	Sizes	Part Number
00	Standard	XS,SM,MD,LG,XL,2X,3X,4X, 5X	
7C	(p/t) MSA Connector #491335 (right side)	SM,MD,LG,XL,2X,3X,4X,5X	
7S	(p/t) Scott® #803620-01 w/ Hansen fitting (right side)	MD,LG,XL,2X,3X,4X	
7W	(p/t) Interspiro with Hansen Fitting	XS,SM,MD,LG,XL,2X,3X,4X, 6X	RC550TTNxx00017W

SPECIFICATIONS

- The garment shall be constructed of DuPont™ Tychem® RESPONDER® CSM -- a proprietary fabric consisting of multi-layer barrier films laminated to both sides of a 2.8 oz/yd^2 polypropylene substrate.
- The garment shall be tan in color.
- The garment shall be an encapsulated Level A design.
- The garment shall have double taped seams.
- The tape used to cover the seams shall be a film composite with equal to or greater chemical resistance than the base fabric.
- The garment shall have a standard visor consisting of 3 layers - PVC 40 mil / Teflon® 5 mil / PVC 20 mil.
- The garment shall have a front, gas-tight zipper closure.
- The zipper shall be covered with a double storm flap with hook and loop closure.
- The garment shall have an expanded back.
- The garment shall have 2 exhaust valves.
- The garment shall have attached gloves.
- The gloves shall consist of a military specified Guardian™ IBA-35, 35 mil butyl glove.
- The garment shall have attached socks with outer boot flaps.
- The garment shall have soles made of garment material.



FINISHED DIMENSIONS

Size	Sleeve Length	Chest Width	Inseam	Fits Chest	Fits Height	Boot Length	Outer Glove Size
XS	20	32	29	50 3/4-54 1 /4	5'0" - 5'6"	13 1/2	11
SM	24	32	31	50 3/4-54 1 /4	5'0" - 5'7"	13 1/2	11
MD	24	32	31	50 3/4-54 1 /4	5'3" - 5'7"	13 1/2	11
LG	25 1/2	33	32	52 3/4-56 1 /4	5'5" - 5'9"	13 1/2	11
XL	25 1/2	33	32	52 3/4-56 1 /4	5'8" - 6'2"	13 1/2	11
2X	27	34 1/2	34 1/2	55 3/4-59 1 /4	6'0" - 6'4"	14	11
3X	27	34 1/2	34 1/2	55 3/4-59 1 /4	6'2" - 6'4"	14	11
4X	28 1/2	36	36 1/2	58 3/4-62 1 /4	6'4" - 6'7"	14	11
5X	28 1/2	36	36 1/2	58 3/4-62 1 /4	6'7" - 6'10"	14	11
6X	31	36	37 1/2	58 3/4-62 1 /4	6'9" - 7'1"	14	11

ADDITIONAL EQUIPMENT NEEDED

- Please read, understand and follow the Tychem® User Manual.
- Suffocation hazard exists. An appropriate open-circuit self-contained breathing apparatus (SCBA) or air-line supplied respirator must be worn with all encapsulating garments.
- Wear other appropriate PPE such as, but not limited to, respiratory, eye, head, hand, and foot protection based on the hazard assessment.
- Wear separate appropriate outer footwear over the garment sock. This garment has attached socks made of garment material. These socks are not suitable to used as outer footwear. They do not have adequate durability or slip resistance to be worn as the outer foot covering. (15)

Physical Properties

Data relating to mechanical performance of the fabrics used in DuPont chemical protective clothing, listed for the selected garment according to the test methods and relevant European standard, if applicable. Such properties, including abrasion and flex-cracking resistance, tensile strength and puncture resistance can help in the assessment of protective performance.

Property	Test Method	Typical Result
Thickness	ASTM D1777	25 mils
Basis Weight	ASTM D3776	11.5 oz/yd^2
Burst Strength - Ball	ASTM D3787	155 lb_f
Tear Resistance - Trap Tear (MD)	ASTM D5733	60 lb_f
Tear Resistance - Trap Tear (CD)	ASTM D5733	45 lb_f
Breaking Strength - Grab (MD).	ASTM D5034	122 lb_f
Breaking Strength - Grab (CD)	ASTM D5034	150 lb_f
Wearing Apparel Flammability	16 CFR 1610	Class 1

CHEMICAL RESISTANCE

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
2-(2-Ethoxyethoxy) ethanol	111-90-0	Liquid	>480
Acetaldehyde	75-07-0	Liquid	>480
Acetic acid (>95%)	64-19-7	Liquid	>480
Acetic acid 2 ethoxy ethyl ester	111-15-9	Liquid	>480
Acetic acid 2 methoxy ethyl ester	110-49-6	Liquid	>480
Acetic acid ethenyl ester	108-05-4	Liquid	>480
Acetic acid ethyl ester	141-78-6	Liquid	>480
Acetic acid pentyl ester	628-63-7	Liquid	>480
Acetic anhydride	108-24-7	Liquid	>480
Acetic chloride	75-36-5	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	>480
Acroleic acid	79-10-7	Liquid	>480
Acrolein	107-02-8	Liquid	>480
Acrylamide (50%)	79-06-1	Liquid	>480
Acrylic acid	79-10-7	Liquid	>480
Acrylic acid ethyl ester	140-88-5	Liquid	14
Acrylic acid n-butyl ester	141-32-2	Liquid	51
Acrylicamide (50%)	79-06-1	Liquid	>480
Acrylonitrile	107-13-1	Liquid	>480
Adipic acid dinitrile	111-69-3	Liquid	>480
Adipic acid nitrile	111-69-3	Liquid	>480
Adiponitrile	111-69-3	Liquid	>480
Allyl alcohol	107-18-6	Liquid	>480
Allyl chloride	107-05-1	Liquid	>480
Amido sulfonic acid (15%)	5329-14-6	Liquid	>480
Amino 2-methylpropane, 2-	75-64-9	Liquid	>480
Amino 3,4-dichlorobenzene, 1-	95-76-1	Solid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Amino 3,4-dichlorobenzene, 1- (70 °C, molten)	95-76-1	Liquid	216*/284
Amino benzene	62-53-3	Liquid	>480
Amino diphenyl, 4- (1 mg/ml in Methanol)	92-67-1	Liquid	>480
Amino ethanol, 2-	141-43-5	Liquid	>480
Amino ethylethanolamine	111-41-1	Liquid	>480
Amino ethylethanolamine (60%)	111-41-1	Liquid	>480
Amino ethylpiperazine	140-31-8	Liquid	>480
Amino propane, 2-	75-31-0	Liquid	>480
Amino pyridine, 2- (sat)	504-29-0	Liquid	>480
Ammonia (gaseous)	7664-41-7	Vapor	105*/133
Ammonium fluoride (40%)	12125-01-8	Liquid	>480
Ammonium hydroxide (2-3% in Householdcleaner)	1336-21-6	Liquid	>480
Ammonium hydroxide (28% - 30%)	1336-21-6	Liquid	160
Amyl acetate, n-	628-63-7	Liquid	>480
Amyl ester acetic acid	628-63-7	Liquid	>480
Aniline	62-53-3	Liquid	>480
Antimony pentachloride	7647-18-9	Liquid	>480
Arsine	7784-42-1	Vapor	>480
Aziridine	151-56-4	Liquid	59
Azolidine	123-75-1	Liquid	413
Benzenamine	62-53-3	Liquid	>480
Benzene	71-43-2	Liquid	>480
Benzene carbonyl chloride	98-88-4	Liquid	>480
Benzene sulfone chloride	98-09-9	Liquid	>480
Benzene sulfonyl chloride	98-09-9	Liquid	>480
Benzene thiol	108-98-5	Liquid	>480
Benzidine (25% in Methanol)	92-87-5	Liquid	>480
Benzo nitrile	100-47-0	Liquid	>480
Benzoyl chloride	98-88-4	Liquid	>480
Benzyl alcohol	100-51-6	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Benzyl chloride	100-44-7	Liquid	>480
Biphenyl 4,4'-diamine, 1,1'- (25% in Methanol)	92-87-5	Liquid	>480
Bis (4-(2,3-epoxypropoxy)phenyl)propane	1675-54-3	Liquid	>480
Bis phenol A diglycidyl ether	1675-54-3	Liquid	>480
Black Liquor (mix)	mix	Liquid	>480
Boron trichloride	10294-34-5	Vapor	>480
Boron trifluoride	7637-07-2	Vapor	>480
Bromine	7726-95-6	Liquid	imm
Bromo 4-fluorobenzene, 1-	460-00-4	Liquid	>480
Bromo fluorobenzene, 4-	460-00-4	Liquid	>480
Bromo methane	74-83-9	Vapor	>480
Butadiene, 1,3- (gaseous)	106-99-0	Vapor	>480
Butanal, n-	123-72-8	Liquid	>480
Butanol, 1-	71-36-3	Liquid	>480
Butanol, n-	71-36-3	Liquid	>480
Butanone	78-93-3	Liquid	>480
Butanone oxime, 2-	96-29-7	Liquid	>480
Butenal, 2-	123-73-9	Liquid	>480
Butoxy ethanol, 2-	111-76-2	Liquid	>480
Butyl acetate, n-	123-86-4	Liquid	>480
Butyl acrylate, n-	141-32-2	Liquid	51
Butyl alcohol, n-	71-36-3	Liquid	>480
Butyl amine	109-73-9	Liquid	>480
Butyl amine, tert-	75-64-9	Liquid	>480
Butyl ether, n-	142-96-1	Liquid	>480
Butyraldehyde, n-	123-72-8	Liquid	>480
Carbon disulfide	75-15-0	Liquid	>480
Carbon monoxide	630-08-0	Vapor	330
Carbon tetrachloride	56-23-5	Liquid	>480
Carbon tetrafluoride	75-73-0	Vapor	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Caustic ammonia (2-3% in Householdcleaner)	1336-21-6	Liquid	>480
Caustic ammonia (28% - 30%)	1336-21-6	Liquid	160
Caustic soda (50%)	1310-73-2	Liquid	>480
Cellosolve acetate	110-80-5	Liquid	>480
Chemidize 727 ND (mix)	mix	Liquid	>480
Chlor allylene	107-05-1	Liquid	>480
Chlordane (60-75%)	57-74-9	Liquid	>480
Chlorine (-70 °C, liquid)	7782-50-5	Liquid	441
Chlorine (gaseous)	7782-50-5	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
Chloro 1-methylbenzene, 2-	95-49-8	Liquid	>480
Chloro 2,3-epoxy propane, 1-	106-89-8	Liquid	>480
Chloro acetic acid (80%)	79-11-8	Liquid	>480
Chloro acetone (95%)	78-95-5	Liquid	>480[8]
Chloro acetyl chloride	79-04-9	Liquid	160
Chloro acrylonitrile, 2-	920-37-6	Liquid	>480
Chloro aniline, p-	106-47-8	Solid	>480
Chloro aniline, p- (70 °C, molten)	106-47-8	Liquid	272*/323
Chloro benzenamine, 4-	106-47-8	Solid	>480
Chloro benzenamine, 4- (70 °C, molten)	106-47-8	Liquid	272*/323
Chloro benzene	108-90-7	Liquid	>480
Chloro ethanol, 2-	107-07-3	Liquid	>480
Chloro ethene	75-01-4	Vapor	>480
Chloro form	67-66-3	Liquid	>480
Chloro methyl methyl ether	107-30-2	Liquid	>480
Chloro phenol, p- (sat in Methanol)	106-48-9	Liquid	>480
Chloro prene, 3-	107-05-1	Liquid	>480
Chloro propan-2-one, 1- (95%)	78-95-5	Liquid	>480[8]

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Chloro toluene, alpha-	100-44-7	Liquid	>480
Chloro toluene, o-	95-49-8	Liquid	>480
Chlorsulfonic acid	7790-94-5	Liquid	>480
Chromic acid (CrO3) (44.9%)	1333-82-0	Liquid	>480
Cresol o-	95-48-7	Liquid	>480
Cresols, mixed isomers	1319-77-3	Liquid	>480
Cresylic acid	1319-77-3	Liquid	>480
Croton aldehyde	123-73-9	Liquid	>480
Crude oil, California	8002-05-9	Liquid	>480
Cumene	98-82-8	Liquid	>480
Cyanide chloride (20% in Toluene)	108-77-0	Liquid	>480
Cyanobenzene	100-47-0	Liquid	>480
Cyanoethylene	107-13-1	Liquid	>480
Cyanomethane	75-05-8	Liquid	>480
Cyanopropan-2-ol, 2-	75-86-5	Liquid	>480
Cyclo hexane	110-82-7	Liquid	>480
Cyclo hexanone	108-94-1	Liquid	>480
Cyclo hexyl isocanyte	3173-53-3	Liquid	36*/54
Diaminobiphenyl, 4,4'- (25% in Methanol)	92-87-5	Liquid	>480
Diaminodiphenyl, p- (25% in Methanol)	92-87-5	Liquid	>480
Diaminodiphenylmethane, 4,4'- (15% in Methyl Ethyl Ketone)	101-77-9	Liquid	>480
Diaminoethane, 1,2-	107-15-3	Liquid	>480
Diborane (10%)	19287-45-7	Vapor	>480
Dibromoethane, 1,2-	106-93-4	Liquid	>480
Dichlorbenzen, 1,2-	95-50-1	Liquid	>480
Dichlorbenzen, 1,3-	541-73-1	Liquid	>480
Dichlorbenzen, 1,4- (50% in Ethanol)	106-46-7	Liquid	>480
Dichlorethane, 1.2.-	107-06-2	Liquid	>480
Dichloro -4,4'-methylenedianiline, 2,2'- (sat in Methanol)	101-14-4	Liquid	>480
Dichloro -6-isopropyl-S-triazine, 2,4- (22% in Toluene)	30894-74-7	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Dichloro acetyl chloride	79-36-7	Liquid	100
Dichloro aniline, 3,4-	95-76-1	Solid	>480
Dichloro aniline, 3,4- (70 °C, molten)	95-76-1	Liquid	216*/284
Dichloro ethyl ether	111-44-4	Liquid	>480
Dichloro ethylene, 1,1-	75-35-4	Liquid	>480
Dichloro methane	75-09-2	Liquid	>480
Dichloro propene, 1,3- (95%)	542-75-6	Liquid	>480
Dichloro propene, 2,3-	78-88-6	Liquid	>480
Dichloro silane	4109-96-0	Vapor	>480
Dicyanobutane, 1,4-	111-69-3	Liquid	>480
Diesel fuel	68334-30-5	Liquid	>480
Diethanolamine	111-42-2	Liquid	>480
Diethyl amine	109-89-7	Liquid	>480
Diethyl aniline crude	91-66-7	Liquid	>480
Diethyl benzene (95%)	25340-17-4	Liquid	>480
Diethyl ethanamine, N,N-	121-44-8	Liquid	>480
Diethyl ether	60-29-7	Liquid	>480
Diethyl hexyl phthalate	117-81-7	Liquid	>480
Diethyl m-toluidine, N,N-	91-67-8	Liquid	>480
Diethylene imide oxide	110-91-8	Liquid	>480
Diethylene triamine	111-40-0	Liquid	>480
Diiodo-1,1,2,2-tetrafluorobutane, 1,4-	755-95-3	Liquid	>480
Dimethyl acetamide, N,N-	127-19-5	Liquid	>480
Dimethyl aniline, N,N-	121-69-7	Liquid	>480
Dimethyl dichlorosilane	75-78-5	Liquid	46
Dimethyl formamide, N,N-	68-12-2	Liquid	>480
Dimethyl hydrazine, N,N-	57-14-7	Liquid	>480[8]
Dimethyl ketal	67-64-1	Liquid	>480
Dimethyl ketone	67-64-1	Liquid	>480
Dimethyl maleate	624-48-6	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Dimethyl phenylamine, N,N-	121-69-7	Liquid	>480
Dimethyl sulfate	77-78-1	Liquid	>480
Dimethyl sulfoxide	67-68-5	Liquid	>480
Dinitro-o-cresol, 4,6- (sat in Methanol)	534-52-1	Liquid	>480
Dinitrocresol (sat in Methanol)	534-52-1	Liquid	>480
Dioxane, 1,4-	123-91-1	Liquid	>480
Diphenyl methane diisocyanate, 4,4'-	101-68-8	Solid	>480
Diphenyl methane diisocyanate, 4,4'- (50 °C, molten)	101-68-8	Liquid	>480
Disodium sulfide (60% (slurry))	1313-82-2	Liquid	>480
Disulphur dichloride	10025-67-9	Liquid	>480
Epichlorohydrin	106-89-8	Liquid	>480
Epoxy ethane (0 °C, liquid)	75-21-8	Liquid	>480
Epoxy ethane (gaseous)	75-21-8	Vapor	>480
Epoxy propane, 1,2-	75-56-9	Liquid	>480
Ethane 1,2-diol	107-21-1	Liquid	>480
Ethane dioic acid (10.5%)	144-62-7	Liquid	>480
Ethane diol dipropanoate, 1,2-	123-73-9	Liquid	>480
Ethane nitrile	75-05-8	Liquid	>480
Ethane thiol	75-08-1	Liquid	>480
Ethane trichloride	79-00-5	Liquid	>480
Ethanol	64-17-5	Liquid	>480
Ethanol amine	141-43-5	Liquid	>480
Ethanoyl chloride	75-36-5	Liquid	>480
Ethoxy ethanol, 2-	110-80-5	Liquid	>480
Ethoxy ethylacetat	111-15-9	Liquid	>480
Ethyl Cellosolve®	110-80-5	Liquid	>480
Ethyl acetate	141-78-6	Liquid	>480
Ethyl acrylate	140-88-5	Liquid	14
Ethyl alcohol	64-17-5	Liquid	>480
Ethyl amine (15 °C, liquid)	75-04-7	Liquid	361

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Ethyl benzene	100-41-4	Liquid	>480
Ethyl ethanamine, N-	109-89-7	Liquid	>480
Ethyl ether	60-29-7	Liquid	>480
Ethyl glycol acetate	111-15-9	Liquid	>480
Ethyl mercaptan	75-08-1	Liquid	>480
Ethyl nitrile	75-05-8	Liquid	>480
Ethyl parathion	56-38-2	Liquid	>480
Ethylene carboxylic acid	79-10-7	Liquid	>480
Ethylene chlorohydrin	107-07-3	Liquid	>480
Ethylene diamine	107-15-3	Liquid	>480
Ethylene dibromide	106-93-4	Liquid	>480
Ethylene dichloride	107-06-2	Liquid	>480
Ethylene glycol	107-21-1	Liquid	>480
Ethylene glycol mono ethyl ether acetate	111-15-9	Liquid	>480
Ethylene glycol monobutyl ether	111-76-2	Liquid	>480
Ethylene glycol monoethyl ether	110-80-5	Liquid	>480
Ethylene glycol monomethyl ether	109-86-4	Liquid	>480
Ethylene glycol monomethyl ether acetate	110-49-6	Liquid	>480
Ethylene imine	151-56-4	Liquid	59
Ethylene oxide (0 °C, liquid)	75-21-8	Liquid	>480
Ethylene oxide (gaseous)	75-21-8	Vapor	>480
Ethylene tetrachloride	127-18-4	Liquid	>480
Ethylene trichloride	79-01-6	Liquid	>480
Ferric (II) chloride (sat)	7758-94-3	Liquid	>480
Ferric (III) chloride (50%)	7705-08-0	Liquid	>480
Fluorobenzene	462-06-6	Liquid	>480
Fluoroboric acid (48-50%)	16872-11-0	Liquid	>480
Fluorosilicic acid (33-35%)	16961-83-4	Liquid	>480
Fluorosulfonic acid	7789-21-1	Liquid	>480
Formaldehyde (100 ppm)	50-00-0	Vapor	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Formalin (100 ppm)	50-00-0	Vapor	>480
Formalin (37% (10-15% Methanol))	50-00-0	Liquid	>480
Formic acid (>95%)	64-18-6	Liquid	>480
Fuel-oil no 2	68476-30-2	Liquid	>480
Furaldehyde, 2-	98-01-1	Liquid	>480
Furfural	98-01-1	Liquid	>480
Gasoline, unleaded	86290-81-5	Liquid	>480
Gasoline, unleaded E10 (87 Octane)	308066-70-8	Liquid	imm
Glutaral (5%)	111-30-8	Liquid	>480
Glutaral (50%)	111-30-8	Liquid	>480
Glutaraldehyde (5%)	111-30-8	Liquid	>480
Glutaraldehyde (50%)	111-30-8	Liquid	>480
Glycol alcohol	107-21-1	Liquid	>480
Glycol chlorohydrin	107-07-3	Liquid	>480
Glycolic acid (sat)	79-14-1	Liquid	>480
Green Liquor (mix)	mix	Liquid	>480
Hexachloro butadiene	87-68-3	Liquid	>480
Hexachloro cyclohexane, 1,2,3,4,5,6- (sat in Acetone)	58-89-9	Liquid	>480
Hexafluoro ethane	76-16-4	Vapor	>480
Hexafluoro isobutylene	382-10-5	Vapor	>480
Hexamethyl disilazane	999-97-3	Liquid	>480
Hexamethyl disilazane, 1,1,1,3,3,3-	999-97-3	Liquid	>480
Hexamethylene diamine (45 °C, molten)	124-09-4	Liquid	>480
Hexamethylene diamine (50 °C, molten)	124-09-4	Liquid	80
Hexamethylene diisocyanate	822-06-0	Liquid	>480
Hexane, n-	110-54-3	Liquid	>480
Hexanone	108-94-1	Liquid	>480
Hexone	108-10-1	Liquid	>480
Hydrazine	302-01-2	Liquid	>480
Hydrazine hydrate (85%)	10217-52-4	Liquid	440

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Hydriodic acid (47%)	10034-85-2	Liquid	>480
Hydriodic acid (55-57%)	10034-85-2	Liquid	>480
Hydrochloric acid (37%)	7647-01-0	Liquid	>480
Hydrofluoric acid (48-51%)	7664-39-3	Liquid	>480
Hydrofluoric acid (70%)	7664-39-3	Liquid	>480
Hydrogen bromide (gaseous)	10035-10-6	Vapor	>480
Hydrogen chloride (gaseous)	7647-01-0	Vapor	>480
Hydrogen cyanide (21 °C, liquid)	74-90-8	Liquid	135
Hydrogen cyanide (27 °C, gaseous)	74-90-8	Vapor	>480
Hydrogen fluoride (20-27 °C, gaseous)	7664-39-3	Vapor	130
Hydrogen peroxide (30%)	7722-84-1	Liquid	>480
Hydrogen peroxide (70%)	7722-84-1	Liquid	>480
Hydrogen selenide	7783-07-5	Vapor	>480
Hydrogen sulfide	7783-06-4	Vapor	>480
Hydroxy 2-methylpropionitrile, 2-	75-86-5	Liquid	>480
Hydroxy 2-nitrobenzene, 1- (70 °C, molten)	88-75-5	Liquid	208
Hydroxy acetic acid (sat)	79-14-1	Liquid	>480
Hydroxy chlorobenzene (sat in Methanol)	106-48-9	Liquid	>480
Hydroxy isobutyronitrile	75-86-5	Liquid	>480
Hydroxy propene	107-18-6	Liquid	>480
Hydroxy toluene	100-51-6	Liquid	>480
Hydroxy toluene, o-	95-48-7	Liquid	>480
Iodomethane	74-88-4	Liquid	>480
Isoamyl alcohol	123-51-3	Liquid	>480
Isobutyl methyl ketone	108-10-1	Liquid	>480
Isopropanol	67-63-0	Liquid	>480
Isopropyl alcohol	67-63-0	Liquid	>480
Isopropyl amine	75-31-0	Liquid	>480
Isopropyl benzene	98-82-8	Liquid	>480
Isopropylidenediphenol diglycidyl ether, 4,4'-	1675-54-3	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
JP-4 Jet Fuel	50815-00-4	Liquid	>480
JP-8 Jet Fuel	94114-58-6	Liquid	>480
Ketone propane	67-64-1	Liquid	>480
Lewisite (L), MIL-STD-282 (10 g/m^2)	541-25-3	Liquid	>480[8]
Lewisite (L), MIL-STD-282 (100 g/m^2)	541-25-3	Liquid	120[8]
Limonene d-	5989-27-5	Liquid	>480
Lindane (sat in Acetone)	58-89-9	Liquid	>480
Low boiling point naphtha - unspecified	8052-41-3	Liquid	>480
Malathion	121-75-5	Liquid	>480
Mercapto acetic acid	68-11-1	Liquid	>480
Mercuric II chloride (sat)	7487-94-7	Liquid	>480[8]
Mercury	7439-97-6	Liquid	>480
Methacrylic acid	79-41-4	Liquid	>480
Methanesulfonyl chloride	124-63-0	Liquid	>480
Methanesulphonic acid (70%)	75-75-2	Liquid	>480
Methanethiol	74-93-1	Vapor	>480
Methanol	67-56-1	Liquid	>480
Methomyl (29%)	16752-77-5	Liquid	>480
Methoxy 2-methylpropane, 2-	1634-04-4	Liquid	>480
Methoxy chloromethane	107-30-2	Liquid	>480
Methoxy ethanol, 2	109-86-4	Liquid	>480
Methoxy ethylacetate, 2-	110-49-6	Liquid	>480
Methyl 1,5-pentantedinitrile, 2- (87%)	4553-62-2	Liquid	>480
Methyl 2-methyl-2-propenoate	80-62-6	Liquid	>480
Methyl 2-pyrrolidon, N-	872-50-4	Liquid	>480
Methyl 4-isopropenyl-1-cyclohexene, 1-	5989-27-5	Liquid	>480
Methyl acetyl	67-64-1	Liquid	>480
Methyl acrolein	123-73-9	Liquid	>480
Methyl acrylate	96-33-3	Liquid	>480
Methyl amine (40%)	74-89-5	Liquid	261

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Methyl amine (50%)	74-89-5	Liquid	232
Methyl amine (gaseous)	74-89-5	Vapor	105
Methyl aniline, o-	95-53-4	Liquid	>480
Methyl benzol	108-88-3	Liquid	>480
Methyl bromide	74-83-9	Vapor	>480
Methyl butan-1-ol, 3-	123-51-3	Liquid	>480
Methyl chloride (gaseous)	74-87-3	Vapor	>480
Methyl chloro formate	79-22-1	Liquid	>480
Methyl chloroform	71-55-6	Liquid	>480
Methyl cyanide	75-05-8	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 isocyanate	624-83-9	Liquid	>480
Methyl ketone	67-64-1	Liquid	>480
Methyl mercaptan	74-93-1	Vapor	>480
Methyl methacrylate	80-62-6	Liquid	>480
Methyl pentan-2-one, 4-	108-10-1	Liquid	>480
Methyl phenols	1319-77-3	Liquid	>480
Methyl propenoic acid, 2-	79-41-4	Liquid	>480
Methyl pyridine, 2-	109-06-8	Liquid	>480
Methyl pyridine, 3-	108-99-6	Liquid	>480
Methyl salicylate	119-36-8	Liquid	>480
Methyl tert-butyl ether	1634-04-4	Liquid	>480
Methyl trichloromethane	71-55-6	Liquid	>480
Methyl trichlorosilane	75-79-6	Liquid	>480
Methylene bis(2-Chloroaniline), 4,4- (sat in Methanol)	101-14-4	Liquid	>480
Methylene chloride	75-09-2	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Methylene dianiline (15% in Methyl Ethyl Ketone)	101-77-9	Liquid	>480
Methylene diphenyl diisocyanate, 4,4'-	101-68-8	Solid	>480
Methylene diphenyl diisocyanate, 4,4'- (50 °C, molten)	101-68-8	Liquid	>480
Mineral oil	8012-95-1	Liquid	>480
Mineral spirit	64475-85-0	Liquid	>480
Morpholine	110-91-8	Liquid	>480
Naphthalene (25% in Diethylene glycol dimethylether)	91-20-3	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 (90%)	52583-42-3	Liquid	>480
Nitro benzene	98-95-3	Liquid	>480
Nitro methane	75-52-5	Liquid	>480
Nitro phenol, o- (70 °C, molten)	88-75-5	Liquid	208
Nitro propane, 2-	79-46-9	Liquid	>480
Nitro toluene, 2-	88-72-2	Liquid	95
Nitrogen tetroxide	10544-72-6	Liquid	>480
Nitrogen tetroxide (gaseous)	10544-72-6	Vapor	90
Nitrogen trifluoride	7783-54-2	Vapor	>480
Nitrous oxide	10024-97-2	Vapor	>480
Norflurane	811-97-2	Vapor	>480
Octane, n-	111-65-9	Liquid	>480
Oleum (20% free SO3)	8014-95-7	Liquid	>480
Oleum (30% free SO3)	8014-95-7	Liquid	>480
Oleum (40% free SO3)	8014-95-7	Liquid	>480
Oxalic acid (10.5%)	144-62-7	Liquid	>480
PCB (50% in Trichlorbenzene)	mix	Liquid	>480
PCB 1254 (50% in Mineral Oil)	11097-69-1	Liquid	>480
Paraphenylene diisocyanate (PPDI) crude	104-49-4	Liquid	>480
Pentachloroantimony	7647-18-9	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Pentachlorophenol (sat in Methanol)	87-86-5	Liquid	>480
Pentanedial, 1,5- (5%)	111-30-8	Liquid	>480
Pentanedial, 1,5- (50%)	111-30-8	Liquid	>480
Pentene nitrile, 2-	13284-42-9	Liquid	>480
Pentene nitrile, 3-	4635-87-4	Liquid	>480
Pentene nitrile, cis-2- (70%)	25899-50-7	Liquid	>480
Pentyl acetate	628-63-7	Liquid	>480
Perchloric acid (70%)	7601-90-3	Liquid	>480
Perfluoro 2-propoxy propionyl fluoride	2062-98-8	Liquid	>480
Perfluoroethane	76-16-4	Vapor	>480
Phenethylene	100-42-5	Liquid	>480
Phenol (45 °C, molten)	108-95-2	Liquid	101
Phenol (60 °C, molten)	108-95-2	Liquid	121
Phenol (85% at 45 °C)	108-95-2	Liquid	149
Phenol (85%)	108-95-2	Liquid	>480
Phenyl amine	62-53-3	Liquid	>480
Phenyl chloride	108-90-7	Liquid	>480
Phenyl cyanide	100-47-0	Liquid	>480
Phenyl ethane	100-41-4	Liquid	>480
Phenyl ethanol, 1-	98-85-1	Liquid	>480
Phenyl glycidyl ether	122-60-1	Liquid	>480
Phenyl mercaptan	108-98-5	Liquid	>480
Phenyl propane, 2-	98-82-8	Liquid	>480
Phenyl trichlorosilane	98-13-5	Liquid	>480
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	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Picoline, 3-	108-99-6	Liquid	>480
Pimelic ketone	108-94-1	Liquid	>480
Polymethylene polyphenyle isocyanate (p-MDI)	9016-87-9	Liquid	>480
Potassium acetate (sat)	127-08-2	Liquid	>480[8]
Potassium chromate (sat)	7789-00-6	Liquid	>480[8]
Potassium hydroxide (45%)	1310-58-3	Liquid	>480
Prop-2-en-1-al	107-02-8	Liquid	>480
Propan -2-ol	67-63-0	Liquid	>480
Propan -2-one	67-64-1	Liquid	>480
Propane	74-98-6	Vapor	nm
Propen 1-ol, 2-	107-18-6	Liquid	>480
Propenamide (50%)	79-06-1	Liquid	>480
Propene acid	79-10-7	Liquid	>480
Propenenitrile, 2-	107-13-1	Liquid	>480
Propenoic acid butyl ester, 2-	141-32-2	Liquid	51
Propenoic acid nitrile	107-13-1	Liquid	>480
Propyl bromide, n-	106-94-5	Liquid	12
Propylene aldehyde	123-73-9	Liquid	>480
Propylene dichloride	78-87-5	Liquid	>480
Propylene imine (90%)	75-55-8	Liquid	150
Propylene oxide, 1,2-	75-56-9	Liquid	>480
Pyridine	110-86-1	Liquid	>480
Pyroacetic ether	67-64-1	Liquid	>480
Pyrrolidine	123-75-1	Liquid	413
Sarin (GB), MIL-STD-282 (10 g/m^2)	107-44-8	Liquid	>480[8]
Sarin (GB), MIL-STD-282 (100 g/m^2)	107-44-8	Liquid	>480[8]
Silane	7803-62-5	Vapor	>480
Silicon tetrachloride	10026-04-7	Liquid	>480
Sodium cyanide (sat)	143-33-9	Liquid	>480
Sodium fluoride (sat)	7681-49-4	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Sodium hydroxide (50%)	1310-73-2	Liquid	>480
Sodium hypochlorite (15%)	7681-52-9	Liquid	>480
Sodium metabisulphite (38%)	7681-57-4	Liquid	>480
Sodium methylate (50% in Methanol)	124-41-4	Liquid	>480
Soman (GD), MIL-STD-282 (10 g/m^2)	96-64-0	Liquid	>480[8]
Spiritus	64-17-5	Liquid	>480
Stoddard solvent	8052-41-3	Liquid	>480
Styrene	100-42-5	Liquid	>480
Sulfamic acid (15%)	5329-14-6	Liquid	>480
Sulfamidic acid (15%)	5329-14-6	Liquid	>480
Sulfur Mustard (HD), MIL-STD-282 (10 g/m^2)	505-60-2	Liquid	>480[8]
Sulfur Mustard (HD), MIL-STD-282 (100 g/m^2)	505-60-2	Liquid	>480[8]
Sulfur dioxide	7446-09-5	Vapor	>480
Sulfur hexafluoride	2551-62-4	Vapor	>480
Sulfur monochloride	10025-67-9	Liquid	>480
Sulfur trioxide	7446-11-9	Liquid	90
Sulfuric acid (>95%)	7664-93-9	Liquid	>480
Sulfuric acid dimethyl ester	77-78-1	Liquid	>480
Sulfuric acid fuming (20% free SO3)	8014-95-7	Liquid	>480
Sulfuric acid fuming (30% free SO3)	8014-95-7	Liquid	>480
Sulfuric acid fuming (40% free SO3)	8014-95-7	Liquid	>480
Sulfuryl chloride	7791-25-5	Liquid	>480
Sulphur dichloride (80%)	10545-99-0	Liquid	70
Tabun (GA), MIL-STD-282 (10 g/m^2)	77-81-6	Liquid	>480[8]
Tetrachloro ethane, 1,1,2,2,-	79-34-5	Liquid	>480
Tetrachloro ethylene, 1,1,2,2-	127-18-4	Liquid	>480
Tetrachloro methane	56-23-5	Liquid	>480
Tetraethoxysilane	78-10-4	Liquid	>480
Tetraethyl ammonium hydroxide (35%)	77-98-5	Liquid	>480
Tetraethyl lead	78-00-2	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Tetraethylene pentamine	112-57-2	Liquid	>480
Tetrafluoroethane, 1,1,1,2-	811-97-2	Vapor	>480
Tetrafluoromethane	75-73-0	Vapor	>480
Tetrahydrofuran	109-99-9	Liquid	>480
Tetramethyl tin (0.5% in Pentane)	594-27-4	Liquid	>480
Thioglycolic acid	68-11-1	Liquid	>480
Thionyl chloride	7719-09-7	Liquid	35
Titan(IV) chloride	7550-45-0	Liquid	>480
Titanium tetrachloride	7550-45-0	Liquid	>480
Toluene	108-88-3	Liquid	>480
Toluene diisocyanate, 1,3-	26471-62-5	Liquid	>480
Toluene diisocyanate, 2,4-	584-84-9	Liquid	>480
Toluene diisocyanate, 2,4- (80%)	584-84-9	Liquid	>480
Toluidine, m-	108-44-1	Liquid	>480
Toluidine, o-	95-53-4	Liquid	>480
Trichlor vinylsilane	75-94-5	Liquid	100
Trichloro 1,2,2-trifluoroethane, 1,1,2-	76-13-1	Liquid	>480
Trichloro 1,3,5-triazine, 2,4,6- (20% in Toluene)	108-77-0	Liquid	>480
Trichloro benzene, 1,2,4-	120-82-1	Liquid	>480
Trichloro ethane, 1,1,1-	71-55-6	Liquid	>480
Trichloro ethane, 1,1,2-	79-00-5	Liquid	>480
Trichloro ethanol, 2,2,2-	115-20-8	Liquid	>480
Trichloro ethylene	79-01-6	Liquid	>480
Trichloro methane	67-66-3	Liquid	>480
Trichloro phenylsilane	98-13-5	Liquid	>480
Trichloro silane	10025-78-2	Liquid	>480
Triethyl amine	121-44-8	Liquid	>480
Triethylentetramine (60%)	112-24-3	Liquid	>480
Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	382-10-5	Vapor	>480
Trifluoro acetic acid	76-05-1	Liquid	>480

Hazard / Chemical Name	Cas Number	Phase	Normalized Break Through
Trifluoro ethanol, 2,2,2-	75-89-8	Liquid	>480
Trifluoro methane	75-46-7	Vapor	>480
Trifluoro methansulfonic acid	1493-13-6	Liquid	>480
Trimethyl aminomethane	75-64-9	Liquid	>480
Trimethyl phosphate	512-56-1	Liquid	>480
Trimethyl phosphite	121-45-9	Liquid	>480
Tripropyl amine	102-69-2	Liquid	>480
Tungsten hexafluoride	7783-82-6	Vapor	>480
VM & P Naphtha	8030-30-6	Liquid	>480
VX Nerve Agent, MIL-STD-282 (10 g/m^2)	50782-69-9	Liquid	>480[8]
VX Nerve Agent, MIL-STD-282 (100 g/m^2)	50782-69-9	Liquid	>480[8]
Vinyl acetate	108-05-4	Liquid	>480
Vinyl benzol	100-42-5	Liquid	>480
Vinyl carbinol	107-18-6	Liquid	>480
Vinyl chloride	75-01-4	Vapor	>480
Vinyl cyanide	107-13-1	Liquid	>480
Vinyl ethylene (gaseous)	106-99-0	Vapor	>480
Vinyl magnesium chloride (15% in Tetrahydrofuran)	3536-96-7	Liquid	imm
Vinyl magnesium chloride (16.5% in Tetrahydrofuran)	3536-96-7	Liquid	>480
Vinyl pyridine, 4-	100-43-6	Liquid	15
Vinylidene chloride	75-35-4	Liquid	>480
White Liquor	mix	Liquid	>480
Xylene, mixed isomers	1330-20-7	Liquid	>480
m-Cresol 55%, p-Cresol 30%, Phenol 15% (mix)	mix	Liquid	>480
t-Sodium-amylate / t-amyl alcohol (mix)	mix	Liquid	120

BT0.1 Normalized breakthrough time at 0.1 µg/cm²/min [mins] 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

SPECIAL WARNINGS

- *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.

Important Note:

Cellosolve® and Selexol™ are registered trademarks of Dow Chemicals Company. Skydrol® is a registered trademark of Solutia.