PERMEATION GUIDE FOR DUPONT™ TYCHEM® PROTECTIVE FABRICS

Effective June 2004. This guide replaces all previously published until superseded.

PROTECTION AGAINST A BROAD RANGE OF CHEMICALS

DuPont™ Tychem® Fabrics Included in this Permeation Guide

Tychem® Limited Use Fabrics

- Tychem® CPF 1
- Tychem® QC
- Tychem® CPF 2
- Tychem® SL
- Tychem® CPF 3
- Tychem® F
- Tychem® CPF 4
- Tychem® BR
- Tychem® Responder®
- Tychem® TK
- Tychem® Reflector®

Tychem® Reusable Fabrics

- DuPont™Tychem® CPE
- DuPont™Tychem® PVC
- DuPont™Tychem® Butyl

Permeation Guide Revisions -- see page 2 for complete details:

- All Standard Safety Equipment products have been removed
- DuPont™Tychem® PVC and DuPont™Tychem® CPE products have been added
- New chemical data has been added for Tychem® F and several other fabrics

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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 the garment manufacturer for specific data. If fabric becomes torn, abraded or punctured, end user should discontinue use of garment to avoid potential exposure to chemical.

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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.

Warning:
- Tychem® fabrics should not be used around heat, flames, sparks, or potentially explosive environments.
- Tychem® fabrics should have slip resistant or antislip materials on the outer surface of boots, shoe covers or other garment surfaces where slipping could occur.

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Permeation Guide for DuPont™ Tychem® Fabrics.
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Fabric	Chemical Name	CAS Number	Data Added	Data Revised: Previous minute / ug/cm2/min	Data Revised: Current minute / ug/cm2/min
Tychem QC	Skydrol LD-4	95660-51-8	X		
Tychem SL	Cyclohexanone	108-94-1	X		
Tychem SL	Chlorobenzene	108-90-7		36 / 14.1	imm. / 5.4
Tychem SL	N,N-Dimethylformamide	68-12-2		95 / 0.11	78 / 0.46
Tychem CPF 2	Cyclohexanone	108-94-1	X		
Tychem CPF 2	Chlorobenzene	108-90-7		36 / 14.1	imm. / 5.4
Tychem CPF 2	N,N-Dimethylformamide	68-12-2		95 / 0.11	78 / 0.46
Tychem CPF 4	Cyclohexanone	108-94-1	X		
Tychem F	Acetaldehyde	75-07-0		109 / 0.56	imm. / 11
Tychem F	Allyl chloride	107-05-1		imm. / <0.1	>480 / <0.1
Tychem F	Acetone cyanohydrin	75-86-5	X		
Tychem F	Acetyl chloride	75-36-5	X		
Tychem F	Adiponitrile	111-69-3	X		
Tychem F	Benzene sulfonyl chloride	98-09-9	X		
Tychem F	Benzoyl chloride	98-88-4	X		
Tychem F	Benzyl chloride	100-44-7	X		
Tychem F	Bis-phenol-A-diglycidyl ether	1675-54-3	X		
Tychem F	Borone trifluoride dimethyletherate	109-63-7	X		
Tychem F	p-Bromofluorobenzene	460-00-4	X		
Tychem F	n-Butanol	71-36-3	X		
Tychem F	ChloroBenzene	108-90-7	X	70 / 0.43	>480 / <0.1
Tychem F	ChloroSulfonic acid	7790-94-5	X		
Tychem F	o-Chlorotoluene	95-49-8	X		
Tychem F	Cumene	98-82-8	X		
Tychem F	1,3-Dichloroacetone	534-07-6	X		
Tychem F	2,3-Dichloro-1-propene	78-88-6	X		
Tychem F	Diethylentriamine	111-40-0	X		
Tychem F	N,N-Dimethylacetamine	127-19-5	X		
Tychem F	Dimethylamine	124-40-3	X		
Tychem F	N,N-Dimethylaniline	121-69-7	X		
Tychem F	Dimethyldichlorosilane	75-78-5	X		
Tychem F	Dimethyl sulfate	77-78-1	X		
Tychem F	DimethylSulfide	75-18-3		26 / 0.58	271 / 1.21
Tychem F	Ethyl cellosolve acetate	111-15-9	X		
Tychem F	Ethyl ether	60-29-7	X		
Tychem F	Fluorosilic acid	16961-83-4	X		
Tychem F	Fluorobenzene	462-06-6	X		
Tychem F	Hexamethylenediamine	124-09-4	X		
Tychem F	Hydrogen bromide	10035-10-6	X		
Tychem F	Hydrogen fluoride anhydrous (18°C)	7664-39-3	X		
Tychem F	Isopropylamine	75-31-0	X		
Tychem F	Kerosene	8008-20-6	X		

Fabric	Chemical Name	CAS Number	Data Added
Tychem F	d-Limonene	5989-27-5	X
Tychem F	Methyl acrylate	96-33-3	X
Tychem F	Methacrylic acid	79-41-4	X
Tychem F	Methyl amine gas	74-89-5	X
Tychem F	Methyl cellosolve acetate	110-49-6	X
Tychem F	Methylene bromide	74-95-3	X
Tychem F	Methyl ethyl ketoxime	96-29-7	X
Tychem F	Methylglutaronitrile	4553-62-2	X
Tychem F	Methyl hydrazine	60-34-4	X
Tychem F	Methyl trichlorosilane	75-79-6	X
Tychem F	Nicotine	54-11-5	X
Tychem F	2-Nitropropane	79-46-9	X
Tychem F	Oleum, 40% free SO2	8014-95-7	X
Tychem F	2-Picoline	109-06-8	X
Tychem F	Pyridine	110-86-1	X
Tychem F	Pyrrolidine	123-75-1	X
Tychem F	Silicon tetrachloride	10026-04-7	X
Tychem F	Sulfuryl chloride	7791-25-5	X
Tychem F	Thioglycolic acid	68-11-1	X
Tychem F	Thionyl chloride	9/7/7719	X
Tychem F	Titanium tetrachloride	7550-45-0	X
Tychem F	1,1,2-Trichloroethane	811-97-2	X
Tychem F	2,2,2-Trichloroethanol	115-20-8	X
Tychem F	Trichloroethylene	79-01-6	X
Tychem F	Trichloronitromethane	76-06-2	X
Tychem F	Trichlorophenylsilane	98-13-5	X
Tychem F	Trifluoromethane sulfonic acid	1493-13-6	X
Tychem F	Vinyl acetate	108-05-4	X
Tychem F	Vinylidene chloride	75-35-4	X
Tychem CPF 3	Mercury	7439-97-6	X
Tychem CPF 3	Methyl chloride	74-87-3	X
Tychem CPF 3	Hydrogen chloride gas	7647-01-0	X
Tychem CPF 3	2-Phenylethanal	60-12-8	X
Tychem BR	MethaneSulfonyl chloride	124-63-0	X
Tychem BR	Tripropylamine	102-69-2	X
Responder	MethaneSulfonyl chloride	124-63-0	X
Responder	Tripropylamine	102-69-2	X
Tychem TK	MethaneSulfonyl chloride	124-63-0	X
Tychem TK	Tripropylamine	102-69-2	X
Reflector	MethaneSulfonyl chloride	124-63-0	X
Reflector	Tripropylamine	102-69-2	X

All Standard Safety Equipment data has been removed

DuPont™Tychem® PVC and DuPont™Tychem® CPE products have been added

For additional information go to www.personalprotection.dupont.com or call 1-800-931-3456.

Permeation Guide for DuPont™ Tychem® Protective Fabrics

Effective June 2004. This guide replaces all previously published until superseded.

How to Use this Permeation Guide

To Find Permeation Test Results

1. Locate the desired chemical in the **Chemical Index.**

   The **Chemical Index** is presented in two ways:

   - **Alphabetical** Index
   - Index by **Chemical Abstract System (CAS) Number**

   For each chemical, the following information is listed.
   - Chemical name
   - Chemical subclass number(s)
   - CAS number
   - Chemical name used in data table if name listed is a synonym
   - Whether the chemical has been tested (T) or not tested (nt) on Tychem® Limited-Use and/or Tychem® Reusable Fabrics

2. Locate the subclass(es) of the chemical in the permeation data table(s). There are two separate data tables, one for limited use fabrics, and one for reusable fabrics.

3. If the chemical has been tested, find the chemical name under its sub-class(es) and read across to find the permeation test results for the chemical.

4. If the chemical has not been tested, the subclass number is provided so users may view permeation data for tested chemicals in the same subclass.

Independent Testing

All permeation tests are conducted for DuPont by independent testing laboratories. Except for the chemical warfare agents, all results are based on ASTM F739, "Test Method for Resistance of Protective Clothing Materials to Permeation by Liquids or Gases under Continuous Contact. Chemical warfare agents are tested using MIL-STD282.

All tests were conducted at room temperature unless otherwise noted. Copies of individual reports are available by calling 1-800-931-3456.

What is Permeation?

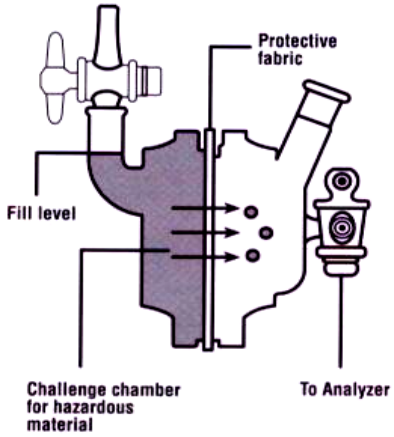
Permeation is a difficult concept to grasp because it can't be seen and does not require a hole in the barrier. It occurs when a chemical is absorbed until it saturates the barrier and then desorbs, or diffuses, from the opposite surface.

You may have experienced permeation firsthand if you stepped in gasoline at a filling station. If you noticed the odor of gasoline in your car as you drove away you experienced two of the three steps involved in permeation - absorption and desorption. The soles of your shoes absorbed some gasoline, then you smelled it as it desorbed from the bottom surface of your shoe. If you had stood in the gasoline long enough, the sole of your shoe would have become saturated with gasoline and the vapors would have started to desorb inside your shoe.

When it comes to hazardous liquids, vapors or gases, permeation testing is required.

How Permeation Tests Are Conducted

Permeation tests are conducted following the ASTM F739 "Test Method for Resistance of Protective Clothing Materials to Permeation by Liquids and Gases." A swatch of test fabric is inserted into a special test cell, with the outside surface of the fabric toward the challenge chamber, thus exposing it to a challenge chemical. The inside surface of the fabric is toward the sampling chamber. If the chemical moves through the protective clothing fabric and is detected on the inside surface of the fabric, it is said to have permeated the fabric.



ASTM F739 Test Cell

Definitions of Terms for ASTM F739

Permeation rate: The rate at which the challenge chemical permeates the fabric. In these tables, the permeation rate reflects the steady state rate when chemical contact is continuous and all forces affecting permeation have reached equilibrium.

Minimum Detectable Permeation Rate (MDPR): The minimum permeation rate that can be detected during a permeation test. MDPR is a function of the sensitivity of the analytical measurement technique, the volume into which the permeant is collected, and sampling time. Minimum detectable permeation rates as low as 0.001 µg/cm^2/minute are possible for many chemicals.

Actual breakthrough time: The time between initial contact of the chemical with the outside surface of the fabric and the detection of permeation.

An actual breakthrough time of >480 does not mean there was no breakthrough. It means that permeation was not detected. Permeation may have occurred, but at a rate less than the minimum detectable permeation rate (MDPR).

Normalized breakthrough time: The time at which permeation rate reaches 0.1 µg/cm^2/min. Normalized breakthrough times are used in this table. They are used for fabric comparison because they eliminate test sensitivity issues.

A normalized breakthrough time of >480 minutes does not mean there was not permeation; it means that the rate of permeation did not exceed 0.1 µg/cm^2/min during the 8-hour test. When the normalized breakthrough time is ten minutes or less, DuPont chooses to report the breakthrough time as immediate.

Results of permeation tests are variable. The results reported here are averages of three or more separate tests. Users should not be misled in assuming these breakthrough times and permeation rates are exact. This variability should be taken into account in material selection. (See ASTM F739.)

PLEASE NOTE: in Europe, normalized breakthrough times are based on a permeation rate of 1.0 µg/cm^2/min . This is 10 times less sensitive than the basis used in North America.

Physical phase: The phase of the challenge chemical during the test being reported: solid-S, liquid-L, gas-G, mixture-M.

CAS: Chemical Abstract System

N/A: Not applicable

CHEMICAL CLASS & SUBCLASS LISTING*

100 Carboxylic acids
- 102 Aliphatic and Alicyclic, Unsubstituted
- 103 Aliphatic and Alicyclic, Substituted
- 104 Aliphatic and Alicyclic, Polybasic

110 Acid Halides, Carboxylic
- 111 Aliphatic and Alicyclic
- 112 Aromatic
- 113 Chloroformates

120 Aldehydes
- 121 Aliphatic and Alicyclic
- 122 Aromatic

130 Amides
- 132 Aliphatic and Alicyclic
- 135 Acrylamides

140 Amines
- 141 Aliphatic and Alicyclic, Primary
- 142 Aliphatic and Alicyclic, Secondary
- 143 Aliphatic and Alicyclic, Tertiary
- 145 Aromatic, Primary
- 146 Aromatic, Secondary and Tertiary
- 148 Aliphatic and Alicyclic Polyamines
- 149 Aromatic Polyamines

160 Anhydrides
- 161 Aliphatic and Alicyclic

210 Isocyanates
- 211 Aliphatic and Alicyclic
- 212 Aromatic

220 Carboxylic Esters
- 221 Formates
- 222 Acetates
- 223 Acrylates and Methacrylates
- 224 Aliphatic, Others
- 225 Lactones
- 226 Benzoates and Phthalates

230 Non-Carboxylic Esters
- 233 Carbamates and Others

240 Ethers
- 241 Aliphatic and Alicyclic
- 245 Glycol Ethers
- 246 Vinylic

260 Halogen Compounds
- 261 Aliphatic and Alicyclic
- 263 Aromatic
- 264 Vinylic
- 265 Alylic
- 266 Benzylic

270 Heterocyclic Compounds
- 271 Nitrogen, Pyridines
- 274 Nitrogen, Others
- 275 Oxygen, Epoxides
- 277 Oxygen, Furans
- 278 Oxygen, Others

280 Hydrazines

290 Hydrocarbons
- 291 Aliphatic and Alicyclic, Saturated
- 292 Aromatic
- 293 Aromatic Polynuclear
- 294 Aliphatic and Alicyclic, Unsaturated
- 296 Polyenes

300 Peroxides

310 Hydroxylic Compounds
- 311 Aliphatic and Alicyclic, Primary
- 312 Aliphatic and Alicyclic, Secondary
- 313 Aliphatic and Alicyclic, Tertiary
- 314 Aliphatic and Alicyclic, Polyols
- 315 Aliphatic and Alicyclic, Substituted
- 316 Aromatic, Phenols
- 318 Aromatic, Others

330 Elements

340 Inorganic Salts (Solutions)

345 Inorganic Cyano Compounds

350 Inorganic Gases and Vapors

360 Inorganic Acid Halides

365 Inorganic Acid Oxides

370 Inorganic Acids

380 Inorganic Bases

390 Ketones
- 391 Aliphatic and Alicyclic
- 392 Aromatic

430 Nitriles
- 431 Aliphatic and Alicyclic
- 432 Aromatic

440 Nitro Compounds
- 441 Unsubstituted
- 442 Substituted

450 Nitroso Compounds

460 Organo-Phosphorus Compounds
- 462 Derivatives of Phosphorus-based acids

470 Organo-Metallic Compounds

480 Organo-Silicon Compounds

500 Sulfur Compounds
- 501 Thiols
- 502 Sulfides and Disulfides
- 503 Sulfones and Sulfoxides
- 504 Sulfonic Acids
- 505 Sulfonyl Chlorides
- 507 Sulfonates, Sulfates,and Sulfites
- 509 Other

550 Organic Salts (Solutions)

590 Miscellaneous (Not classified)

595 Chemical Warfare Agents

*Partial list based on ASTM F1186. A complete copy of ASTM F1186 may be purchased from ASTM.

Permeation Guide for DuPont™ Tychem® Fabrics. Effective January 2004.

ASTM F1001 List of Challenge Chemicals (Permeation Test Method ASTM F739)

Standardized Breakthrough Times for DuPont™ Tychem® Limited Use Fabrics

Sub-Class	Chemical Name	CAS Number	Phase	Standardized Breakthrough Time (Minutes)										
				Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR / Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
391	Acetone	67-64-1	L	imm.	imm.	12	12	>480	>480	>480	>480	>480	>480	>480
431	Acetonitrile	75-05-8	L	imm.	imm.	12	12	imm.	157	>480	>480	>480	>480	>480
350	Ammonia gas	7664-41-7	G		imm.	32	32	12	79	>480	46	>480	>480	>480
296	1,3-Butadiene	106-99-0	G		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
502	Carbon disulfide	75-15-0	L	imm.	imm.	imm.	imm.	16	>480	>480	>480	>480	>480	>480
330 / 350	Chlorine gas	7782-50-5	G		imm.	>480	>480	>480	>480*	>480	>480	>480	>480	>480
261	Dichloromethane	75-09-2	L	imm.	imm.	imm.	imm.	imm.	imm.	114	432	>480	>480	>480
142	Diethylamine	109-89-7	L	imm.	imm.	12	12	>480	>480	>480	>480	>480	>480	>480
132	N,N-Dimethylformamide	68-12-2	L	25	imm.	78	78	>480	>480	>480	>480	>480	>480	>480
222	Ethyl acetate	141-78-6	L	imm.	imm.	14	14	>480	>480	>480	>480	>480	>480	>480
275	Ethylene oxide gas	75-21-8	G		imm.	imm.	imm.	>480	65	305	>480	>480	>480	>480
291	n-Hexane	110-54-3	L	imm.	imm.	10	10	>480	>480	>480	>480	>480	>480	>480
350	Hydrogen chloride gas	7647-01-0	G		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
311	Methanol	67-56-1	L	imm.	imm.	>480	>480	imm.	77	>480	157	>480	>480	>480
261	Methyl chloride	74-87-3	G		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
441	Nitrobenzene	98-95-3	L	imm.	imm.	102	102	>480	>480	>480	>480	>480	>480	>480
380	Sodium hydroxide, 50%	1310-73-2	L	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
370	Sulfuric acid, 98%	7664-93-9	L	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
264	1,1,2,2-Tetrachloroethylene	127-18-4	L	imm.	imm.	imm.	imm.	>480	>480	>480	>480	>480	>480	>480
241	Tetrahydrofuran	109-99-9	L	imm.	imm.	imm.	imm.	>480	464	>480	>480	>480	>480	>480
292	Toluene	108-88-3	L	imm.	imm.	imm.	imm.	>480	>480	>480	>480	>480	>480	>480

> = greater than imm. = immediate (<10 minutes) L = Liquid G = Gas

ASTM F1001 List of Challenge Chemicals (Permeation Test Method ASTM F739)

Standardized Breakthrough Times for DuPont™ Tychem® Reusable Fabrics

Sub-Class	Chemical Name	CAS Number	Phase	Standardized Breakthrough Time (Minutes)		
				DuPont™ Tychem® CPE	DuPont™ Tychem® Butyl	DuPont™ Tychem® PVC
391	Acetone	67-64-1	L	54	125	imm.
431	Acetonitrile	75-05-8	L	316	120	imm.
350	Ammonia gas	7664-41-7	G	>480		
296	1,3-Butadiene	106-99-0	G	357		
502	Carbon disulfide	75-15-0	L	imm.	imm.	imm.
330 / 350	Chlorine gas	7782-50-5	G	417		
261	Dichloromethane	75-09-2	L	13	imm.	imm.
142	Diethylamine	109-89-7	L	45	imm.	15
132	N,N-Dimethylformamide	68-12-2	L	249	>480	24
222	Ethyl acetate	141-78-6	L	54	28	imm.
275	Ethylene oxide gas	75-21-8	G	80		
291	n-Hexane	110-54-3	L	78	imm.	imm.
350	Hydrogen chloride gas	7647-01-0	G	>480		
311	Methanol	67-56-1	L	>480	304	13
261	Methyl chloride	74-87-3	G	>480		
441	Nitrobenzene	98-95-3	L	169	>480	>480
380	Sodium hydroxide, 50%	1310-73-2	L	>480	>480	>480
370	Sulfuric acid, 95%	7664-93-9	L	>480	160	150
264	1,1,2,2-Tetrachloroethylene	127-18-4	L	61	imm.	13
241	Tetrahydrofuran	109-99-9	L	20	imm.	imm.
292	Toluene	108-88-3	L	20	imm.	imm.

> = greater than imm. = immediate (<10 minutes) = not tested L = Liquid G = Gas

*Actual breakthrough time; standardized data not available.

Chemical Warfare Agents

Permeation test results are shown as follows:

Average Breakthrough Time (minutes)
Minimum Detectable Permeation Rate (µg/cm²/min)

> = greater than
< = less than
= not tested

Age	Common Name	CAS Number	Protocol	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
GA	Tabun	77-81-6	DN5						>720 8 X 10^{-7}	>720 8 X 10^{-7}	>720 8 X 10^{-7}	>720 8 X 10^{-7}
			DN6				>720 2 X 10^{-6}				>720 4 X 10^{-7}	
GB	Sarin	107-44-8	DN5	360 1 X 10^{-5}	360 1 X 10^{-5}	120 0.004		360 1 X 10^{-5}	>720 4.2 X 10^{-7}	>720 4.2 X 10^{-7}	>720 4.2 X 10^{-7}	>720 4.2 X 10^{-7}
			DN6				>720 2 X 10^{-6}		>720 4 X 10^{-4}	>720 4 X 10^{-4}	>720 1 X 10^{-6}	>720 4 X 10^{-4}
GD	Soman	99-64-0	DN5			>480 0.004			>720 4.2 X 10^{-7}	>720 4.2 X 10^{-7}	>720 2.1 X 10^{-7}	>720 4.2 X 10^{-7}
			DN6				>720 2 X 10^{-6}				>720 4 X 10^{-7}	
HD	Sulfur Mustard	505-60-2	DN3	180 0.002	180 0.002	120 0.004		180 0.002	>720 4.2 X 10^{-7}	>720 4.2 X 10^{-7}	>720 0.00021	>720 4.2 X 10^{-7}
			DN4				>720 <0.002		>720 8 X 10^{-4}	>720 8 X 10^{-4}	>720 8 X 10^{-4}	>720 8 X 10^{-4}
L	Lewisite	541-25-3	DN3	>360 8 X 10^{-4}	>360 8 X 10^{-4}	120 0.005		>360 8 X 10^{-4}	>720 2.5 X 10^{-5}	>720 2.5 X 10^{-5}	>720 0.0000125	>720 2.5 X 10^{-5}
			DN4				360 0.006		120 7 X 10^{-5}	120 7 X 10^{-5}	>720 8 X 10^{-4}	120 7 X 10^{-5}
VX	VX Nerve Age	50782-69-9	DN5	>720 5 X 10^{-7}	>720 5 X 10^{-7}	>480 0.0042		>720 5 X 10^{-7}	>720 4.2 X 10^{-7}	>720 4.2 X 10^{-7}	>720 2.1 X 10^{-7}	>720 4.2 X 10^{-7}
			DN6				>720 2 X 10^{-6}		>720 8 X 10^{-7}	>720 8 X 10^{-7}	>720 8 X 10^{-7}	>720 8 X 10^{-7}

Fabric Test Protocols. All tests performed in triplicate for DuPo Personal Protection by an independe accredited laboratory at 22º C, 50% R.H.
Protocol DN3 - MIL-STD-282, Method T-209 (HD) or modified for Lewisite, for 12 hours at 10 g/m².
Protocol DN4 - MIL-STD-282, Method T-209 (HD) or modified for Lewisite, for 12 hours at 100 g/m² (total coverage).
Protocol DN5 - MIL-STD-282, Method T-208 (GB) or modified for GA, GD, and VX, for 12 hours at 10 g/m².
Protocol DN6 - MIL-STD-282, Method T-208 (GB) or modified for GA, GD, and VX, for 12 hours at 100 g/m² (total coverage).

Data Table for Tychem® Limited-Use Fabrics

Permeation test results are listed as follows:
Average Standardized BreakthroughTime (minutes)
Average Steady-State Permeation Rate (µg/cm²/min.)

Symbols and Abbreviations used in data table:
> = more than < = less than imm. = immediate (less than 10 minutes)
nm = not measured nd = not detected S = Solid L = Liquid G = Gas
* Actual breakthrough time; standardized data not available.

Class	Sub-Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
100 Carboxylic acids															
	102 Aliphatic and Alicyclic, Unsubstituted														
		Acetic acid	64-19-7	L		imm.	>480	>480	84	>480	>480	339	>480	>480	>480
						3	<0.1	<0.1	1.21	0.08	<0.1	1.3	<0.1	<0.1	<0.1
		Acetic acid, 84%	64-19-7	L							>480				
											<0.1				
		Acrylic acid	79-10-7	L		imm.	>480	>480		>480	>480	270	>480	>480	270
						5.4	<0.001	<0.001		<0.001	<0.001	1.6	<0.1	<0.06	1.6
		Butyric acid	107-92-6	L									>480		
													<0.1		
		Formic acid	64-18-6	L		imm.	>480	>480	>480	>390	>480	>480	>480	>480	>480
						0.33	<0.1	<0.1	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01
		Methacrylic acid	79-41-4	L						>480		>480	>480	>480	>480
										<0.0001		<0.01	<0.1	<0.01	<0.01
		Octanoic acid	124-07-2	L							>480				
											<0.1				
		Propionic acid	79-09-4	L									>480		
													<0.1		
	103 Aliphatic and Alicyclic, Substituted														
		Chloroacetic acid	79-11-8	L						>480		>480	>480	>480	>480
										<0.1		<0.1	<0.1	<0.1	<0.1
		Chloroacetic acid (65º C)	79-11-8	L									60		
													63.7		
		Chloroacetic acid, 75%-80%	79-11-8	L		370	>480	>480			>480	>480	>480	>480	>480
						1	<0.1	<0.1			<0.1	<0.01	<0.01	<0.01	<0.01
		Glycolic acid, sat. sol. in water	79-14-1	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Thioglycolic acid	68-11-1	L						>480		>480	>480	>480	>480
										<0.0001		<0.1	<0.1	<0.1	<0.1
		Trichloroacetic acid	76-03-9	L						>480					
										<0.1					
		Trifluoroacetic acid	76-05-1	L			>480	>480		>480	>480		>480		
							<0.1	<0.1		<0.01	<0.1		<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
	104 Aliphatic and Alicyclic, Polybasic														
		Maleic acid, sat.	110-16-7	L									>480		
													<0.1		
		Oxalic acid, 10.5%	144-62-7	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Oxalic acid dihydrate, sat. sol.	6153-56-6	L					>480						
									<0.1						
110 Acid Halides, Carboxylic															
	111 Aliphatic and Alicyclic														
		Acetyl chloride	75-36-5	L			37*	37*		>480	37*	181	>240	>480	181
							1.1	1.1		<0.0014	1.1	2	<0.1	<0.05	2
		Chloroacetyl chloride	79-04-9	L			120	120	77		120	160	>480	160	160
							15.6	15.6	1.03		15.6	23.2	<0.1	23.2	23.2
		Dichloroacetyl chloride	79-36-7	L								100	100	>480	100
												20.5	20.5	<0.01	20.5
		Trifluoroacetyl chloride	354-32-5	G									>480		
													<0.1		
	112 Aromatic														
		Benzoyl chloride	98-88-4	L					>480	>480		>480	>480	>480	>480
									<.001	<0.05		<0.05	<0.05	<0.05	<0.05
	113 Chloroformates														
		Benzyl chloroformate	501-53-1	L					>480						
									<0.1						
		Methyl chloroformate	79-22-1	L								>480	>480	>480	>480
												0.011	0.011	0.011	0.011
120 Aldehydes															
	121 Aliphatic and Alicyclic														
		Acetaldehyde	75-07-0	L						imm.	>480	>480	>480	>480	>480
										11	<0.1	<0.01	<0.1	<0.01	<0.01
		Acrolein	107-02-8	L			60	60		63	60	>480	>480	>480	>480
							4.1	4.1		0.41	4.1	<0.02	<0.02	<0.02	<0.02
		Acrolein, 59%	107-02-8	L			imm.	imm.			imm.	>480	>480	>480	>480
							5.3	5.3			5.3	<0.1	<0.1	<0.1	<0.1
		n-Butyraldehyde	123-72-8	L		imm.	50	50			50	>480	>480	>480	>480
						22	6.1	6.1			6.1	<0.007	<0.1	<0.007	<0.007
		trans-Crotonaldehyde	123-73-9	L			38	38			38	>480	>480	>480	>480
							0.77	0.77			0.77	<0.006	<0.01	<0.006	<0.006
		Formaldehyde gas, 100 ppm	50-00-0	G								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Formaldehyde gas, 1000 mg/m^3	50-00-0	G									>480		
													<0.1		
		Formalin (Formaldehyde 37%)	50-00-0	L		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
						0.31	<0.1	<0.1	<0.1	<0.001	<0.1	<0.09	<0.09	<0.09	<0.09
		Formalin, 10%	50-00-0	L		>480									
						0.003									
		Gluteraldehyde, 5% aqueous sol.	111-30-8	L		>480	>480	>480			>480	>480	>480	>480	>480
						<0.02	<0.04	<0.04			<0.04	<0.1	<0.1	<0.1	<0.1
		Gluteraldehyde, 50%	111-30-8	L	>480		>480	>480			>480	>480	>480	>480	>480
					<0.1		<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1
		Propionaldehyde	123-38-6	L									>480		
													<0.1		
	122 Aromatic														
		Benzaldehyde	100-52-7	L							>480				
											<0.1				
		2-Furaldehyde	98-01-1	L			245*	245*	>480	>480	245*	>480	>480	>480	>480
							0.2	0.2	<0.1	0.01	0.2	<0.01	<0.01	<0.01	<0.01
130 Amides															
	132 Aliphatic and Alicyclic														
		N,N-Dimethylacetamide	127-19-5	L			64*	64*	>480	>480	64*	>480	>480	>480	>480
							2.04	2.04	<0.1	<0.05	2.04	<0.006	<0.1	<0.006	<0.006
		N,N-Dimethylacetamide, 8% in water	127-19-5	L		>480									>480
						<0.0069									<0.006
		N,N-Dimethylformamide	68-12-2	L	25	imm.	78	78	>480	>480	>480	>480	>480	>480	>480
					0.26	0.72	0.46	0.46	<0.1	<0.01	<0.1	<0.001	<0.1	<0.01	<0.1
		N-Methylformamide	123-39-7	L					>480	>480					
									<0.04	<0.05					
		n-Methyl-2-pyrrolidone	872-50-4	L			>480	>480		>480	>480	>480	>480	>480	>480
							<0.06	<0.06		<0.001	<0.1	<0.01	<0.01	<0.01	<0.01
	135 Acrylamides														
		Acrylamide, 50% in water	79-06-1	L			>480	>480		>480	>480	>480	>480	>480	>480
							<0.01	<0.01		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1
		N,N-Dimethylacetamine, 8% in water	127-19-4	L		>480									
						<0.0069									
		N-Methylmethacrylamide	3887-02-3	L									>480		
													<0.1		
140 Amines															
	141 Aliphatic and Alicyclic, Primary														
		n-Butylamine	109-73-9	L					>480			>480	>480	>480	>480
									<0.1			<0.01	<0.1	<0.01	<0.01

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		tert-Butylamine	75-64-9	L								>480	>480	>480	>480
												<0.03	<0.03	<0.03	<0.03
		Cyclohexylamine	108-91-8	L									>480		
													<0.1		
		Ethanolamine	141-43-5	L					>480	>480		>480	>480	>480	>480
									<0.1	<0.001		<0.1	<0.1	<0.1	<0.1
		Ethylamine (15º C)	75-04-7	L								361	361	>480	361
												1.49	1.49	<0.02	1.49
		Ethylamine 70% w/w	75-04-7	L									>240		
													<0.1		
		Isopropylamine	75-31-0	L					15	>480		>480	>480	>480	>480
									22	<0.05		<0.01	<0.1	<0.01	<0.01
		Methylamine	74-89-5	G						>480	240	105	>480	>480	105
										<0.05	0.89	40	<0.1	<0.06	40
		Methylamine, 40% sol.	74-89-5	L					140			261	261	261	261
									8.04			1.8	1.8	1.8	1.8
		Methylamine, 50%	74-89-5	L								232	232	232	232
												2.2	2.2	2.2	2.2
		Nonylamine	112-20-9	L									>480		
													<0.1		
		n-Propylamine	107-10-8	L					100						
									1.3						
	142 Aliphatic and Alicyclic, Secondary														
		Diethanolamine	111-42-2	L					>480				>480		
									<0.1				<0.1		
		Diethylamine	109-89-7	L	imm	imm.	12	12	>480	>480	>480	>480	>480	>480	>480
					>24	64	>50	>50	<0.1	<0.001	<0.1	<0.001	<0.1	<0.1	<0.1
		Dimethylamine	124-40-3	G					>480	>480				>480	
									<0.01	<0.05				<0.05	
		Hexamethyldisilazane	999-97-3	L			>480	>480			>480	>480	>480	>480	>480
							<0.03	<0.03			<0.03	<0.02	<0.1	<0.02	<0.02
		Morpholine	110-91-8	L			153	153			153	>480	>480	>480	>480
							1.38	1.38			1.38	<0.1	<0.1	<0.1	<0.1
	143 Aliphatic and Alicyclic, Tertiary														
		Triethylamine	121-44-8	L			>480*	>480*			>480*	>480	>480	>480	>480
							<2	<2			<2	<0.1	<0.1	<0.1	<0.1
		Trimethylamine gas	75-50-3	G										>480	
														<0.1	
	145 Aromatic, Primary														
		Aniline	62-53-3	L		imm.	>480	>480	36	>480	>480	>480	>480	>480	>480

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
						2.1	0.09	0.09	1.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
		Benzidine, 25% in Methanol	92-87-5	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Benzidine, 75% in Methanol	92-87-5	L										>480	
														<0.1	
		4-Chloroaniline	106-47-8	S								>480	>480	>480	>480
												<0.09	<0.09	<0.09	<0.09
		4-Chloroaniline (70º C)	106-47-8	L			imm.	imm.		344	imm.	344	344	344	344
							90	90		9.4	90	9.4	9.4	9.4	9.4
		3,4-Dichloroaniline	95-76-1	S								>480	>480	>480	>480
												<0.001	<0.001	<0.001	<0.001
		3,4- Dichloroaniline (70°C)	95-76-1	L			imm.	imm.			imm.	284	284	284	284
							17	17			17	2.4	2.4	2.4	2.4
		Diethyl-m-toluidine crude	91-67-8	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		4,4'-Methylene dianiline	101-77-9	L										>480	
														<0.1	
		4,4'-Methylene dianiline,15% sol'n. in MEK	101-77-9	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		4,4'-Methylene dianiline,15% sol'n. in water	101-77-9	L									>480		
													<0.1		
		m-Toluidine	108-44-1	L			>480	>480			>480		>480		
							<0.001	<0.001			<0.001		<0.001		
		o-Toluidine	95-53-4	L		imm.	255*	255*		>480	>480	>480	>480	>480	>480
						1	0.36	0.36		<0.001	<0.1	<0.001	<0.001	<0.001	<0.001
	146 Aromatic, Secondary and Tertiary														
		Diethylaniline crude	91-66-7	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		N,N-Dimethylaniline	121-69-7	L						>480		>480	>480	>480	>480
										<0.1		<0.013	<0.013	<0.013	<0.013
		Tripropylamine	102-69-2	L								>480	>480	>480	>480
												<0.07	<0.07	<0.07	<0.07
	148 Aliphatic and Alicyclic Polyamines														
		Diethylenetriamine	111-40-0	L						>480		>480	>480	>480	>480
										<0.05		<0.01	<0.01	<0.1	<0.01
		Ethylenediamine	107-15-3	L		201*	>480	>480		>480	>480		>480		
						2.9	<0.01	<0.01		<0.001	<0.01		<0.1		
		1,6-Hexamethylenediamine (45º C)	124-09-4	L						>480		>480	>480	>480	>480
										<0.0001		<0.01	<0.01	<0.01	<0.01
	149 Aromatic Polyamines														

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Benzidine, 25% in Methanol	92-87-5	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Benzidine, 75% in Methanol	92-87-5	L										>480	
														<0.1	
		4,4'-Methylene bis (o-chloroaniline), sat. sol. in methanol	101-14-4	L			>480	>480			>480	>480	>480	>480	>480
							<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1
		4,4'-Methylene dianiline	101-77-9	L										>480	
														<0.1	
		4,4'-Methylene dianiline,15% sol'n. in MEK	101-77-9	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		4,4'-Methylene dianiline,15% sol'n. in water	101-77-9	L									>480		
													<0.1		
160 Anhydrides															
	161 Aliphatic and Alicyclic														
		Acetic anhydride	108-24-7	L			>480	>480	>480		>480	>480	>480	>480	>480
							<0.1	<0.1	<0.1		<0.1	<0.001	<0.1	<0.001	<0.1
		Maleic anhydride, sat.	108-31-6	L									>480		
													<0.1		
210 Isocyanates															
	211 Aliphatic and Alicyclic														
		Cyclohexyl isocyanate	3173-53-3	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Hexamethylene diisocyanate	822-06-0	L		>480	>480	>480		>480	>480	>480	>480	>480	>480
						<0.024	<0.001	<0.001		<0.07	<0.001	<0.01	<0.1	<0.01	<0.1
		Hexamethylene diisocyanate in DuPont Activator 193S	mixture	L		>480									
						<0.1									
		Hexamethylene diisocyanate in DuPont Activator 4505S	mixture	L		>480									
						<0.01									
		Hexamethylene diisocyanate in DuPont Activator 4507S	mixture	L		>480									
						<0.1									
		Isophorone diisocyanate	4098-71-9	L									>480		
													<0.1		
		Methyl isocyanate	624-83-9	L			imm.	imm.	12	imm.	imm.	>480	>480	>480	>480
							99	99	0.25	0.42	99	<0.013	<0.1	<0.013	<0.013
		Methyl isocyanate, 90%	624-83-9	L							>480				
											<0.1				
	212 Aromatic														
		4,4'-Diphenyl methane diisocyanate	101-68-8	S								>480	>480	>480	>480
												<0.07	<0.1	<0.07	<0.07

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Paraphenylene diisocyanate (PPDI) crude	104-49-4	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Phenyl isocyanate	103-71-9	L							>480				
											<0.1				
		Polymethylene polyphenylpolyisocyanate	9016-87-9	L			>480	>480		>480*	>480	>480	>480	>480	>480
							<0.01	<0.01		<0.65	<0.01	<0.1	<0.1	<0.1	<0.1
		Toluene-1,3-diisocyanate	26471-62-5	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Toluene-2,4-diisocyanate	584-84-9	L		imm.	>480	>480		>480	>480	>480*	>480*	>480*	>480*
						42	<0.05	<0.05		0.037	<0.05	<0.5	<0.5	<0.5	<0.5
		Toluene-2,4-diisocyanate, 80%	584-84-9	L					>480				>480		
									<0.1				<0.1		
220 Carboxylic Esters															
	221 Formates														
		Methyl formate	107-31-3	L											>480
															<0.1
	222 Aetates														
		n-Amyl acetate	628-63-7	L						>480		>480	>480	>480	
										0.07		<0.003	<0.1	<0.003	
		n-Butyl acetate	123-86-4	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Ethyl acetate	141-78-6	L	imm.	imm.	14	14	>480	>480	>480	>480	>480	>480	>480
					1.2	13	0.54	0.54	<0.1	<0.001	<0.1	<0.001	<0.1	<0.06	<0.1
		5-Norbornene-2-yl acetate	6143-29-9	L										>480	
														<0.0654	
		Vinyl acetate	108-05-4	L			82	82		>480	82	>480	>480	>480	>480
							1.45	1.45		<0.05	1.45	<0.01	<0.01	<0.01	<0.01
	223 Acrylates and Methacrylates														
		n-Butyl acrylate	141-32-2	L								51	>480	>480	51
												18.4	<0.1	<0.02	18.4
		Ethyl acrylate	140-88-5	L								14	>480	>480	14
												91	<0.1	<0.02	91
		Ethyl methacrylate	97-63-2	L									>240		
													<0.1		
		2-Hydroxyethylacrylate	818-61-1	L					>480						
									<0.1						
		Methyl acrylate	96-33-3	L						>480		>480	>480	>480	>480
										<0.02		<0.01	<0.1	<0.01	<0.01
		Methyl methacrylate	80-62-6	L			33	33		70	33	>480	>480	>480	>480
							18.1	18.1		1.55	18.1	<0.02	<0.02	<0.02	<0.02
	224 Aliphatic, Others														
		Dimethylmaleate	624-48-6	L			>480	>480			>480		>480		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
							<0.1	<0.1			<0.1		<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
	225 Lactones														
		Gamma-Butyrolactone	96-48-0	L							>480		>480		
											<0.1		<0.1		
	226 Benzoates and Phthalates														
		Di (2-ethylhexyl) phthalate	117-81-7	L						>480		>480	>480	>480	>480
										<0.1		<0.07	<0.07	<0.07	<0.07
		Methyl salicylate	119-36-8	L		imm.	>480	>480			>480		>480		
						0.5	<0.01	<0.01			<0.01		<0.01		
230 Non-Carboxylic Esters															
	233 Carbamates and Others														
		Methomyl, 29%	16752-77-5	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
240 Ethers															
	241 Aliphatic and Alicyclic														
		n-Butyl ether	142-96-1	L					>480	196	>480	>480	>480	>480	>480
									<0.1	0.2	<0.1	0.001	<0.1	0.001	<0.01
		Chloromethyl methyl ether	107-30-2	L						46	288	>480	>480	>480	>480
										0.7	0.67	0.03	<0.1	0.03	0.03
		Dichloroethyl ether	111-44-4	L						>480		>480	>480	>480	>480
										<0.02		<0.01	<0.01	<0.01	<0.01
		Dimethyl ether	115-10-6	G										>480	
														<0.07	
		Ethyl ether	60-29-7	L			imm.*	imm.*		>480	imm.*	>480	>480	>480	>480
							1.6	1.6		<0.01	1.6	<0.001	<0.001	<0.001	<0.01
		Methyl tert-butyl ether	1634-04-4	L			>480	>480	>480	>480	>480	>480	>480	>480	>480
							<0.1	<0.1	<0.1	<0.01	<0.1	<0.007	<0.007	<0.007	<0.007
		Tetrahydrofuran	109-99-9	L	imm.	imm.	imm.	imm.	>480	464	>480	>480	>480	>480	>480
					29	183	>50	>50	<0.1	0.12	<0.1	<0.001	<0.1	<0.04	<0.1
	245 Glycol Ethers														
		Butyl Cellosolve®	111-76-2	L			>480	>480			>480		>480		
							<0.003	<0.003			<0.003		<0.003		
		Ethyl Cellosolve®	110-80-5	L			>480	>480	306		>480	>480	>480	>480	>480
							<0.007	<0.007	0.29		<0.007	<0.008	<0.008	<0.008	<0.008
		Ethyl Cellosolve® acetate	111-15-9	L			39*	39*		>480	39*	>480	>480	>480	>480
							1.8	1.8		0.03	1.8	<0.002	<0.002	<0.002	<0.002
		Ethylene diglycol monoethyl ether	111-90-0	L			>480	>480			>480		>480		
							<0.07	<0.07			<0.07		<0.07		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Methyl Cellosolve®	109-86-4	L			89	89		>480	89	>480	>480	>480	>480
							5.77	5.77		0.002	5.77	<0.01	<0.01	<0.01	<0.01
		Methyl Cellosolve® acetate	110-49-6	L			260*	260*		>480	260*	>480	>480	>480	>480
							1.1	1.1		<0.05	1.1	<0.01	<0.01	<0.01	<0.01
	246 Vinylic														
		Ethyl vinyl ether	109-92-2	L									>180		
													<0.1		
260 Halogen Compounds															
	261 Aliphatic and Alicyclic														
		Bromochloromethane	74-97-5	L									>180		
													<0.1		
		Carbon tetrachloride	56-23-5	L						11		>480	>480	>480	>480
										0.57		<0.015	<0.1	<0.015	<0.015
		Chlordane	57-74-9	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Chlordane, 44%	57-74-9	L					>480						
									<0.1						
		Chloroacetophenone	532-27-4	L									>480		
													<0.1		
		2-Chloroethanol	107-07-3	L		imm.				>480		>480	>480	>480	>480
						3.1				<0.001		<0.008	<0.008	<0.008	<0.008
		Chloroform	67-66-3	L		imm.	imm.	imm.	imm.	imm.	>480	>480	>480	>480	>480
						350	201	201	24	10	<0.1	<0.004	<0.1	<0.004	<0.004
		Chloropicrin	76-06-2	L									>480		
													<0.1		
		1,2-Dibromo-3-Chloropropane	96-12-8	L					>480						
									<0.1						
		1,3-Dichloroacetone (40º C)	534-07-6	L						>480		>480	>480	>480	>480
										0.02		<0.1	<0.1	<0.1	<0.1
		1,2-Dichloroethane	107-06-2	L			imm.	imm.	>480	118	>480	>480	>480	>480	>480
							2	2	<0.1	7.2	<0.1	<0.002	<0.1	<0.002	<0.002
		Dichloroethyl ether	111-44-4	L						>480		>480	>480	>480	>480
										<0.02		<0.01	<0.01	<0.01	<0.01
		Dichloromethane	75-09-2	L	imm	imm.	imm.	imm.	imm.	imm.	114	432	>480	>480	>480
					>10	>50	>50	>50	>11.0	8	2.4	0.06	<0.1	<0.03	<0.1
		1,3-Dichloropropene	542-75-6	L			imm.	imm.	imm.	25	imm.		>480		
							127	127	103	1.6	127		<0.1		
		2,3-Dichloropropene	78-88-6	L						25		>480	>480	>480	>480
										2.4		<0.008	<0.008	<0.008	<0.008

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		1,1-Dichlorotetrafluoroethane	374-07-2	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		1,4-Diiodo-1,1,2,20tetrafluorobutane	755-95-3	L				180	180		180	>480	>480	>480	>480
								45	45		45	<0.26	<0.26	<0.26	<0.26
		Ethyl chloride	75-00-3	L										>480	
														<0.02	
		Ethylene dibromide	106-93-4	L						288		>480	>480	>480	>480
										0.52		<0.1	<0.1	<0.1	<0.1
		Ethylene oxide, 10% in HCFC 124	mixture	G										>480	
														<0.02	
		Ethyl vinyl ether	109-92-2	L									>180		
													<0.1		
		Hexafluoroethane	76-16-4	G								>480	>480	>480	>480
												<0.02	<0.02	<0.02	<0.02
		Hexafluoroisobutylene	382-10-5	G								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Lindane, sat. sol. in acetone	58-89-9	L								>480	>480	>480	>480
												<0.06	<0.06	<0.06	<0.06
		Lindane, sat. sol. in methanol	58-89-9	L										>480	
														<0.1	
		Methyl bromide	74-83-9	G			>480	>480			>480	>480	>480	>480	>480
							<0.1	<0.1			<0.1	<0.01	<0.1	<0.01	<0.01
		Methyl chloride	74-87-3	G		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
						0.23	<0.006	<0.006	<0.01	<0.004	<0.006	<0.001	<0.1	<0.02	<0.1
		Methyl chloride (-70º C)	74-87-3	L										>180	
														<0.05	
		Methyl fluoride	593-53-3	G								>480	>480	>480	>480
												<0.02	<0.1	<0.02	<0.02
		Methyl iodide	74-88-4	L			imm.	imm.			imm.	>480	>480	>480	>480
							342	342			342	<0.01	<0.1	<0.01	<0.01
		Methylene Bromide	74-95-3	L						imm.					
										11					
		Propylene dichloride	78-87-5	L			73	73			73	>480	>480	>480	>480
							3.2	3.2			3.2	<0.01	<0.01	<0.01	<0.01
		Tetrabromoethane	79-27-6	L									>480		
													<0.1		
		1,1,2,2-Tetrachloroethane	79-34-5	L			75*	75*			75*	>480	>480	>480	>480
							12	12			12	0.0005	0.0005	0.0005	0.0005
		1,1,1,2-Tetrafluoroethane	811-97-2	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Tetrafluoromethane	75-73-0	G								>480	>480	>480	>480
												<0.018	<0.018	<0.0177	<0.018
		1,1,3-Trichloroacetone	921-03-9	L						>480					
										<0.05					
		1,1,1-Trichloroethane	71-55-6	L					>480	232	>480	>480	>480	>480	>480
									<0.1	9.1	<0.1	<0.004	<0.1	<0.004	<0.004
		1,1,2-Trichloroethane	79-00-5	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	G					>480			>480	>480	>480	>480
									<0.1			<0.01	<0.1	<0.01	<0.01
		Trichloronitromethane	76-06-2	L						>480					
										<0.1					
		Trifluoroacetic acid	76-05-1	L			>480	>480		>480	>480		>480		
							<0.1	<0.1		<0.01	<0.1		<0.1		
		Trifluoromethane	75-46-7	G								>480	>480	>480	>480
												<0.014	<0.014	<0.014	<0.014
	263 Aromatic														
		Benzotrichloride	98-07-7	L					>480						
									<.002						
		4-Bromofluorobenzene	460-00-4	L						>480		>480	>480	>480	>480
										<0.02		<0.001	<0.001	<0.001	<0.001
		Chlorobenzene	108-90-7	L			imm.	imm.	63	>480	>480	>480	>480	>480	>480
							5.4	5.4	0.7	<0.1	<0.1	<0.001	<0.1	<0.001	<0.001
		4-Chlorobenzotrichloride	5216-25-1	L					>480						
									0.034						
		4-Chlorobenzotrifluoride	98-56-6	L					460						
									0.1						
		4-Chlorophenol, sat. sol. in methanol	106-48-9	L								>480	>480	>480	>480
												<0.013	<0.013	<0.013	<0.013
		o-Chlorotoluene	95-49-8	L			26*	26*		>480	26*	>480	>480	>480	>480
							26	26		0.02	26	<0.001	<0.001	<0.001	<0.001
		Cyanuric chloride 20%, Toluene 80%	Mixture	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		3,4-Dichloroaniline	95-76-1	S								>480	>480	>480	>480
												<0.001	<0.001	<0.001	<0.001
		3,4-Dichloroaniline (70°C)	95-76-1	L			imm.	imm.			imm.	284	284	284	284
							17	17			17	2.4	2.4	2.4	2.4
		Fluorobenzene	462-06-6	L			imm.	imm.		>480	imm.	>480	>480	>480	>480
							>500	>500		<0.1	>500	<0.1	<0.1	<0.1	<0.1
		o-Nitrochlorobenzene	88-73-3	S		15	237	237			237		237		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
						4.1	0.61	0.61			0.61		0.61		
		o-Nitrochlorobenzene (35º C)	88-73-3	L			80	80			80		80		
							2.4	2.4			2.4		2.4		
		p-Nitrochlorobenzene	100-00-5	S		imm.	476	476			476		476		
						2.3	0.11	0.11			0.11		0.11		
		p-Nitrochlorobenzene (85º C)	100-00-5	L			321	321			321		321		
							1.5	1.5			1.5		1.5		
		PCB 1254	11097-69-1	L		55	>480*	>480*			>480*		>480*		
						>3.6	<0.2	<0.2			<0.2		<0.2		
		PCB gas condensate	mixture	L			401	401		>480	401		401		
							0.36	0.36		<0.001	0.36		0.36		
		PCB in transformer oil	mixture	L						>480			>240		
										<0.001			<0.1		
		PCB 50%, Mineral oil 50%	mixture	L			>480*	>480*			>480*		>480*		
							nd	nd			nd		nd		
		PCB 1%, Mineral spirits 99%	mixture	L			>480*	>480*			>480*		>480*		
							nd	nd			nd		nd		
		PCB 4%, TCB 6%, Mineral spirits 90%	mixture	L			60*	60*			60*		60*		
							0.04	0.04			0.04		0.04		
		Toluene 80%, Dichlorotriazine 20%	mixture	L					>480						
									<0.1						
		2,2',6,6' Tetrachlorobisphenol A	79-95-8	S						>480					
										<0.1					
		PCB 50%, Trichlorobenzene 50%	mixture	L			>480	>480	>480		>480	>480	>480	>480	>480
							<0.1	<0.1	<0.1		<0.1	<0.001	<0.001	<0.001	<0.001
		1,2,4-Trichlorobenzene	120-82-1	L		imm.	113	113		>480	113	>480	>480	>480	>480
						8.4	1.2	1.2		<0.001	1.2	<0.01	<0.01	<0.01	<0.01
	264 Vinylic														
		2-Chloroacrylonitrile	920-37-6	L									>480		
													<0.1		
		2-Chloro-1,3- Butadiene	126-99-8	L									>480		
													<0.1		
		trans-1,4-Dichloro-2-butene	110-57-6	L		75*									
						246									
		1,4- Dichloro-2-butene, 85%	764-41-0	L									>480		
													<0.1		
		trans-1,2-Dichloroethylene	156-60-5	L			imm.	imm.			imm.		>180		
							306	306			306		<0.1		
		1,3- Hexachlorobutadiene	87-68-3	L								>480	>480	>480	>480
												<0.01	<0.1	<0.01	<0.01

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		Hexachlorocyclopentadiene	77-47-4	L									>480		
													<0.1		

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Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		1,1,1-3,3,3-Hexachloropropane	3607-78-1	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		1,1,2,2-Tetrachloroethylene	127-18-4	L	imm.	imm.	imm.	imm.	>480	>480	>480	>480	>480	>480	>480
					>10	high	5.7	5.7	<0.1	<0.022	<0.1	<0.001	<0.1	<0.01	<0.1
		Trichloroethylene	79-01-6	L			imm.	imm.		>480	imm.	>480	>480	>480	>480
							>35	>35		<0.01	>35	<0.1	<0.1	<0.1	<0.1
		Vinyl bromide	593-60-2	L									>480		
													<0.1		
		Vinyl chloride	75-01-4	G			>480	>480	>480	>480	>480	>480	>480	>480	>480
							<0.1	<0.1	<0.1	<0.02	<0.1	<0.001	<0.1	<0.001	<0.1
		Vinylidene chloride	75-35-4	L						>480		>480	>480	>480	>480
										<0.02		<0.01	<0.01	<0.01	<0.01
	265 Alylic														
		Allyl chloride	107-05-1	L			imm.	imm.	12	>480	>480	>480	>480	>480	>480
							18.5	18.5	1.2	<0.1	<0.1	<0.06	<0.06	<0.06	<0.06
	266 Benzylic														
		Benzyl chloride	100-44-7	L					>480	>480		>480	>480	>480	>480
									<0.08	<0.05		<0.01	<0.1	<0.01	<0.01
270 Heterocyclic Compounds															
	271 Nitrogen, Pyridines														
		2-Aminopyridine	504-29-0	L			321	321			321		321		
							112	112			112		112		
		Nicotine	54-11-5	L			>480	>480	>480	>480	>480	>480	>480	>480	>480
							<0.035	<0.035	<0.1	<0.1	<0.035	<0.1	<0.1	<0.1	<0.1
		2-Picoline	109-06-8	L						>480		46	46	>480	46
										<0.05		48	48	<0.02	48
		3-Picoline	108-99-6	L								11	11	>480	11
												22	22	<0.01	22
		Pyridine	110-86-1	L			17	17		>480	17	>480	>480	>480	>480
							34	34		<0.05	34	<0.01	<0.1	<0.01	<0.01
		4-Vinylpyridine	100-43-6	L			64	64			64		64		
							7.3	7.3			7.3		7.3		
	274 Nitrogen, Others														
		2,4-Dichloro-6-isopropyl-S-triazine 22%,Toluene 78%	mixture	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Ethyleneimine	151-56-4	L								59	357	>480	59
												0.56	0.032	<0.01	0.56
		Pyrrolidine	123-75-1	L						100		413	413	413	413
										4.7		9.2	9.2	9.2	9.2

Data Table for Tychem® Limited-Use Fabrics

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	275 Oxygen, Epoxides														
		Bisphenol-A diglycidyl ether	1675-54-3	L			>480	>480		>480	>480	>480	>480	>480	>480
							<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1,2-Butylene oxide	106-88-7	L									>240		
													<0.1		
		Epichlorohydrin	106-89-8	L			57*	57*	67	372	>480	>480	>480	>480	>480
							>50	>50	2.1	0.51	<0.1	<0.014	<0.014	<0.014	<0.014
		Ethylene oxide, 10% in HCFC 124	mixture	G										>480	
														<0.02	
		Ethylene oxide gas	75-21-8	G		imm.	imm.	imm.	>480	65	305	>480	>480	>480	>480
						167	8.4	8.4	<0.01	1.4	1.08	<0.01	<0.1	<0.1	<0.1
		Ethylene oxide liquid (0º C)	75-21-8	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Ethylene oxide liquid (11º C)	75-21-8	L					18		>480		>180		
									0.22		<0.1		<0.1		
		Ethylene oxide liquid (-70º C)	75-21-8	L										>180	
														<0.02	
		Phenyl glicydyl ether	122-60-1	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		1,2-Propylene oxide	75-56-9	L					30	14	>480	>480	>480	>480	>480
									1.37	1.02	<0.1	<0.002	<0.1	<0.002	<0.002
		Tetramethylethylene Oxide	5076-20-0	L										>480	
														<0.047	
	277 Oxygen, Furans														
		2-Furaldehyde	98-01-1	L			245*	245*	>480	>480	245*	>480	>480	>480	>480
							0.2	0.2	<0.1	0.01	0.2	<0.01	<0.01	<0.01	<0.01
	278 Oxygen, Others														
		1,4-Dioxane	123-91-1	L						>480		>480	>480	>480	>480
										0.001		<0.05	<0.05	<0.05	<0.05
280 Hydrazines															
		1,1-Dimethylhydrazine	57-14-7	L			12*	12*			12*	>480*	>480	>480*	>480*
							6	6			6	<5.0	<0.1	<5.0	<5.0
		Hydrazine	302-01-2	L			437	437		283	>480	>480	>480	>480	>480
							0.2	0.2		1.6	<0.1	<0.05	<0.1	<0.05	<0.05
		Hydrazine hydrate	10217-52-4	L									>480		>480
													<0.1		<0.01
		Hydrazine hydrate, 50%	10217-52-4	L										>480	
														<0.06	
		Hydrazine hydrate, 85%	10217-52-4	L								440	440	440	440
												0.06	0.06	0.06	0.06

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Methylhydrazine	60-34-4	L						283		>480	>480	>480	>480
										0.98		<0.01	<0.1	<0.01	<0.01
290 Hydrocarbons															
	291 Aliphatic and Alicyclic, Saturated														
		Cyclohexane	110-82-7	L						>480		>480	>480	>480	>480
										0.04		<0.003	<0.1	<0.003	<0.003
		Diesel fuel	68334-30-5	L			48	48		>480	48	>480	>480	>480	>480
							0.5	0.5		<0.001	0.5	<0.03	<0.1	<0.03	<0.03
		Diesel automotive test fuel	mixture	L		imm.	>480	>480			>480		>480		
						1.8	<0.01	<0.01			<0.01		<0.01		
		Fuel oil	mixture	L		imm.	>480	>480			>480		>480		
						1.8	<0.01	<0.01			<0.01		<0.01		
		Gasoline (mixture)	86290-81-5	L					>480						
									<0.1						
		Gasoline, leaded	86290-81-5	L						30		>480*	>480*	>480*	>480*
										0.32		nd	nd	nd	nd
		Gasoline, Unleaded	86290-81-5	L			imm.	imm.		>480	imm.	>480	>480	>480	>480
							4.8	4.8		<0.001	4.8	<0.001	<0.001	<0.001	<0.001
		Heptane	142-82-5	L					>480						
									<0.1						
		n-Hexane	110-54-3	L	imm.	imm.	10	10	>480	>480	>480	>480	>480	>480	>480
					17	high	0.28	0.28	<0.1	<0.001	<0.1	<0.001	<0.1	<0.01	<0.1
		Isobutane	75-28-5	L									>480		
													<0.1		
		JP-4 jet fuel	Mixture	L			18	18			18	>480	>480	>480	>480
							24	24			24	<0.002	<0.002	<0.002	<0.002
		Jet A fuel	8008-20-6	L			58	58			58	>480	>480	>480	>480
							0.59	0.59			0.59	<0.1	<0.1	<0.1	<0.1
		JP-8 jet fuel	8008-20-6	L			58	58			58	>480	>480	>480	>480
							0.59	0.59			0.59	<0.1	<0.1	<0.1	<0.1
		Kerosene	8008-20-6	L			58	58		>480	58	>480	>480	>480	>480
							0.59	0.59		<0.1	0.59	<0.1	<0.1	<0.1	<0.1
		Methane	74-82-8	G									>480		
													<0.1		
		Mineral oil	8012-95-1	L			>480	>480			>480		>480		
							<0.08	<0.08			<0.08		<0.1		
		Mineral spirits	64475-85-0	L		imm.	>480*	>480*			>480*	>480	>480	>480	>480
						nm	nd	nd			nd	<0.01	<0.01	<0.01	<0.01

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		n-Octane	111-65-9	L								>480	>480	>480	>480
												<0.01	<0.1	<0.01	<0.01
		Propane	74-98-6	G									>480		>480
													<0.1		<0.01
		Stoddard solvent	8052-41-3	L							>480	>480	>480	>480	>480
											<0.1	<0.001	<0.001	<0.001	<0.001
		VM&P Naphtha	8032-32-4	L			18	18			18	>480	>480	>480	>480
							1.3	1.3			1.3	<0.006	<0.006	<0.006	<0.006
	292 Aromatic														
		Benzene	71-43-2	L			36	36	>480	>480	>480	>480	>480	>480	>480
							11.3	11.3	<0.1	<0.05	<0.1	<0.001	<0.1	<0.001	<0.001
		Benzo[a]pyrene	50-32-8	S			>480*	>480*			>480*		>480*		
							<0.8	<0.8			<0.8		<0.8		
		Cumene	98-82-8	L						>480	>480	>480	>480	>480	>480
										0.05	<0.1	<0.01	<0.01	<0.01	<0.01
		Ethyl benzene	100-41-4	L							>480	>480	>480	>480	>480
											<0.1	<0.001	<0.1	<0.001	<0.001
		Isobutylbenzene	538-93-2	L									>480		
													<0.1		
		1,2,3-Trimethylbenzene, 90%	526-73-8	L									>480		
													<0.1		
		Styrene	100-42-5	L			12	12	>480	>480	>480	>480	>480	>480	>480
							75	75	<0.1	<0.04	<0.1	<0.001	<0.001	<0.001	<0.001
		Tetralone	529-34-0	L									>480		
													<0.1		
		Toluene	108-88-3	L	imm.	imm.	imm.	imm.	>480	>480	>480	>480	>480	>480	>480
					64	503	39	39	<0.1	0.003	<0.1	<0.001	<0.1	<0.02	<0.1
		Xylene, mixed isomers	1330-20-7	L						291	>480	>480	>480	>480	>480
										0.12	<0.1	<0.004	<0.004	<0.004	<0.004
		o-Xylene	95-47-6	L					>480						
									<0.1						
	293 Aromatic Polynuclear														
		Anthracene, sat. sol. in toluene	120-12-7	L						>480					
										<0.01					
		Benzo[a]pyrene	50-32-8	S			>480*	>480*			>480*		>480*		
							<0.8	<0.8			<0.8		<0.8		
		Naphthalene	91-20-3	L					>480						
									<0.1						

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Naphthalene	91-20-3	S						>480					
										<0.001					
		Naphthalene, sat. sol. in toluene	91-20-3	L											
	294 Aliphatic and Alicyclic, Unsaturated														
		Crude oil	8002-05-9	L		imm.	>480	>480			>480	>480	>480	>480	>480
						3.3	<0.01	<0.01			<0.01	<0.04	<0.04	<0.04	<0.04
		Ethylene	74-85-1	G									>480		
													<0.1		
		1-Hexene	592-41-6	L									>480		
													<0.1		
		Turpentine	8006-64-2	L									>480		
													<0.1		
	296 Polyenes														
		1,3-Butadiene	106-99-0	G		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
						12	<0.02	<0.02	<0.1	0.07	<0.02	<0.001	<0.1	<0.07	<0.1
		1,3-Butadiene (0° C)	106-99-0	L										>180	
														<0.01	
		Cyclooctadiene	1552-12-1	L					>480						
									<0.01						
		Isoprene	78-79-5	L									>180		
													<0.1		
		d-Limonene	5989-27-5	L						>480		>480	>480	>480	>480
										<0.02		<0.001	<0.001	<0.001	<0.001
300 Peroxides															
		Ethyl benzene hydroperoxide	3071-32-7	L							>480				
											<0.1				
		Hydrogen peroxide, 30%	7722-84-1	L		>480	>480	>480			>480		>480	>480	
						<0.1	<0.1	<0.1			<0.1		<0.1	<0.04	
		Hydrogen peroxide, 50%	7722-84-1	L					>480						
									<.002						
		Hydrogen peroxide, 70%	7722-84-1	L		>480						>480	>480	>480	>480
						<0.01						<0.01	<0.1	<0.01	<0.01
310 Hydroxylic Compounds															
	311 Aliphatic and Alicyclic, Primary														
		Allyl alcohol	107-18-6	L						>480	>480	>480	>480	>480	>480
										0.04	<0.1	<0.1	<0.1	<0.1	<0.1
		n-Butanol	71-36-3	L		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
						1.6	<0.001	<0.001	<0.1	<0.05	<0.001	<0.002	<0.1	<0.002	<0.002

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Ethanol	64-17-5	L					>480		>480				
									<0.01		<0.1				
		Ethanolamine	141-43-5	L					>480	>480		>480	>480	>480	>480
									<0.1	<0.001		<0.1	<0.1	<0.1	<0.1
		Isobutanol	78-83-1	L									>480		
													<0.1		
		Methanol	67-56-1	L	imm.	imm.	>480	>480	imm.	77	>480	157	>480	>480	>480
					0.59	2.2	<0.1	<0.1	0.98	0.26	<0.1	0.81	<0.1	<0.1	<0.1
		Methyl Cellosolve®	109-86-4	L			89	89		>480	89	>480	>480	>480	>480
							5.77	5.77		0.002	5.77	<0.01	<0.01	<0.01	<0.01
		n-Propanol	71-23-8	L							>480				
											<0.1				
	312 Aliphatic and Alicyclic,Secondary														
		Benzyl alcohol	100-51-6	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Isoamyl alcohol	123-51-3	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Isopropanol	67-63-0	L					>480	>480	>480		>480		
									<0.1	<0.001	<0.1		<0.1		
	313 Aliphatic and Alicyclic, Tertiary														
		Acetone cyanohydrin	75-86-5	L						>480		>480	>480	>480	>480
										0.05		<0.01	<0.01	<0.01	<0.01
		tert-Butyl alcohol	75-65-0	L							>480		>480		
											<0.1		<0.1		
	314 Aliphatic and Alicyclic, Polyols														
		1,4-Butanediol	110-63-4	L							>480				
											<0.1				
		Ethylene glycol	107-21-1	L	>480	>480	>480*	>480*		>480	>480*	>480	>480	>480	>480
					<0.1	<0.1	<0.33	<0.33		<0.001	<0.33	<0.02	<0.02	<0.02	<0.02
		Glycerine	56-81-5	L							>480				
											<0.1				
		2-Methyl-1,3-propanediol	2163-42-0	L							>480				
											<0.1				
		Propylene glycol	57-55-6	L							>480				
											<0.1				
	315 Aliphatic and Alicyclic, Substituted														
		2-Chloroethanol	107-07-3	L		imm.				>480		>480	>480	>480	>480
						3.1				<0.001		<0.008	<0.008	<0.008	<0.008

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		2,2,2-Trichloroethanol	115-20-8	L			19*	19*		>480	19*	>480	>480	>480	>480
							13.2	13.2		<0.02	13.2	<0.01	<0.01	<0.01	<0.01
		2,2,2-Trifluoroethanol	75-89-8	L		imm.						>480	>480	>480	>480
						high						<0.001	<0.001	<0.001	<0.001
	316 Aromatic, Phenols														
		4-tert-Butyl catechol	98-29-3	L							>480				
											<0.1				
		4-Chlorophenol, sat. sol. in methanol	106-48-9	L								>480	>480	>480	>480
												<0.013	<0.013	<0.013	<0.013
		Creosote	8001-58-9	L						>480					
										<0.001					
		m-Cresol 55%, p-Cresol 30%, Phenol 15%	mixture	L								>480	>480	>480	>480
												<0.09	<0.09	<0.09	<0.09
		Cresol, mixed isomers	1319-77-3	L		40*	69	69			69	>480	>480	>480	>480
						0.4	8	8			8	<0.01	<0.1	<0.01	<0.01
		o-Cresol	95-48-7	L		37	>480	>480	330	180	>480		>480		
						0.43	0.17	0.17	1.35	2.7	0.17		0.17		
		4,6-Dinitro-o-cresol , 90+%	534-52-1	L							>480				
											<0.1				
		4,6-Dinitro-o-cresol, sat. sol. in methanol	534-52-1	L								>480	>480	>480	>480
												<0.013	<0.013	<0.013	<0.013
		2-Nitrophenol (70º C)	88-75-5	L			imm.	imm.			imm.	208	208	208	208
							4.53	4.53			4.53	0.17	0.17	0.17	0.17
		Pentachlorophenol, sat. sol. in methanol	87-86-5	L								>480	>480	>480	>480
												<0.013	<0.013	<0.013	<0.013
		Phenol	108-95-2	L								>480	>480	>480	>480
												<0.03	<0.03	<0.07	<0.03
		Phenol, 85%-90%	108-95-2	L		imm.	>480	>480	85	238	>480		>480	>480	>480
						0.4	<0.1	<0.1	1.5	4	<0.1		<0.1	<0.07	<0.01
		Phenol, 88% (45º C)	108-95-2	L			303	303			303	135	303	150	135
							0.91	0.91			0.91	2.26	0.91	2.8	2.26
		2,2',6,6' Tetrachlorobisphenol A	79-95-8	S						>480					
										<0.1					
		2,4,6-Tribromophenol	118-79-6	L									15		
													4.93		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
	318 Aromatic, Others														
		1-Phenylethanol	98-85-1	L			>480	>480	>480				>480		
							<0.1	<0.1	<0.01				<0.1		
		2-Phenylethanol	60-12-8	L					>480		>480		>480		
									<0.01		<0.1		<0.1		
330 Elements															
		Bromine	7726-95-6	L		imm.				imm.		imm.	18	15	imm.
						high				105		>50	533	25	30
		Bromine, 10 gm/m^2 exposure	7726-95-6	L										>480	
														<0.1	
		Bromine, sat. vapor	7726-95-6	G										40	
														>0.6	
		Chlorine, 20 ppm	7782-50-5	G		>480*	>480*	>480*			>480*		>480*		
						nd	nd	nd			nd		nd		
		Chlorine gas	7782-50-5	G		imm.	>480	>480	>480	>480*	>480	>480	>480	>480	>480
						>50	<0.1	<0.1	<0.1	0.2	<0.1	<0.01	<0.1	<0.02	<0.1
		Chlorine liquid (-70º C)	7782-50-5	L					>480		>480		>480	>480	>480
									<0.01		<0.01		<0.1	<0.01	<0.01
		Iodine	7553-56-2	S		440*	>480*	>480*			>480*		>480*		
						30	<70	<70			<70		<70		
		Mercury	7439-97-6	L			>480	>480	>480	>480	>480	>480	>480	>480	>480
							<0.1	<0.1	<0.0009	<0.04	<0.1	<0.001	<0.1	<0.001	<0.001
340 Inorganic Salts (Solutions)															
		Aluminum sulfate hydrate, 27% sol.	17927-65-0	L									>480		
													<0.1		
		Ammonium chloride, sat.	12125-02-9	L					>480						
									<0.1						
		Ammonium fluoride, 40%	12125-01-8	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Arsenic Trichloride	7784-42-1	L						38					
										334.1					
		Calcium chloride, 42%	10043-52-4	L									>240		
													<0.1		
		Ferric chloride, sat.	7705-08-0	L									>480		
													<0.1		
		Ferrous chloride, sat.	7758-94-3	L									>480		
													<0.1		
		Lithium chloride, 20%	7447-41-8	L		>480									
						<0.1									
		Mercuric chloride, sat. sol. in	7487-94-7	L			>480*	>480*		>480	>480*	>480*	>480*	>480*	>480*

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		water					<0.28	<0.28		<0.1	<0.28	<0.28	<0.28	<0.28	<0.28

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Potassium acetate, sat. sol. in water	127-08-2	L			>480*	>480*			>480*	>480*	>480*	>480*	>480*
							<0.51	<0.51			<0.51	<0.49	<0.49	<0.49	<0.49
		Potassium carbonate	584-08-7	L					>480						
									<0.1						
		Potassium chromate, sat. sol.in water	7789-00-6	L			>480*	>480*		>480	>480*	>480*	>480*	>480*	>480*
							<0.51	<0.51		<0.1	<0.51	<0.51	<0.51	<0.51	<0.51
		Potassium permanganate	7722-64-7	L		>480							>480		
						<0.1							<0.1		
		Sodium dichromate, 0.5%	10588-01-9	L									>480		
													<0.1		
		Sodium fluoride, sat. sol.in water	7681-49-4	L			>480*	>480*			>480*				
							<0.28	<0.28			<0.28				
		Sodium hydrosulfide, sat.	16721-80-5	L									>480		
													<0.1		
		Sodium hypochlorite, 13%	7681-52-9	L			>480	>480	>480		>480				
							<0.1	<0.1	<0.1		<0.1				
		Sodium hypochlorite, 17%	7681-52-9	L		>480	>480	>480			>480				
						<0.1	<0.1	<0.1			<0.1				
		Sodium hypochlorite, 30% chlorine	7681-52-9	L						>480					
										<0.1					
		Sodium hypochlorite, 5.25%	7681-52-9	L		>480	>480	>480			>480		>480		
						<0.1	<0.1	<0.1			<0.1		<0.1		
345 Inorganic Cyano Compounds															
		Hydrogen cyanide gas	74-90-8	G					30		>480	>480	>480	>480	>480
									1.06		<0.1	<0.02	<0.1	<0.01	<0.05
		Hydrogen cyanide liquid	74-90-8	L		60*						105	105	>480	105
						0.11						1.7	1.7	<0.01	1.7
		Potassium cyanide	151-50-8	L											
		Potassium cyanide, 10%	151-50-8	L		>480									
						<0.1									
		Sodium cyanide	143-33-9	L					15			>480*	>480*	>480*	>480*
									2.2			<0.33	<0.33	<0.33	<0.33
		Sodium cyanide, 45%	143-33-9	L						>480			>480		
										<0.1			<0.1		
		Sodium cyanide, sat. sol. in water	143-33-9	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
350 Inorganic Gases and Vapors															
		Ammonia gas	7664-41-7	G		imm.	32	32	12	79	>480	46	>480	>480	>480
						3.1	0.15	0.15	1.4	0.76	<0.1	0.62	<0.1	<0.1	<0.1
		Ammonia liquid	7664-41-7	L			>480	>480	>480		>480		>480	>480	>480
							<0.1	<0.1	<0.1		<0.01		<0.1	<0.1	<0.07
		Arsine	7784-42-1	G								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Boron trichloride	10294-34-5	G								>480	>480	>480	>480
												<0.02	<0.1	<0.02	<0.02
		Boron trifluoride	7637-07-2	G								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Carbon monoxide	630-08-0	G								330	330	330	330
												0.1	0.1	0.1	0.1
		Chlorine, 20 ppm	7782-50-5	G		>480*	>480*	>480*			>480*		>480*		
						nd	nd	nd			nd		nd		
		Chlorine dioxide, 5%	10049-04-4	G									>480		
													<0.1		
		Chlorine dioxide, 150 ppm	10049-04-4	G								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Chlorine dioxide, 1000 ppm	10049-04-4	G								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Chlorine gas	7782-50-5	G		imm.	>480	>480	>480	>480*	>480	>480	>480	>480	>480
						>50	<0.1	<0.1	<0.1	0.2	<0.1	<0.01	<0.1	<0.02	<0.1
		Chlorine liquid (-70° C)	7782-50-5	L					>480		>480		>480	>480	>480
									<0.01		<0.01		<0.1	<0.01	<0.01
		Chlorine trifluoride	7790-91-2	G								45	160	45	45
												96	>53	96	96
		Diborane, 10%	19287-45-7	G								>480	>480	>480	>480
												<0.005	<0.1	<0.005	<0.005
		Fluorine	7782-41-4	G									>480	>480	
													<0.1	<0.002	
		Hydrogen bromide	10035-10-6	G						>480		>480	>480	>480	>480
										<0.0001		<0.1	<0.1	<0.1	<0.1
		Hydrogen chloride gas	7647-01-0	G		imm.	>480	>480	>480	>480	>480	>480	>480	>480	>480
						9.3	<0.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Hydrogen chloride liquid (-90° C)	7647-01-0	L										>180	
														<0.1	
		Hydrogen cyanide gas	74-90-8	G					30		>480	>480	>480	>480	>480
									1.06		<0.1	<.022	<0.1	<0.01	<0.05

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Hydrogen fluoride gas	7664-39-3	G		imm.	35	35	170	imm.	20*	135	>480	>480	>480
						6	3	3	6.7	high	3	6.7	<0.1	<0.1	<0.0174
		Hydrogen fluoride liquid (0°C)	7664-39-3	L					50					290	
									5.73					1.3	
		Hydrogen fluoride liquid (4°C)	7664-39-3	L							300			290	
											1.3			1.3	
		Hydrogen fluoride liquid (15°C)	7664-39-3	L									>480		>480
													<0.1		<0.1
		Hydrogen fluoride liquid (18°C)	7664-39-3	L						43					
										2.2					
		Hydrogen selenide	7783-07-5	G								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Hydrogen sulfide	7783-06-4	G					imm.			>480	>480	>480	>480
									1.8			<0.01	<0.1	<0.01	<0.01
		Nitric oxide	10102-43-9	G										>480	
														<0.04	
		Nitrogen dioxide	10102-44-0	G			>480	>480		14	>480		>480		
							<0.001	<0.001		>0.2	<0.001		<0.001		
		Nitrogen tetroxide	10544-72-6	G								90	220	90	420
												>1.1	7	>1.1	10
		Nitrogen tetroxide (0° C)	10544-72-6	L								>480	>480	>480	>480
												0.001	0.001	0.001	0.001
		Nitrogen tetroxide (21° C)	10544-72-6	L										450	
														0.2	
		Nitrogen trifluoride	7783-54-2	G								>480	>480	>480	>480
												<0.014	<0.1	<0.014	<0.014
		Nitrous oxide	10024-97-2	G								>480	>480	>480	>480
												<0.018	<0.1	<0.018	<0.018
		Phosgene	75-44-5	G					>480	>480		>480	>480	>480	>480
									<0.1	<0.02		<0.1	<0.1	<0.1	<0.1
		Phosphine	7803-51-2	G						imm.		>480	>480	>480	>480
										>0.11		<0.01	<0.1	<0.01	<0.01
		Sulfur dioxide	7446-09-5	G		imm.	>480	>480		38*	>480	>480	>480	>480	>480
						>29	<0.1	<0.1		2	<0.1	<0.01	<0.1	<0.01	<0.01
		Sulfur hexafluoride	2551-62-4	G								>480	>480	>480	>480
												<0.015	<0.1	<0.015	<0.015
		Sulfuryl chloride	7791-25-5	L						>480		>480	>480	>480	>480
										<0.01		<0.1	<0.1	<0.1	<0.1
		Tungsten hexafluoride	7783-82-6	G								>480	>480	>480	>480
												<0.026	<0.1	<0.026	<0.026

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
360 Inorganic Acid Halides															
		Aluminum chloride	7446-70-0	L							>480				
											<0.1				
		Antimony pentachloride	7647-18-9	L			>480	>480		15	>480		>480		
							<0.1	<0.1		10	<0.1		<0.1		
		Boron trichloride	10294-34-5	G								>480	>480	>480	>480
												<0.02	<0.1	<0.02	<0.02
		Boron trifluoride	7637-07-2	G								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Phosphorus oxychloride	10025-87-3	L						>480		>480	>480	>480	>480
										<0.01		<0.1	<0.1	<0.1	<0.1
		Phosphorus trichloride	7719-12-2	L			20	20	>480	>480	20	>480	>480	>480	>480
							28	28	<0.1	0.003	28	<0.1	<0.1	<0.1	<0.1
		Silicon tetrachloride	10026-04-7	L			80	80		>480	80	>480	>480	>480	>480
							7.8	7.8		0.0001	7.8	<0.1	<0.1	<0.1	<0.1
		Sulfuryl chloride	7791-25-5	L						>480		>480	>480	>480	>480
										0.01		<0.1	<0.1	<0.1	<0.1
		Thionyl chloride	7719-09-7	L					15	imm.		35	45	90	35
									1260	101		2500	243	63.6	2500
		Titanium tetrachloride	7550-45-0	L			15	15	120	>480	15	>480	>480	>480	>480
							73	73	11.6	0.0001	73	<0.1	<0.1	<0.1	<0.1
365 Inorganic Acid Oxides															
		Sulfur dioxide	7446-09-5	G		imm.	>480	>480		38*	>480	>480	>480	>480	>480
						>29	<0.1	<0.1		2	<0.1	<0.01	<0.1	<0.01	<0.01
		Sulfur trioxide	7446-11-9	L								90	90	90	90
												696	696	696	696
		Sulfur trioxide (60° C)	7446-11-9	L									90		
													>100		
370 Inorganic Acids															
		Chlorosulfonic acid	7790-94-5	L			>480	>480	330	>480	>480	180	>480	>480	180
							<0.1	<0.1	0.97	0.0003	<0.1	98	<0.1	<0.1	98
		Chromic acid, 60-62%	1333-82-0	L		>480	>480	>480			>480		>480		
						<0.1	<0.1	<0.1			<0.1		<0.1		
		Fluoroboric acid, 48-50%	16872-11-0	L			>480	>480	>480		>480				
							<0.1	<0.1	<0.1		<0.1				
		Fluorosilicic acid	16961-83-4	L						>480		>480	>480	>480	>480
										0.0001		<0.1	<0.1	<0.1	<0.1
		Fluorosilicic acid, 30%	16961-83-4	L									>480		
													<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Fluorosulfonic acid	7789-21-1	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Hydriodic acid,47%	10034-85-2	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Hydriodic acid, 57%	10034-85-2	L					>480	>480		>480	>480	>480	>480
									<0.01	<0.01		<0.1	<0.1	<0.1	<0.1
		Hydrobromic acid, 48%	10035-10-6	L									>480		
													<0.1		
		Hydrochloric acid, 37%	7647-01-0	L	90	86	>480	>480	>480	>480	>480	>480	>480	>480	>480
					1.4	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.1
		Hydrofluoric acid, 48%-51%	7664-39-3	L	>480	>480	>480	>480	180	>480	>480	>480	>480	>480	>480
					<0.1	0.08	<0.1	<0.1	0.86	<0.1	<0.1	<0.02	<0.02	<0.02	<0.1
		Hydrofluoric acid, 70%	7664-39-3	L			imm.	imm.		39	imm.			>480	
							0.6	0.6		1.2	0.6			<0.1	
		Hydrofluoric acid, 92% (90°C)	7664-39-3	L								67*	67*	67*	67*
												2.8	2.8	2.8	2.8
		Hydrogen bromide	10035-10-6	G						>480		>480	>480	>480	>480
										0.0001		<0.1	<0.1	<0.1	<0.1
		Hydrogen cyanide liquid	74-90-8	L		60*						105	105	>480	105
						0.11						1.7	1.7	<0.01	1.7
		Hydrogen fluoride liquid (0°C)	7664-39-3	L					50					290	
									5.73					1.3	
		Hydrogen fluoride liquid (4°C)	7664-39-3	L							300			290	
											1.3			1.3	
		Hydrogen fluoride liquid (15°C)	7664-39-3	L									>480		>480
													<0.1		<0.1
		Hypophosphorus acid, 50%	6303-21-5	L					>480	>480					
									<0.01	<0.01					
		Nitric acid, 70%	7697-37-2	L	>480	410*	>480	>480		>480	>480	>480	>480	>480	>480
					<0.1	0.7	<0.1	<0.1		<0.001	<0.1	<0.1	<0.1	<0.1	<0.1
		Nitric acid, 90%	7697-37-2	L					>480			>480	>480	>480	>480
									<0.1			<0.033	<0.033	<0.033	<0.033
		Nitric acid, red fuming	52583-42-3	L						14		>480	>480	>480	>480
										>50		<0.033	<0.033	<0.033	<0.033
		Oleum, 103%	8014-95-7	L										>480	
														<0.1	
		Oleum, 27-33% free SO_3	8014-95-7	L			450	450			450		450		
							0.005	0.005			0.005		0.005		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Oleum, 40% free SO_3	8014-95-7	L		398	>480	>480		>480	>480	>480	>480	>480	>480
						0.2	<0.04	<0.04		<0.32	<0.04	<0.04	<0.1	<0.04	<0.04
		Oleum, 65% free SO_3	8014-95-7	L					15		>480			>480	
									>50		<0.1			<0.1	
		Perchloric acid, 70%	7601-90-3	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Phosphoric acid, 75%	7664-38-2	L					15						
									60						
		Phosphoric acid, 85%	7664-38-2	L	>480		>480	>480		>480	>480	>480	>480	>480	>480
					<0.1		<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Sulfuric acid 50%	7664-93-9	L											
		Sulfuric acid 95-98%	7664-93-9	L	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
380 Inorganic Bases															
		Ammonia liquid	7664-41-7	L			>480	>480	>480		>480		>480	>480	>480
							<0.1	<0.1	<0.1		<0.01		<0.1	<0.1	<0.07
		Ammonium hydroxide, 28%-30%	1336-21-6	L		imm.	>480	>480	89	>480	>480	160	>480	>480	>480
						62	<0.1	<0.1	32	<0.1	<0.1	4.7	<0.1	<0.1	<0.02
		Lithium hydroxide, 20%	1310-65-2	L		>480									
						<0.1									
		Potassium hydroxide	1310-58-3	L								>480	>480	>480	>480
												<0.008	<0.008	<0.008	<0.008
		Potassium hydroxide, 45%	1310-58-3	L							>480	>480	>480	>480	>480
											<0.1	<0.008	<0.008	<0.008	<0.008
		Sodium hydroxide, conc.	1310-73-2	S						>480					
										<0.1					
		Sodium hydroxide, 42-50%	1310-73-2	L	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Sodium hydroxide, sat. sol. in water	1310-73-2	L		>480	>480	>480			>480		>480		
						<0.1	<0.1	<0.1			<0.1		<0.1		
390 Ketones															
	391 Aliphatic and Alicyclic														
		Acetone	67-64-1	L	imm.	imm.	12	12	>480	>480	>480	>480	>480	>480	>480
					1.9	10	3.2	3.2	<0.1	0.06	<0.1	<0.001	<0.1	<0.01	<0.1
		Chloroacetone	78-95-5	L			>480	>480			>480		>480		
							0.08	0.08			0.08		0.08		
		Cyclohexanone	108-94-1	L			136	136			136	>480	>480	>480	>480
							1.97	1.97			1.97	<0.01	<0.01	<0.01	<0.01
		1,3-Dichloroacetone (40º C)	534-07-6	L						>480		>480	>480	>480	>480

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
										<0.02		<0.1	<0.1	<0.1	<0.1

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Mesityl oxide	141-79-7	L									>480		
													<0.1		
		Methyl ethyl ketone	78-93-3	L			10	10	>480	71	>480	>480	>480	>480	>480
							13	13	<0.1	0.37	<0.1	<0.007	<0.007	<0.007	<0.01
		Methyl isobutyl ketone	108-10-1	L					>480	>480		>480	>480	>480	>480
									<0.02	<0.01		0.001	<0.1	0.001	<0.001
		1,1,3-Trichloroacetone	921-03-9	L						>480					
										<0.05					
	392 Aromatic														
		Acetophenone	98-86-2	L							>480				
											<0.1				
		Chloroacetophenone	532-27-4	L									>480		
													<0.1		
430 Nitriles															
	431 Aliphatic and Alicyclic														
		Acetone cyanohydrin	75-86-5	L						>480		>480	>480	>480	>480
										<0.05		<0.01	<0.01	<0.01	<0.01
		Acetonitrile	75-05-8	L	imm.	imm.	12	12	imm.	157	>480	>480	>480	>480	>480
					1.9	16	2.8	2.8	0.78	0.19	<0.1	<0.003	<0.1	<0.1	<0.1
		Acrylonitrile	107-13-1	L		imm.	50	50	13	12	377	>480	>480	>480	>480
						10.6	1.2	1.2	0.75	0.57	0.18	<0.001	<0.1	<0.001	<0.001
		Adiponitrile	111-69-3	L						>480		>480	>480	>480	>480
										<0.05		<0.1	<0.1	<0.1	<0.1
		2-Chloroacrylonitrile	920-37-6	L									>480		
													<0.1		
		2-Methylglutaronitrile, 87%	4553-62-2	L						>480		>480	>480	>480	>480
										<0.1		<0.1	<0.1	<0.1	<0.1
		2-Pentenenitrile	13284-42-9	L						>480			>480		
										<0.02			<0.1		
		cis-2-Pentenenitrile, 70%	25899-50-7	L								>480	>480	>480	>480
												<0.001	<0.001	<0.001	<0.001
		3-Pentenenitrile	4635-87-4	L								>480	>480	>480	>480
												<0.001	<0.001	<0.001	<0.001
	432 Aromatic														
		Benzonitrile	100-47-0	L						>480		>480	>480	>480	>480
										<0.001		<0.004	<0.1	<0.004	<0.004
		Benzyl Chloride	140-29-4	L					>390	>390					
									<0.01	<0.01					

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
440 Nitro Compounds															
	441 Unsubstituted														
		Nitrobenzene	98-95-3	L	imm.	imm.	102	102	>480	>480	>480	>480	>480	>480	>480
					7.2	18	2.3	2.3	<0.1	<0.001	<0.1	<0.01	<0.1	<0.01	<0.1
		Nitromethane	75-52-5	L						229		>480	>480	>480	>480
										0.97		<0.005	<0.1	<0.005	<0.005
		2-Nitropropane	79-46-9	L						>480		>480	>480	>480	>480
										<0.05		<0.01	<0.01	<0.01	<0.01
	442 Substituted														
		4,6-Dinitro-o-cresol , 90+%	534-52-1	L							>480				
											<0.1				
		Dinitro-o-cresol, sat. sol. in methanol	534-52-1	L								>480	>480	>480	>480
												<0.013	<0.013	<0.013	<0.013
		o-Nitrochlorobenzene	88-73-3	S		15	237	237			237		237		
						4.1	0.61	0.61			0.61		0.61		
		o-Nitrochlorobenzene (35º C)	88-73-3	L			80	80			80		80		
							2.4	2.4			2.4		2.4		
		p-Nitrochlorobenzene	100-00-5	S		imm.	476	476			476		476		
						2.3	0.11	0.11			0.11		0.11		
		p-Nitrochlorobenzene (85º C)	100-00-5	L			321	321			321		321		
							1.5	1.5			1.5		1.5		
		2-Nitrophenol (70º C)	88-75-5	L			imm.	imm.			imm.	208	208	208	208
							4.53	4.53			4.53	0.17	0.17	0.17	0.17
		o-Nitrotoluene	88-72-2	L			317	317			317		317		
							0.41	0.41			0.41		0.41		
		p-Nitrotoluene	99-99-0	S		imm.	123	123			123		123		
						14	2.2	2.2			2.2		2.2		
		p-Nitrotoluene (60º C)	99-99-0	L			imm.	imm.			imm.		imm.		
							42	42			42		42		
450 Nitroso Compounds															
		Dimethyl nitrosamine	62-75-9	L						>480					
										<0.001					
460 Organo-Phosphorus Compounds															
	462 Derivatives of Phosphorus-based acids														
		Diazinon, 25%	333-41-5	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Chlorpyrifos, 7%	2921-88-2	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Ethyl parathion	56-38-2	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		Malathion	121-75-5	L								>480	>480	>480	>480
												<0.013	<0.013	<0.1	<0.013
		Malathion, 50% in water	121-75-5	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Malathion, 50% in methanol	121-75-5	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Methyl parathion	298-00-0	L									>480		
													<0.1		
		Sarin (GB) Chemical Agent	107-44-8	L	See "Chemical Warfare Agents" Data Sheet for test protocols and results.										
		Soman (GD) chemical agent	96-64-0	L	See "Chemical Warfare Agents" Data Sheet for test protocols and results.										
		Skydrol®	95660-51-8	L		>480							>480		
						<0.01							<0.1		
		Tabun	77-81-6	L	See "Chemical Warfare Agents" Data Sheet for test protocols and results.										
		Tetraethyl lead	78-00-2	L					>480			>480	>480	>480	>480
									<0.1			<0.07	<0.07	<0.07	<0.07
		Trimethyl phosphate	512-56-1	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Trimethyl phosphite	121-45-9	L			10	10			10	>480	>480	>480	>480
							0.5	0.5			0.5	<0.1	<0.1	<0.1	<0.1
		Triphenyl phosphite	101-02-0	L									>480		
													<0.1		
		Tritolyl phosphate	1330-78-5	L							>480				
											<0.1				
		Vinylmagnesium chloride, 16.5%	3536-96-7	L								>480	>480	>480	>480
												<0.01	<0.01	<0.01	<0.01
		VX Nerve agent	50782-69-9	L	See "Chemical Warfare Agents" Data Sheet for test protocols and results.										
470 Organo-Metallic Compounds															
		Lewisite (L) Chemical Agent	541-25-3	L	See "Chemical Warfare Agents" Data Sheet for test protocols and results.										
		Nickel carbonyl	13463-39-3	L										>480	
														<0.04	
		Organo-Tin Paint	mixture	L									>240		
													<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Triethylaluminum	97-93-8	L											>480
															<0.1
480 Organo-Silicon Compounds															
		Dichlorosilane	4109-96-0	G								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Dimethyldichlorosilane	75-78-5	L			>480	>480		>480	>480		>480	>480	
							<0.1	<0.1		<0.0001	<0.1		<0.1	<0.1	
		Hexamethyldisilazane	999-97-3	L			>480	>480			>480	>480	>480	>480	>480
							<0.03	<0.03			<0.03	<0.02	<0.1	<0.02	<0.02
		Methyl trichlorosilane	75-79-6	L						>480		>480	>480	>480	>480
										<0.0001		<0.1	<0.1	<0.1	<0.1
		Silane	7803-62-5	G								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Silicon tetrachloride	10026-04-7	L			80	80		>480	80	>480	>480	>480	>480
							7.8	7.8		<0.0001	7.8	<0.1	<0.1	<0.1	<0.1
		Tetraethoxysilane	78-10-4	L								>480	>480	>480	>480
												<0.014	<0.014	<0.014	<0.014
		Trichlorophenylsilane	98-13-5	L			>480	>480		>480	>480		>480	>480	
							<0.1	<0.1		<0.001	<0.1		<0.1	<0.1	
		Trichlorosilane	10025-78-2	L			30	30			30	>480	>480	>480	>480
							59	59			59	<0.022	<0.1	<0.022	<0.022
		Trichlorovinylsilane	75-94-5	L			75	75			75		75		
							3.6	3.6			3.6		3.6		
		Triethoxysilane	998-30-1	L									>480		
													<0.1		
500 Sulfur Compounds															
	501 Thiols														
		Methyl mercaptan	74-93-1	G						>480		>480	>480	>480	>480
										0.05		<0.001	<0.1	<0.001	<0.001
		Phenyl mercaptan	108-98-5	L			19	19			19	>480	>480	>480	>480
							3.6	3.6			3.6	<0.02	<0.02	<0.02	<0.02
		Thioglycolic acid	68-11-1	L						>480		>480	>480	>480	>480
										<0.0001		<0.1	<0.1	<0.1	<0.1
	502 Sulfides and Disulfides														
		Carbon disulfide	75-15-0	L	imm.	imm.	imm.	imm.	16	>480	>480	>480	>480	>480	>480
					>10	high	>10	>50	0.51	0.05	<0.1	<0.001	<0.1	<0.02	<0.1
		Dimethyl sulfide	75-18-3	L						271					
										1.21					

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		Dimethyl disulfide	624-92-0	L									>480		
													<0.1		
		Disulfur dichloride	10025-67-9	L					210			>480	>480	>480	>480
									6.2			<0.01	<0.01	<0.01	<0.01
		Hydrogen sulfide	7783-06-4	G					imm.			>480	>480	>480	>480
									1.8			<0.01	<0.01	<0.01	<0.01
		Sulfur dichloride, 80%	10545-99-0	L					imm.		40	70	448	>480	70
									41		4.94	6	0.33	<0.1	6
		Sulfur dichloride, 99%	10545-99-0	L										440	
														0.3	
		Sulfur mustard (HD) chemical agent	505-60-2	L	See "Chemical Warfare Agents" Data Sheet for test protocols and results.										
	503 Sulfones and Sulfoxides														
		Dimethyl sulfoxide	67-68-5	L						36		>480	>240	>480	>480
										1.9		0.003	<0.1	0.003	0.003
	504 Sulfonic Acids														
		Chlorosulfonic acid	7790-94-5	L			>480	>480	330	>480	>480	180	>480	>480	180
							<0.1	<0.1	0.97	0.0003	<0.1	98	<0.1	<0.1	98
		Methanesulfonic acid	75-75-2	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		p-Toluenesulfonic acid Monohydrate	6192-52-5	L							>480				
											<0.1				
		Trifluoromethane sulfonic acid	1493-13-6	L			>480	>480			>480	>480	>480	>480	>480
							<0.01	<0.01			<0.01	<0.01	<0.01	<0.01	<0.01
	505 Sulfonyl Chlorides														
		Benzene sulfonyl chloride	98-09-9	L						>480		>480	>480	>480	>480
										<0.02		<0.1	<0.1	<0.1	<0.1
		MethaneSulfonyl Chloride	124-63-0	L								>480	>480	>480	>480
												<0.0006	<0.0006	<0.0006	<0.0006
	507 Sulfonates, Sulfates,and Sulfites														
		Diethyl sulfate	64-67-5	L						>480			>480	>480	
										<0.02			<0.1	<0.1	
		Dimethyl sulfate	77-78-1	L			>480	>480			>480	>480	>480	>480	>480
							<0.1	<0.1			<0.1	<0.001	<0.1	<0.001	<0.001
	509 Other														
		Sulfur hexafluoride	2551-62-4	G								>480	>480	>480	>480
												<0.015	<0.1	<0.015	<0.015
		Trifluoromethane Sulfonic Acid	935-92-2	L						>480					
										<0.1					
		Sodium methylate, 50% in	124-41-4	L								>480	>480	>480	>480

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		methanol										<0.1	<0.1	<0.1	<0.1

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
590 Miscellaneous (Not classified)															
		AFFF	191681-14-8	L									>240		
													<0.1		
		Black Liquor	308074-23-9	L		>480	>480	>480			>480	>480	>480	>480	>480
						<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1
		Borane-pyridine complex	110-51-0	L									>480		
													<0.1		
		Boron trifluoride Dimethyletherate	353-42-4	L						>480					
										<0.01					
		Boron trifluoride etherate	109-63-7	L										>480	
														<0.1	
		Chemidize 727 ND	mixture	L			>480	>480			>480		>480		
							<0.06	<0.06			<0.06		<0.06		
		Crude oil	8002-05-9	L		imm.	>480	>480			>480	>480	>480	>480	>480
						3.3	<0.01	<0.01			<0.01	<0.04	<0.04	<0.04	<0.04
		Decontaminating Agent (DS-2)	mixture	L									>240		
													<0.1		
		2,4-Dichloro-6-isopropyl-S-triazine 22%,Toluene 78%	mixture	L								>480	>480	>480	>480
												<0.1	<0.1	<0.1	<0.1
		Dowtherm Heat Transfer Fluid	8004-13-5	L									>480		
													<0.1		
		DuPont Activator 193S	mixture	L		>480									
						<0.1									
		DuPont Activator 4505S	mixture	L		>480									
						<0.01									
		DuPont Activator 4507S	mixture	L		>480									
						<0.1									
		Ethyl benzene 80%, 4,6-Dinitro-o-cresol 20%	mixture	L			45*	45*			45*		45*		
							18	18			18		18		
		Gasohol	mixture	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Glade Intech 200	mixture	L			>480	>480			>480		>480		
							<0.1	<0.1			<0.1		<0.1		
		Green liquor	68131-30-6	L		>480	>480	>480			>480	>480	>480	>480	>480
						<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1
		Methyl ethyl ketoxime	96-29-7	L			>480	>480		>480	>480	>480	>480	>480	>480
							<0.1	<0.1		<0.02	<0.1	<0.1	<0.1	<0.1	<0.1
		Otto Fuel II	106602-80-6	L									>480		
													<0.1		

Data Table for Tychem® Limited-Use Fabrics

Class	Sub- Class	Chemical Name	CAS	Phase	Tychem® CPF 1	Tychem® QC	Tychem® CPF 2	Tychem® SL	Tychem® CPF 3	Tychem® F	Tychem® CPF 4	Tychem® BR and Tychem® LV	Tychem® Responder®	Tychem® TK	Tychem® Reflector®
		t-Sodium-amylate / t-amyl alcohol	mixture	S								120	120	120	120
												4.9	4.9	4.9	4.9
		Tetramethyltin (0.5%) in n-pentane	mixture	L								>480	>480	>480	>480
												<0.006	<0.006	<0.006	<0.006
		White liquor	68131-33-9	L		>480	>480	>480			>480	>480	>480	>480	>480
						<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1
595 Chemical Warfare Agents				See "Chemical Warfare Agents" Data Table for test results and protocols.											

Data Table for Tychem® Reusable Fabrics

Note: Permeation test results are listed as follows:	**Symbols and Abbreviations used in data table:**
Average Standardized Breakthrough Time (minutes)	> = more than < = less than
Average Steady-State Permeation Rate (µg/cm²/min.)	imm. = immediate (less than 10 minutes)
	* Actual breakthrough time; standardized data not available.
	S = Solid L = Liquid G = Gas

Class	Sub Class	Chemical Name	CAS Number	Phase	DuPont™ Tychem® CPE	DuPont™ Tychem® Butyl	DuPont™ Tychem® PVC
120 Aldehydes							
	122 Aromatic						
		2-Furaldehyde	98-01-1	L		>480	
						<0.1	
130 Amides							
	132 Aliphatic and Alicyclic						
		N,N-Dimethylformamide	68-12-2	L	249	>480	24
					55	<0.1	44
140 Amines							
	142 Aliphatic and Alicyclic, Secondary						
		Diethylamine	109-89-7	L	45	imm.	15
					322	527	10.6
220 Carboxylic Esters							
	222 Acetates						
		Ethyl acetate	141-78-6	L	54	28	imm.
					109	19	1342
240 Ethers							
	241 Aliphatic and Alicyclic						
		Tetrahydrofuran	109-99-9	L	20	imm.	imm.
					311	333	843
260 Halogen Compounds							
	261 Aliphatic and Alicyclic						
		Dichloromethane	75-09-2	L	13	imm.	imm.
					1418	583	425
		Methyl Chloride	74-87-3	G	>480		
					<0.003		
	264 Vinylic						
		1,1,2,2-Tetrachloroethylene	127-18-4	L	61	imm.	13
					192	10.3	1087

Data Table for Tychem® Reusable Fabrics

Class	Sub Class	Chemical Name	CAS Number	Phase	DuPont™ Tychem® CPE	DuPont™ Tychem® Butyl	DuPont™ Tychem® PVC
270 Heterocyclic Compounds							
	275 Oxygen, Epoxides						
		Ethylene oxide gas	75-21-8	G	80		
					73		
	277 Oxygen, Furans						
		2-Furaldehyde	98-01-1	L		>480	
						<0.1	
290 Hydrocarbons							
	291 Aliphatic and Alicyclic, Saturated						
		n-Hexane	110-54-3	L	78	imm.	imm.
					12	487	160
	292 Aromatic						
		Toluene	108-88-3	L	20	imm.	imm.
					300	770	1755
300 Peroxides							
		Hydrogen Peroxide, 50%	7722-84-1	L	>480		
					<0.002		
310 Hydroxylic Compounds							
	311 Aliphatic and Alicyclic, Primary						
		Methanol	67-56-1	L	>480	304	13
					<0.1	0.037	26
	313 Aliphatic and Alicyclic, Tertiary						
		Acetone cyanohydrin	75-86-5	L		>480	
						<0.1	
	316 Aromatic, Phenols						
		Phenol, 88%	108-95-2	L			15
							0.015
330 Elements							
		Chlorine gas	7782-50-5	G	417		
					0.43		
350 Inorganic Gases and Vapors							
		Ammonia gas	7664-41-7	G	>480		
					<0.1		
		Chlorine gas	7782-50-5	G	417		
					0.43		

Data Table for Tychem® Reusable Fabrics

Class	Sub Class	Chemical Name	CAS Number	Phase	DuPont™ Tychem® CPE	DuPont™ Tychem® Butyl	DuPont™ Tychem® PVC
		Hydrogen chloride gas	7647-01-0	G	>480		
					<0.1		
		Hydrogen fluoride gas	7664-39-3	G	>480	imm.	>480
					<0.1	500	<0.01
		Hydrogen fluoride liquid (20° C)	7664-39-3	L	>480	50	
					<0.1	240	
360	**Inorganic Acid Halides**						
		Titanium Tetrachloride	7550-45-0	L			>480
							<0.1
370 Inorganic Acids							
		Chromic Acid, 45%	1333-82-0	L	>480		
					<0.1		
		Hydrochloric acid, 37%	7646-01-0	L	>480	>480	>480
					<0.1	<0.1	<0.1
		Hydrofluoric acid, 48- 50%	7664-39-3	L		>480	>480
						<0.1	<0.1
		Hydrogen fluoride liquid (20° C)	7664-39-3	L	>480	50	
					<0.1	240	
		Nitric Acid, 70%	7697-37-2	G	>480		
					<0.1		
		Oleum, 27-33% free SO3	7664-93-9	L	>480		
					<0.1		
		Phosphoric Acid, 85%	7664-38-2	L	>480		
					<0.1		
		Sulfuric acid, 95+%	7664-93-9	L	>480	160	150
					<0.1	0.49	57
380 Inorganic Bases							
		Sodium hydroxide, saturated	1310-73-2	L	>480	>480	>480
					<0.1	<0.1	<0.1
390 Ketones							
	391 Aliphatic and Alicyclic						
		Acetone	67-64-1	L	54	125	imm.
					67.2	0.037	298
430 Nitriles							
	431 Unsubstituted						
		Acetone cyanohydrin	75-86-5	L		>480	

Data Table for Tychem® Reusable Fabrics

Class	Sub Class	Chemical Name	CAS Number	Phase	DuPont™ Tychem® CPE	DuPont™ Tychem® Butyl	DuPont™ Tychem® PVC
						<0.1	

Data Table for Tychem® Reusable Fabrics

Class	Sub Class	Chemical Name	CAS Number	Phase	DuPont™ Tychem® CPE	DuPont™ Tychem® Butyl	DuPont™ Tychem® PVC
		Acetonitrile	75-05-8	L	316	120	
					0.55	0.022	
		Acrylonitrile	107-13-1	L		138	
						0.84	
		2-Pentenenitrile, 70%	25899-50-7	L		221	
						1.14	
440 Nitro Compounds							
	441 Unsubstituted						
		Nitrobenzene	98-95-3	L	169	>480	>480
					36	<0.1	<0.1
500 Sulfur Compounds							
	502 Sulfides and Disulfides						
		Carbon disulfide	75-15-0	L	imm.	imm.	imm.
					>50	380	153
	504 Sulfonic Acids						
		Chlorosulfonic acid	7790-94-5	L	150		
					>3000		
	507 Sulfonates, Sulfates, and Sulfites						
		Dimethyl sulfate	77-78-1	L		>480	
						<0.1	
590 Miscellaneous (Not Classified)							
		Black Liquor	308074-23-9	L			>480
							<0.1
		Green Liquor	68131-30-6	L			>480
							<0.1
		White Liquor	68131-33-9	L			>480
							<0.1

For more information about DuPont Personal Protection

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