



TP0750TORCE

# Tychem® ThermoPro

DuPont™ Tychem® ThermoPro Combo. ThermoPro jacket and bib overall combination. Jacket with elasticated wrists and waist and double storm flap. Overall with adjustable webbing straps with buckle closure and open ankles. Orange.

Name	Description
Full Part Number	TP0750TORCE
Fabric/Materials	Tychem® 6000 FR
Design	Combo Suit: Jacket and Bib Overall
Seam	Stitched and over-taped
Color	Orange
Sizes	SM, MD, LG, XL, 2X, 3X, 4X
Quantity/Box	2 per box

## FEATURES & PRODUCT DETAILS

DuPont™ Tychem® ThermoPro Combo. Collared jacket and bib overall combination available in bright orange for high visibility, in sizes SM to 4X. Jacket with elasticated wrists and waist. Overall with adjustable webbing straps with buckle closure, open ankles. Jacket comes with double storm flap. Sewn with DuPont® Nomex® thread

Tychem® ThermoPro garments provide triple hazard protection from liquid-chemical splash, flash fire and electric arc in a single layer. They combine the trusted chemical protection of Tychem® and thermal/arc protection of Nomex® to help provide industrial workers and HazMat responders with permeation protection against a broad range of toxic industrial chemicals and to provide escape time from flash fires.

Typical applications include use at industrial chemical processing plants and in the oil and gas industry.

- Chemical protective clothing, Category III, Type 3, 4 and 6
- Inherently antistatic (EN 1149-5) - on inside
- EN ISO 11612 (heat and flame), EN ISO 14116 (limited flame spread), IEC 61482-2 (electric arc)
- Stitched and over-taped seams with barrier tape for protection and strength

## SIZES

Product Size	Article Number	Additional info
SM	D15482781	MTO
MD	D15482794	MTO
LG	D15482807	MTO
XL	D15482819	MTO
2X	D15482824	MTO
3X	D15482834	MTO
4X	D15482843	MTO

## Physical Properties



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

Property	Test Method	Typical Result	EN
Abrasion Resistance <sup>7</sup>	EN 530 Method 2	>2000 cycles	6/6 <sup>1</sup>
Basis Weight	DIN EN ISO 536	280 g/m <sup>2</sup>	N/A
Charge decay, inside <sup>7</sup>	EN 1149-3	t <sub>50</sub> <4s or S>0.2, Pass <sup>14</sup>	N/A
Charge decay, outside <sup>7</sup>	EN 1149-3	No decay, outside	N/A
Colour	N/A	Orange	N/A
Flex Cracking Resistance <sup>7</sup>	EN ISO 7854 Method B	>1000 cycles	1/6 <sup>1</sup>
Flex Cracking Resistance at -30°C	EN ISO 7854 Method B	>4000 cycles	6/6 <sup>1</sup>
Puncture Resistance	EN 863	>10 N	2/6 <sup>1</sup>
Tensile Strength (MD)	DIN EN ISO 13934-1	>500 N	5/6 <sup>1</sup>
Tensile Strength (XD)	DIN EN ISO 13934-1	>500 N	5/6 <sup>1</sup>
Thickness	DIN EN ISO 534	860 µm	N/A
Trapezoidal Tear Resistance (MD)	EN ISO 9073-4	>100 N	5/6 <sup>1</sup>
Trapezoidal Tear Resistance (XD)	EN ISO 9073-4	>100 N	5/6 <sup>1</sup>

1 According to EN 14325 2 According to EN 14126 3 According to EN 1073-2 4 According to EN 14116 12  
 According to EN 11612 5 Front Tyvek ® / Back 6 Based on test according to ASTM D-572 7 See Instructions for  
 Use for further information, limitations and warnings > Larger than < Smaller than N/A Not Applicable STD DEV  
 Standard Deviation

## GARMENT PERFORMANCE



Information relating to the protective performance of a garment according to European standards where applicable. Includes important characteristics such as protection against radioactive contamination, seam strength and shelf life. Inward leakage and resistance to penetration by liquids, according to the relevant Type classification, are also detailed.

Property	Test Method	Typical Result	EN
Seam Strength	EN ISO 13935-2	>300 N	5/6 <sup>1</sup>
Shelf Life <sup>7</sup>	N/A	5 years	N/A
Type 3: Resistance to Penetration by Liquids (Jet Test)	EN 17491-3	Pass <sup>7</sup>	N/A
Type 4: Resistance to Penetration by Liquids (High Level Spray Test)	EN ISO 17491-4, Method B	Pass	N/A
Type 6: Resistance to Penetration by Liquids (Low Level Spray Test)	EN ISO 17491-4, Method A	Pass	N/A

1 According to EN 14325 3 According to EN 1073-2 12 According to EN 11612 13 According to EN 11611 5 Front Tyvek ® / Back 6 Based on test according to ASTM D-572 7 See Instructions for Use for further information, limitations and warnings 11 Based on the average of 10 suits, 3 activities, 3 probes > Larger than < Smaller than N/A Not Applicable \* Based on lowest single value

## PENETRATION AND REPELLENCY



A specific test method, EN ISO 6530, is used to measure the indexes of penetration, absorption and repellency of protective clothing material exposed to liquid chemicals. Results listed here reflect the penetration resistance and repellency of DuPont fabrics to 30% sulphuric acid and 10% sodium hydroxide.

Property	Test Method	Typical Result	EN
Repellency to Liquids, o-Xylene	EN ISO 6530	>95 %	3/3 <sup>1</sup>
Repellency to Liquids, Butan-1-ol	EN ISO 6530	>95 %	3/3 <sup>1</sup>
Repellency to Liquids, Sodium Hydroxide (10%)	EN ISO 6530	>95 %	3/3 <sup>1</sup>
Repellency to Liquids, Sulphuric Acid (30%)	EN ISO 6530	>95 %	3/3 <sup>1</sup>
Resistance to Penetration by Liquids, Butan-1-ol	EN ISO 6530	<1 %	3/3 <sup>1</sup>
Resistance to Penetration by Liquids, Sodium Hydroxide (10%)	EN ISO 6530	<1 %	3/3 <sup>1</sup>
Resistance to Penetration by Liquids, Sulphuric Acid (30%)	EN ISO 6530	<1 %	3/3 <sup>1</sup>
Resistance to Penetration by Liquids, o-Xylene	EN ISO 6530	<1 %	3/3 <sup>1</sup>

<sup>1</sup> According to EN 14325 > Larger than < Smaller than

## BIOLOGICAL BARRIER



Detailed information on the protective performance (resistance to penetration) of DuPont clothing when exposed to biologically contaminated aerosols, liquids and dusts as well as blood, body fluids and blood-borne pathogens. Sorted by relevant European standard.

Property	Test Method	Typical Result	EN
Resistance to Penetration by Biologically Contaminated Aerosols	ISO/DIS 22611	log ratio >5	3/3 <sup>2</sup>
Resistance to Penetration by Blood and Body Fluids using Synthetic Blood	ISO 16603	20 kPa	6/6 <sup>2</sup>
Resistance to Penetration by Blood-borne Pathogens using Bacteriophage Phi-X174	ISO 16604 Procedure C	20 kPa	6/6 <sup>2</sup>
Resistance to Penetration by Contaminated Liquids	EN ISO 22610	>75 min	6/6 <sup>2</sup>
Resistance to Penetration by Contaminated Solid Particles	ISO 22612	log cfu <1	3/3 <sup>2</sup>

<sup>2</sup> According to EN 14126 > Larger than < Smaller than



## WELDING AND ALLIED PROCESSES



Amongst the safety requirements and test methods for protective clothing worn during welding and allied processes are resistance to molten metal splashes, tear strength and electrical resistance.

Property	Test Method	Typical Result	EN
Electrical resistance	EN 1149-2	>10 <sup>5</sup> Ohm, Pass	N/A
Small molten metal splashes	ISO 9150	>25 drops	2/2 <sup>13</sup>
Tear Strength	ISO 13937-2	>20 N	N/A

4 According to EN 14116    13 According to EN 11611

## Warning

- MTO: Made to order terms & conditions apply.
- The information provided herein corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials or additives or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights.

## PERMEATION DATA



Permeation is the process by which a solid, liquid or gaseous chemical moves through a protective clothing fabric at a molecular level. Permeation data assist in the selection of the most appropriate protective garment for a particular application and in the estimation of how long it can be safely worn. Standardised test methods are used to determine the resistance of DuPont materials to permeation, the results of which can be selected according to a specific chemical, chemical class or fabric.

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO

2-(2-Butoxyethoxy) ethanol	Liquid	112-34-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetaldehyde	Liquid	75-07-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acetic acid (>95%)	Liquid	64-19-7	>480	>480	>480	6	<0.027	0.027	<13	>480	6
Acetic acid 2 ethoxy ethyl ester	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Acetic acid 2 methoxy ethyl ester	Liquid	110-49-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Acetic acid ethenyl ester	Liquid	108-05-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetic acid ethyl ester	Liquid	141-78-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetic acid pentyl ester	Liquid	628-63-7	>480	>480	>480	6	<0.02	0.021	<10.2	>480	6
Acetic anhydride	Liquid	108-24-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Acetic chloride	Liquid	75-36-5	155	>480	>480	6	0.0014	0.0001			
Acetone	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetone cyanohydrin	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetonitrile	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Acetyl chloride	Liquid	75-36-5	155	>480	>480	6	0.0014	0.0001			
Acroleic acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Acrolein	Liquid	107-02-8	51*/65	75*/101	>480	6	<0.5	0.02	105	>480	6
Acrolein (10 g/m <sup>2</sup> )	Liquid	107-02-8	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Acrylamide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acrylic acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Acrylic acid n-butyl ester	Liquid	141-32-2	>480	>480	>480	6	<0.0161	0.0161	<7.7	>480	6
Acrylamide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Acrylonitrile	Liquid	107-13-1	107	108	116	3	3.7	0.0085			
Acryloyl Chloride	Liquid	814-68-6	166*/224	334	>480	6	<0.3	0.04	29.6	>480	6
Adipic acid dinitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Adipic acid nitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Adiponitrile	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Allyl alcohol	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Allyl chloride	Liquid	107-05-1	291*/400	381*/447	>480	6	<0.02	0.02	<18.5	>480	6
Amino benzene	Liquid	62-53-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Amino diphenyl, 4- (1 mg/ml in Methanol)	Liquid	92-67-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Amino ethanol, 2-	Liquid	141-43-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Amino ethylethanolamine	Liquid	111-41-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Amino ethylethanolamine (60%)	Liquid	111-41-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Amino ethylpiperazine	Liquid	140-31-8	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Amino propane, 2-	Liquid	75-31-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ammonia (gaseous)	Vapor	7664-41-7	15	90	>480	6	0.349	0.05			
Ammonium bifluoride (sat)	Liquid	1341-49-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ammonium hydrogendifluoride (sat)	Liquid	1341-49-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ammonium hydroxide (2-3% in Household cleaner)	Liquid	1336-21-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ammonium hydroxide (32%)	Liquid	1336-21-6	30	35	>480	6	na	0.05	40.7	>480	6
Amyl acetate, n-	Liquid	628-63-7	>480	>480	>480	6	<0.02	0.021	<10.2	>480	6
Amyl alcohol	Liquid	71-41-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Amyl ester acetic acid	Liquid	628-63-7	>480	>480	>480	6	<0.02	0.021	<10.2	>480	6
Anilin, 4-Trifluoromethoxy-	Liquid	461-82-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Aniline	Liquid	62-53-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Anthracene (sat in Toluene)	Liquid	120-12-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Anthracin (sat in Toluene)	Liquid	120-12-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Antimony pentachloride	Liquid	7647-18-9	<15	<15	<15	1	>10	0.1			
Arsenic (III) chloride	Liquid	7784-34-1	22*/29	32*/38	59	2	334	0.01			
Arsenic trichloride	Liquid	7784-34-1	22*/29	32*/38	59	2	334	0.01			
Azolidine	Liquid	123-75-1	40*/80	45*/100	145*/185	4	4.7	0.05			
Benzenamine	Liquid	62-53-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzene	Liquid	71-43-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Benzene carbonyl chloride	Liquid	98-88-4	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Benzene sulfone chloride	Liquid	98-09-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzene sulfonyl chloride	Liquid	98-09-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzo nitrile	Liquid	100-47-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Benzoyl chloride	Liquid	98-88-4	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Benzyl alcohol	Liquid	100-51-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Benzyl chloride	Liquid	100-44-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Benzyl cyanide	Liquid	140-29-4	>390	>390	>390	5	<0.01	0.01	<4.8	>480	6
Benzyl methylamine, N-	Liquid	103-67-3	>480	>480	>480	6	>0.02	0.02	<9.6	>480	6
Bis (4-(2,3-epoxypropoxy)phenyl) propane	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Bis phenol A diglycidyl ether	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Black Liquor (mix)	Liquid	mix		>480							
Boron fluoride ethyl ether	Liquid	109-63-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Boron trifluoride diethyl etherate	Liquid	109-63-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Boron trifluoride dimethyl etherate	Liquid	353-42-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Boron trifluoride etherate	Liquid	109-63-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Bromine	Liquid	7726-95-6	imm	imm	imm		105	0.001			
Bromo 4-fluorobenzene, 1-	Liquid	460-00-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Bromo fluorobenzene, 4-	Liquid	460-00-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
But-3-en-2-one	Liquid	78-94-4	287* /379	>480	>480	6	<0.1	0.02	<9.6	>480	6
Butadiene, 1,3- (gaseous)	Vapor	106-99-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Butanol, 1-	Liquid	71-36-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butanol, n-	Liquid	71-36-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butanol, tert-	Liquid	75-65-0	10*/147	37* /205	>480	6	0.26	0.02			
Butanone	Liquid	78-93-3	imm	40*/64	>480	6	0.36	0.001			
Butanone oxime, 2-	Liquid	96-29-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Butoxy ethanol, 2-	Liquid	111-76-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butyl acetate, n-	Liquid	123-86-4	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butyl acrylate, n-	Liquid	141-32-2	>480	>480	>480	6	<0.0161	0.0161	<7.7	>480	6
Butyl alcohol, n-	Liquid	71-36-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Butyl amine	Liquid	109-73-9	170	200	>480	6	0.84	0.01	137.5	>480	6
Butyl ether, n-	Liquid	142-96-1	>480	>480	>480	6	<0.0210	0.021	<10.2	>480	6
Butyl stannium trichloride	Liquid	1118-46-3	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Calomel (sat)	Liquid	10112-91-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Carbon disulfide	Liquid	75-15-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Carbon tetrachloride	Liquid	56-23-5	imm	imm* /11	>480	6	0.57	0.001			
Caustic ammonia (2-3% in Householdcleaner)	Liquid	1336-21-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Caustic ammonia (32%)	Liquid	1336-21-6	30	35	>480	6	na	0.05	40.7	>480	6
Caustic soda (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Cellosolve acetate	Liquid	110-80-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Chlor allylene	Liquid	107-05-1	291* /400	381* /447	>480	6	<0.02	0.02	<18.5	>480	6
Chlor trinitromethan	Liquid	76-06-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chlorine (gaseous)	Vapor	7782-50-5	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Chloro 1,3-butadiene, 2- (50% in Butanol)	Liquid	126-99-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro 1-methylbenzene, 2-	Liquid	95-49-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chloro 2,3-epoxy propane, 1-	Liquid	106-89-8	355	395	>480	6	<0.4	0.02	18.4	>480	6
Chloro 2-nitrobenzene, 1- (35-40 °C, molten)	Liquid	88-73-3	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Chloro acetic acid (80%)	Liquid	79-11-8	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Chloro acetone (95%)	Liquid	78-95-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chloro acrylonitrile, 2-	Liquid	920-37-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chloro aniline, p- (70 °C, molten)	Liquid	106-47-8		imm	11	1	256	0.0206			
Chloro benzenamine, 4- (70 °C, molten)	Liquid	106-47-8		imm	11	1	256	0.0206			
Chloro benzene	Liquid	108-90-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chloro ethanol, 2-	Liquid	107-07-3	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Chloro ethene	Vapor	75-01-4	imm	>480	>480	6	0.02	0.001	<9.6	>480	6
Chloro form	Liquid	67-66-3	imm	imm	imm		10.6	0.001			
Chloro methyl methyl ether	Liquid	107-30-2	imm* /11	imm* /37	>480	6	0.75	0.001			
Chloro picrin	Liquid	76-06-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chloro prene, 3-	Liquid	107-05-1	291* /400	381* /447	>480	6	<0.02	0.02	<18.5	>480	6
Chloro propan-2-one, 1- (95%)	Liquid	78-95-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Chloro toluene, alpha-	Liquid	100-44-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Chloro toluene, o-	Liquid	95-49-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Chlorsulfonic acid	Liquid	7790-94-5	17	17	18	1	na	0.05			
Citric acid (sat)	Liquid	77-92-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Creosote	Liquid	8001-58-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Cresol o-	Liquid	95-48-7	173	179	211	4	<4	0.02	674	295	5
Cumene	Liquid	98-82-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Cyanobenzene	Liquid	100-47-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Cyanoethylene	Liquid	107-13-1	107	108	116	3	3.7	0.0085			
Cyanomethane	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Cyanopropan-2-ol, 2-	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Cyclo hexane	Liquid	110-82-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Cyclo hexanone	Liquid	108-94-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diaminoethane, 1,2-	Liquid	107-15-3	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Dibromoethane, 1,2-	Liquid	106-93-4	84* /153	144* /288	>480	6	0.52	0.001			
Dibutyl 1,2-benzenedicarboxylate	Liquid	84-74-2		nm	>480	6	<1	0.05			
Dibutyl phthalate	Liquid	84-74-2		nm	>480	6	<1	0.05			
Dibutyl sebacate	Liquid	109-43-3		nm	>480	6	<1	1			
Dichlorbenzen, 1,3-	Liquid	541-73-1	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Dichlorethane, 1,2.-	Liquid	107-06-2	65*/83	93	109	3	<3	0.04	898	182	4
Dichloro -2-propanone, 1,3- (45 °C, molten)	Liquid	534-07-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Dichloro acetone, 1,3- (45 °C, molten)	Liquid	534-07-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Dichloro acetyl chloride	Liquid	79-36-7	160	160	180	4	78.41	0.01			
Dichloro ethyl ether	Liquid	111-44-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Dichloro ethylene, 1,1-	Liquid	75-35-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Dichloro methane	Liquid	75-09-2	imm	imm	imm		12.7	0.04			
Dichloro propene, 2,3-	Liquid	78-88-6	imm	imm* /25	54* /143	2	2.4	0.001			
Dicyanobutane, 1,4-	Liquid	111-69-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diesel fuel	Liquid	68334-30-5	8*/323	>480	>480	6	0.02	0.001			
Diethyl amine	Liquid	109-89-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diethyl benzene (95%)	Liquid	25340-17-4	>480	>480	>480	6	<0.022	0.022	<10.6	>480	6
Diethyl ethanamine, N,N-	Liquid	121-44-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diethyl ether	Liquid	60-29-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diethyl sulfate	Liquid	64-67-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Diethylene glycol monobutyl ether	Liquid	112-34-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diethylene triamine	Liquid	111-40-0	imm	>480	>480	6	<0.01	0.005	<4.8	>480	6
Diisopropylethylamine (DIPEA)	Liquid	7087-68-5	>480	>480	>480	6	<0.018	0.018	<8.6	>480	6



Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Dimethyl acetamide, N,N-	Liquid	127-19-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Dimethyl amine	Vapor	124-40-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dimethyl aniline, N,N-	Liquid	121-69-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Dimethyl dichlorosilane	Liquid	75-78-5	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Dimethyl formamide, N,N-	Liquid	68-12-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dimethyl ketal	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dimethyl ketone	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dimethyl mercury in decane (100 ppm in Decane)	Liquid	593-74-8	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Dimethyl nitrosamine	Liquid	62-75-9	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Dimethyl phenylamine, N,N-	Liquid	121-69-7	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Dimethyl sulfate	Liquid	77-78-1	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Dimethyl sulfide	Liquid	75-18-3	83* /139	271	452	5	1.21	0.02			
Dimethyl sulfoxide	Liquid	67-68-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Dioxane, 1,4-	Liquid	123-91-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Diphenyl methane diisocyanate, 4,4'- (50 ° C, molten)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6
Dytek® A	Liquid	15520-10-2	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Epichlorohydrin	Liquid	106-89-8	355	395	>480	6	<0.4	0.02	18.4	>480	6
Epoxy ethane (gaseous)	Vapor	75-21-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Epoxy propane, 1,2-	Liquid	75-56-9	imm* /12	13*/20	48	2	<8	0.03	1860	100	3
Ethane 1,2-diol	Liquid	107-21-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethane dioic acid (sat)	Liquid	144-62-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethane nitrile	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethane thiol	Liquid	75-08-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethane trichloride	Liquid	79-00-5	120* /173	164* /232	202* /302	4	9.1	0.01			
Ethanol	Liquid	64-17-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Ethanol amine	Liquid	141-43-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethanoyl chloride	Liquid	75-36-5	155	>480	>480	6	0.0014	0.0001			
Ethoxy ethanol, 2-	Liquid	110-80-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethoxy ethylacetat	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethyl Cellosolve®	Liquid	110-80-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Ethyl acetate	Liquid	141-78-6	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethyl alcohol	Liquid	64-17-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Ethyl benzene	Liquid	100-41-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethyl ethanamine, N-	Liquid	109-89-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethyl ether	Liquid	60-29-7	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethyl glycol acetate	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethyl mercaptan	Liquid	75-08-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethyl nitrile	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethylene carboxylic acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Ethylene chlorohydrin	Liquid	107-07-3	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Ethylene diamine	Liquid	107-15-3	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Ethylene dibromide	Liquid	106-93-4	84*/153	144*/288	>480	6	0.52	0.001			
Ethylene dichloride	Liquid	107-06-2	65*/83	93	109	3	<3	0.04	898	182	4
Ethylene glycol	Liquid	107-21-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylene glycol mono ethyl ether acetate	Liquid	111-15-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monobutyl ether	Liquid	111-76-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Ethylene glycol monoethyl ether	Liquid	110-80-5	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monomethyl ether	Liquid	109-86-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene glycol monomethyl ether acetate	Liquid	110-49-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Ethylene oxide (gaseous)	Vapor	75-21-8	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Ethylene tetrachloride	Liquid	127-18-4	210*/391	>480	>480	6	<0.03	0.02	9.81	>480	6
Ethylene trichloride	Liquid	79-01-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Fluorobenzene	Liquid	462-06-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Fluorosilicic acid (33-35%)	Liquid	16961-83-4	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Formaldehyde (37%)	Liquid	50-00-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Formalin (37% (10-15% Methanol))	Liquid	50-00-0	>480	>480	>480	6	<0.0048	0.0048	<2.3	>480	6
Formalin (37%)	Liquid	50-00-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Formic acid (50%)	Liquid	64-18-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Formic acid (>95%)	Liquid	64-18-6	172	260	>480	6	0.24	0.001			
Furaldehyde, 2-	Liquid	98-01-1	459	>480	>480	6	na	0.03	<14.4	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Furfural	Liquid	98-01-1	459	>480	>480	6	na	0.03	<14.4	>480	6
Gasoline, leaded	Liquid	mix	imm	imm* /21			0.32	0.001			
Gasoline, unleaded	Liquid	86290-81-5	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Glutaral (50%)	Liquid	111-30-8	150	170	200	4	1.861	0.01			
Glutaraldehyde (50%)	Liquid	111-30-8	150	170	200	4	1.861	0.01			
Glycol alcohol	Liquid	107-21-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Glycol chlorohydrin	Liquid	107-07-3	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Green Liquor (mix)	Liquid	mix		>480							
Hexamethylene diamine (45 °C, molten)	Liquid	124-09-4	423	>480	>480	6	0.003	0.0001	<1.4	>480	6
Hexamethylene diisocyanate	Liquid	822-06-0	>480	>480	>480	6	<0.0271	0.0271	<13	>480	6
Hexane, n-	Liquid	110-54-3	imm	>480	>480	6	<0.03	0.005	<48	>480	6
Hexanone	Liquid	108-94-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Hexone	Liquid	108-10-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydrazine	Liquid	302-01-2	269	283	352	5	2.3	0.001			
Hydriodic acid (55-57%)	Liquid	10034-85-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydrochloric acid (37%)	Liquid	7647-01-0	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydrofluoric acid (48-51%)	Liquid	7664-39-3	15	15	>480	6	na	0.05	187	nm	
Hydrogen bromide (gaseous)	Vapor	10035-10-6	>480	>480	>480	6	<0.05	0.05	9.6	>480	6
Hydrogen chloride (gaseous)	Vapor	7647-01-0	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydrogen fluoride (20-27 °C, gaseous)	Vapor	7664-39-3	imm	imm	imm		>50	0.02			
Hydrogen peroxide (50%)	Liquid	7722-84-1	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Hydrogen peroxide (70%)	Liquid	7722-84-1	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Hydrogen sulfide	Vapor	7783-06-4	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Hydroxy 1,2,3-propanetricarboxylic acid, 2- (sat)	Liquid	77-92-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Hydroxy 1-ethanethiol, 2-	Liquid	60-24-2	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Hydroxy 2-methylpropionitrile, 2-	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydroxy isobutyronitrile	Liquid	75-86-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Hydroxy toluene	Liquid	100-51-6	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Hydroxy toluene, o-	Liquid	95-48-7	173	179	211	4	<4	0.02	674	295	5
Hypophosphorus acid (50%)	Liquid	6303-21-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Iodomethane	Liquid	74-88-4	254	296	>480	6	na	0.07	53.6	>480	6
Isobutyl methyl ketone	Liquid	108-10-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isophthaloyldichloride (45 °C, molten)	Liquid	99-63-8	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Isopropanol	Liquid	67-63-0	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Isopropanol (70%)	Liquid	67-63-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isopropyl alcohol	Liquid	67-63-0	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Isopropyl alcohol (70%)	Liquid	67-63-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isopropyl amine	Liquid	75-31-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isopropyl benzene	Liquid	98-82-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Isopropylidenediphenol diglycidyl ether, 4,4'-	Liquid	1675-54-3	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Kerosene	Liquid	8008-20-6	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Ketone propane	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Lewisite (L), FINABEL 0.7.C	Liquid	541-25-3	>155 <sup>b</sup>	>155 <sup>b</sup>							
Lewisite (L), MIL-STD-282 (100 g/m <sup>2</sup> )	Liquid	541-25-3		360 <sup>b</sup>							
Limonene d-	Liquid	5989-27-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Mercapto acetic acid	Liquid	68-11-1	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Mercapto ethanol	Liquid	60-24-2	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Mercuric I chloride (sat)	Liquid	10112-91-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Mercury	Liquid	7439-97-6	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Methacrylic acid	Liquid	79-41-4	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Methanesulfonyl chloride	Liquid	124-63-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methanesulphonic acid	Liquid	75-75-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methanethiol	Vapor	74-93-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methanol	Liquid	67-56-1	56	117	>480	6	0.14	0.02			
Methoxy 2-methylpropane, 2-	Liquid	1634-04-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methoxy chloromethane	Liquid	107-30-2	imm* /11	imm* /37	>480	6	0.75	0.001			
Methoxy ethanol, 2	Liquid	109-86-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Methoxy ethylacetate, 2-	Liquid	110-49-6	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Methyl 1,5-pentanedinitrile, 2-	Liquid	4553-62-2	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Methyl 2-methyl-2-propenoate	Liquid	80-62-6	imm* /26	imm* /53			1.4	0.001			

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Methyl 2-pyrrolidon, N-	Liquid	872-50-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl 4-isopropenyl-1-cyclohexene, 1-	Liquid	5989-27-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl N-nitrosomethanamine, N-	Liquid	62-75-9	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Methyl acetyl	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl acrylate	Liquid	96-33-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl amine (gaseous)	Vapor	74-89-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl aniline, o-	Liquid	95-53-4	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Methyl benzol	Liquid	108-88-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl benzylamine, N-	Liquid	103-67-3	>480	>480	>480	6	>0.02	0.02	<9.6	>480	6
Methyl chloride (gaseous)	Vapor	74-87-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl chloro formate	Liquid	79-22-1	99* /175	204* /308	>480	6	0.17	0.05	<24	>480	6
Methyl chloroform	Liquid	71-55-6	>480	>480	>480	6	<0.007	0.007	<3.4	>480	6
Methyl cyanide	Liquid	75-05-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl ethyl ketone	Liquid	78-93-3	imm	40*/64	>480	6	0.36	0.001			
Methyl ethyl ketoxime	Liquid	96-29-7	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Methyl formamide, N-	Liquid	123-39-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl hydrazine	Liquid	60-34-4	83* /206	183* /283	280* /413	5	0.98	0.01			
Methyl iodide	Liquid	74-88-4	254	296	>480	6	na	0.07	53.6	>480	6
Methyl isocyanate	Liquid	624-83-9	imm	imm			0.42	0.001			
Methyl ketone	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl mercaptan	Vapor	74-93-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl methacrylate	Liquid	80-62-6	imm* /26	imm*/53			1.4	0.001			
Methyl pentan-2-one, 4-	Liquid	108-10-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Methyl propan-2-ol, 2-	Liquid	75-65-0	10* /147	37*/205	>480	6	0.26	0.02			
Methyl propenoic acid, 2-	Liquid	79-41-4	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Methyl pyridine, 2-	Liquid	109-06-8	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Methyl pyridine, 3-	Liquid	108-99-6	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Methyl tert-butyl ether	Liquid	1634-04-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Methyl trichloromethane	Liquid	71-55-6	>480	>480	>480	6	<0.007	0.007	<3.4	>480	6
Methyl trichlorosilane	Liquid	75-79-6	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Methyl vinyl ketone	Liquid	78-94-4	287* /379	>480	>480	6	<0.1	0.02	<9.6	>480	6
Methylene bromide	Liquid	74-95-3	imm	imm	20	1	111	0.05			
Methylene chloride	Liquid	75-09-2	imm	imm	imm		12.7	0.04			
Methylene diphenyl diisocyanate, 4,4'- (50 °C, molten)	Liquid	101-68-8	>480	>480	>480	6	<0.0403	0.0403	<19.3	>480	6
N-Methylmorpholine (NMM)	Liquid	109-02-4	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Naphthalene	Solid	91-20-3	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Naphthalene (25% in Diethylene glycol dimethylether)	Liquid	91-20-3	>480	>480	>480	6	<0.007	0.007	<3.4	>480	6
Neoprene (50% in Butanol)	Liquid	126-99-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Nicotine	Liquid	54-11-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Nitric acid (50%)	Liquid	7697-37-2	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Nitric acid (70%)	Liquid	7697-37-2	75* /115	105* /140	135* /215	4	na	0.05	>2400	nm	
Nitric acid, red fuming (90%)	Liquid	52583-42-3	imm	imm	imm		na	0.08	992/16 min	10	
Nitro benzene	Liquid	98-95-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Nitro chlormethan	Liquid	76-06-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Nitro methane	Liquid	75-52-5	157	233			0.97	0.001			
Nitro propane, 2-	Liquid	79-46-9	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Nitrogen dioxide	Vapor	10102-44-0	<15	<15			>0.2	0.01			
Oleum (20% free SO3)	Liquid	8014-95-7	14*/44	15*/59	26* /103	1	na	0.06	137/60 min	62	3
Oleum (40% free SO3)	Liquid	8014-95-7	imm* /11	imm* /12	49	2	na	0.06	637/40 min	67	3
Oxalic acid (sat)	Liquid	144-62-7	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
PCB in transformer oil (mix)	Liquid	mix	324* /428	>480	>480	6	0.032	0.01			
Pentachloroantimony	Liquid	7647-18-9	<15	<15	<15	1	>10	0.1			
Pentanedial, 1,5- (50%)	Liquid	111-30-8	150	170	200	4	1.861	0.01			
Pentanol, 1-	Liquid	71-41-0	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Pentene nitrile, 2-	Liquid	13284-42-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Pentyl acetate	Liquid	628-63-7	>480	>480	>480	6	<0.02	0.021	<10.2	>480	6
Phenethylene	Liquid	100-42-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenol (45 °C, molten)	Liquid	108-95-2	22	25	29	1	na	0.05	>355, 120 min	56	2
Phenol (85%)	Liquid	108-95-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenyl acetonitrile	Liquid	140-29-4	>390	>390	>390	5	<0.01	0.01	<4.8	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Phenyl amine	Liquid	62-53-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Phenyl chloride	Liquid	108-90-7	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenyl cyanide	Liquid	100-47-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Phenyl ethane	Liquid	100-41-4	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Phenyl propane, 2-	Liquid	98-82-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Phenyl trichlorosilane	Liquid	98-13-5	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Phosgene	Vapor	75-44-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Phosphine	Vapor	7803-51-2	imm	imm			>0.11	0.003			
Phosphinic acid (50%)	Liquid	6303-21-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Phosphoric acid (85%)	Liquid	7664-38-2	355	>480	>480	6	0.05	0.02	<9.6	>480	6
Phosphorus oxychloride	Liquid	10025-87-3		>480	>480	6	<0.1	0.01	<4.8	>480	6
Phosphorus trichloride	Liquid	7719-12-2	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Picoline, 2-	Liquid	109-06-8	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Picoline, 3-	Liquid	108-99-6	>480	>480	>480	6	<0.024	0.024	<11.5	>480	6
Pimelic ketone	Liquid	108-94-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Polyethylene glycol dimethyl ether	Liquid	24991-55-7	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Polymethylene polyphenyle isocyanate (p-MDI)	Liquid	9016-87-9	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Potassium chromate (sat)	Liquid	7789-00-6	>480	>480	>480	6	<0.08	0.08	<38.4	>480	6
Potassium hydroxide (45%)	Liquid	1310-58-3	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Potassium hydroxide (50%)	Liquid	1310-58-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Prop-2-en-1-al	Liquid	107-02-8	51* /65	75* /101	>480	6	<0.5	0.02	105	>480	6
Prop-2-en-1-al (10 g/m <sup>2</sup> )	Liquid	107-02-8	>480	>480	>480	6	<0.04	0.04	<19.2	>480	6
Prop-2-yn-1-ol	Liquid	107-19-7	123	123	127	4	37.9	0.07			
Propan -1-ol	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propan -2-ol	Liquid	67-63-0	>480	>480	>480	6	<0.0097	0.0097	<4.7	>480	6
Propan -2-ol (70%)	Liquid	67-63-0	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Propan -2-one	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Propanol, 1-	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propanol, n-	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propargyl alcohol	Liquid	107-19-7	123	123	127	4	37.9	0.07			

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Propen 1-ol, 2-	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propenamide (50%)	Liquid	79-06-1	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Propene acid	Liquid	79-10-7	>480	>480	>480	6	<0.06	0.06	<28.8	>480	6
Propenenitrile, 2-	Liquid	107-13-1	107	108	116	3	3.7	0.0085			
Propenoic acid butyl ester, 2-	Liquid	141-32-2	>480	>480	>480	6	<0.0161	0.0161	<7.7	>480	6
Propenoic acid nitrile	Liquid	107-13-1	107	108	116	3	3.7	0.0085			
Propyl alcohol	Liquid	71-23-8	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Propyl amine, n-	Liquid	107-10-8	imm	16*/21	>480	6	0.52	0.05			
Propylene oxide, 1,2-	Liquid	75-56-9	imm*/12	13*/20	48	2	<8	0.03	1860	100	3
Pyridene, 2-fluoro-6-(trifluoromethyl)	Liquid	94239-04-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Pyridine	Liquid	110-86-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Pyroacetic ether	Liquid	67-64-1	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Pyrrolidine	Liquid	123-75-1	40*/80	45*/100	145*/185	4	4.7	0.05			
Sarin (GB), FINABEL 0.7.C	Liquid	107-44-8		>1400 <sup>8</sup>							
Sarin (GB), MIL-STD-282 (100 g/m <sup>2</sup> )	Liquid	107-44-8		>480 <sup>8</sup>							
Silane	Vapor	7803-62-5	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Silicon tetrachloride	Liquid	10026-04-7	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Sodium cyanide (45%)	Liquid	143-33-9	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Sodium cyanide (sat)	Liquid	143-33-9	>480	>480	>480	6	<0.07	0.07	<33.6	>480	6
Sodium hydroxide (50%)	Liquid	1310-73-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Sodium hypochlorite (15%)	Liquid	7681-52-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Soman (GD), FINABEL 0.7.C	Liquid	96-64-0		>1400 <sup>8</sup>							
Soman (GD), MIL-STD-282 (100 g/m <sup>2</sup> )	Liquid	96-64-0		>480 <sup>8</sup>							
Spiritus	Liquid	64-17-5	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Styrene	Liquid	100-42-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Sulfur Mustard (HD), FINABEL 0.7.C	Liquid	505-60-2		>1400 <sup>8</sup>							
Sulfur Mustard (HD), MIL-STD-282 (100 g/m <sup>2</sup> )	Liquid	505-60-2		>480 <sup>8</sup>							
Sulfur dioxide	Vapor	7446-09-5	26*/37	26*/37	>480	6	<0.5	0.1	<159	>480	6
Sulfuric acid (30%)	Liquid	7664-93-9	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Sulfuric acid (50%)	Liquid	7664-93-9	>480	>480	>480	6	<0.05	0.05	<24	>480	6



Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
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Sulfuric acid (70%)	Liquid	7664-93-9	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Sulfuric acid (>95%)	Liquid	7664-93-9	30*/40	50	50	2	na	0.05	>5000	nm	
Sulfuric acid diethyl ester	Liquid	64-67-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Sulfuric acid dimethyl ester	Liquid	77-78-1	>480	>480	>480	6	<0.09	0.09	<43.2	>480	6
Sulfuric acid fuming (20% free SO3)	Liquid	8014-95-7	14*/44	15*/59	26*/103	1	na	0.06	137/60 min	62	3
Sulfuric acid fuming (40% free SO3)	Liquid	8014-95-7	imm*/11	imm*/12	49	2	na	0.06	637/40 min	67	3
Sulfuryl chloride	Liquid	7791-25-5	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Tabun (GA), FINABEL 0.7.C	Liquid	77-81-6		>1400 <sup>8</sup>							
Tabun (GA), MIL-STD-282 (100 g/m <sup>2</sup> )	Liquid	77-81-6		>480 <sup>8</sup>							
Tetrachloro bisphenol-A, 2,2',6,6'-	Solid	79-95-8	>480	>480	>480	6	<0.1	0.1	<48	>480	6
Tetrachloro ethane, 1,1,2,2,-	Liquid	79-34-5	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Tetrachloro ethylene, 1,1,2,2-	Liquid	127-18-4	210*/391	>480	>480	6	<0.03	0.02	9.81	>480	6
Tetrachloro methane	Liquid	56-23-5	imm	imm*/11	>480	6	0.57	0.001			
Tetraethylene pentamine	Liquid	112-57-2	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Tetrahydrofuran	Liquid	109-99-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Tetramethyl ammonium hydroxide (25%)	Liquid	75-59-2	>480	>480	>480	6	<0.025	0.025	<12	>480	6
Tetramethylethylene diamine (TMEDA)	Liquid	110-18-9	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Thioalkohol	Liquid	75-08-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Thioglycolic acid	Liquid	68-11-1	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Thionyl chloride	Liquid	7719-09-7	21	21	33	2	nm	0.1	nm	47	2
Tin chloride, mono-n-butyl	Liquid	1118-46-3	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Tin chloride, tri-n-butyl	Liquid	1461-22-9		nm	>480	6	<1	0.2			
Titan(IV) chloride	Liquid	7550-45-0	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Titanium tetrachloride	Liquid	7550-45-0	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Toluene	Liquid	108-88-3	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Toluene diisocyanate, 2,4-	Liquid	584-84-9	>480	>480	>480	6	<0.0216	0.0216	<10.4	>480	6
Toluene diisocyanate, 2,4- (80%)	Liquid	584-84-9	>480	>480	>480	6	<0.0281	0.0281	<13.5	>480	6
Toluidine, o-	Liquid	95-53-4	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6
Tributyl amine (95%)	Liquid	102-82-9	>480	>480	>480	6	<0.04	0.05	<19.2	>480	6
Trichloro acetic acid (sat)	Liquid	76-03-9	>480	>480	>480	6	<0.03	0.03	<14.4	>480	6

Hazard / Chemical Name	Physical State	CAS	BT Act	BT 0.1	BT 1.0	EN	SSPR	MDPR	Cum 480	Time 150	ISO
Trichloro acetone, 1,1,3- (87.7%)	Liquid	921-03-9	431* /458	467* /476	>480	6	<0.2	0.05	<24	>480	6
Trichloro benzene, 1,2,4-	Liquid	120-82-1	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6
Trichloro ethane, 1,1,1-	Liquid	71-55-6	>480	>480	>480	6	<0.007	0.007	<3.4	>480	6
Trichloro ethane, 1,1,2-	Liquid	79-00-5	120* /173	164* /232	202* /302	4	9.1	0.01			
Trichloro ethanol, 2,2,2-	Liquid	115-20-8	>480	>480	>480	6	<0.008	0.008	<3.8	>480	6
Trichloro ethylene	Liquid	79-01-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trichloro methane	Liquid	67-66-3	imm	imm	imm		10.6	0.001			
Trichloro phenylsilane	Liquid	98-13-5	>480	>480	>480	6	<0.0001	0.0001	<0.04	>480	6
Trichloro silane	Liquid	10025-78-2		>480	>480	6	<0.0218	0.0218			
Triethyl amine	Liquid	121-44-8	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Triethylenetetramine (60%)	Liquid	112-24-3	>480	>480	>480	6	<0.005	0.005	<2.4	>480	6
Trifluoro acetic acid	Liquid	76-05-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trifluoro methansulfonic acid	Liquid	1493-13-6	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Trimethyl chinon (30 °C, molten)	Liquid	935-92-2		nm	>480	6	<1	0.05			
VX Nerve Agent, FINABEL 0.7.C	Liquid	50782-69-9		>1400 <sup>8</sup>							
VX Nerve Agent, MIL-STD-282 (100 g/m <sup>2</sup> )	Liquid	50782-69-9		>480 <sup>8</sup>							
Vanadium tetrachloride	Liquid	7632-51-1	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Vinyl acetate	Liquid	108-05-4	>480	>480	>480	6	<0.01	0.01	<4.8	>480	6
Vinyl benzol	Liquid	100-42-5	>480	>480	>480	6	<0.05	0.05	<24	>480	6
Vinyl carbinol	Liquid	107-18-6	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Vinyl chloride	Vapor	75-01-4	imm	>480	>480	6	0.02	0.001	<9.6	>480	6
Vinyl cyanide	Liquid	107-13-1	107	108	116	3	3.7	0.0085			
Vinyl ethylene (gaseous)	Vapor	106-99-0	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Vinylidene chloride	Liquid	75-35-4	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
White Liquor	Liquid	mix		>480							
White spirit	Liquid	mix	>480	>480	>480	6	<0.02	0.02	<9.6	>480	6
Xylene, mixed isomers	Liquid	1330-20-7	>480	>480	>480	6	<0.001	0.001	<0.48	>480	6

BTAct (Actual) Breakthrough time at MDPR [mins] BT0.1 Normalized breakthrough time at 0.1 µg/cm<sup>2</sup>/min [mins] BT1.0 Normalized breakthrough time at 1.0 µg/cm<sup>2</sup>/min [mins] EN Classification according to EN 14325 SSPR Steady state permeation rate [µg/cm<sup>2</sup>/min] MDPR Minimum detectable permeation rate [µg/cm<sup>2</sup>/min] CUM480 Cumulative permeation mass after 480 mins [µg/cm<sup>2</sup>] Time150 Time to reach cumulative permeation mass of 150 µg/cm<sup>2</sup> [mins] ISO Classification according to ISO 16602 CAS Chemical abstracts service registry number min Minute > Larger than

< Smaller than imm Immediate (< 10 min) nm Not tested sat Saturated solution N/A Not Applicable na Not attained GPR grade General purpose reagent grade \* Based on lowest single value 8 Actual breakthrough time; normalized breakthrough time is not available DOT5 Degradation after 5 min DOT30 Degradation after 30 min DOT60 Degradation after 60 min DOT240 Degradation after 240 min BT1383 Normalized breakthrough time at 0.1 µg /cm<sup>2</sup>/min [mins] acc. ASTM F1383

Important Note.