

DuPont Permeation Guide



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Caution:

This information is based upon technical data that DuPont believes to be reliable on the date issued. It is subject to revision as additional knowledge and experience are gained. 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.

It is the user's responsibility to determine the level of toxicity and the proper personal protective equipment needed. 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. If fabric becomes torn,

abraded or punctured, or if seams or closures fail, or if attached gloves, visors, etc. are damaged, end user should discontinue use of garment to avoid potential exposure to chemical.

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This information is not intended as a license to operate under or a recommendation to infringe any patent, trademark or technical information of DuPont or others covering any material or its use.

Warning:

- Tychem® and Tyvek® fabrics should not be used around heat, flames, sparks or in potentially flammable or explosive environments. Only Tychem® ThermoPro, Tychem® Reflector® and Tychem® TK styles 600T/601T (with aluminized outer suit) garments are designed and tested to help reduce burn injury during escape from a flash fire. Users of Tychem® ThermoPro, Tychem® Reflector® and Tychem® TK styles 600T/601T (with aluminized outer suit) garments should not knowingly enter an explosive environment.
- Tychem® garments with attached socks must be worn inside protective outer footwear and are not suitable as outer footwear. These attached socks do not have adequate durability or slip resistance to be worn as the outer foot covering.

How to Use this Permeation Guide

To Find Permeation Test Results

1. Locate the desired chemical in the Chemical Index (Appendix).

The Chemical Index is presented in two ways:

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

For each chemical, the following information is listed:

- Chemical name
- CAS number
- Chemical class and subclass number(s)
- Synonyms, if applicable

2. Using the chemical name or CAS number, locate the class and subclass (es) of the chemical in the permeation index table.
3. Using the class and subclass, go to the chemical permeation data tables to locate the chemical. The range of fabrics is listed across the top of the table. If testing was done, the permeation data is reported.

Independent Testing

All testing reported in this guide was performed by a third party laboratory.

Permeation data for industrial chemicals is obtained per ASTM F739. Normalized breakthrough times (the time at which the permeation rate exceeds $0.1 \mu\text{g}/\text{cm}^2/\text{min}$) are reported in minutes. All chemicals have been tested between approximately 20°C and 27°C unless otherwise stated. All chemicals have been tested at a concentration of greater than 95% unless otherwise stated.

Chemical warfare agents (Lewisite, Sarin, Soman, Sulfur Mustard, Tabun and VX Nerve Agent) have been tested at 22°C and 50% relative humidity per military standard MIL-STD-282. "Breakthrough time" for chemical warfare agents is defined as the time when the cumulative mass which permeated through the fabric exceeds the limit in MIL-STD-282 [either 1.25 or $4.0 \mu\text{g}/\text{cm}^2$].

What is Permeation?

Permeation is the absorption, diffusion and desorption of a chemical through a barrier material at the molecular level. Penetration, on the other hand, is the bulk passage of a chemical through a pore or opening in the barrier material.

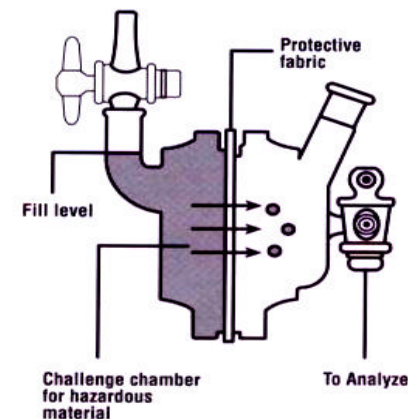
To help you understand the difference between these two mechanisms, consider this example. Have you ever opened a bottle of soda to find out that it was flat? There aren't any holes in the bottle. The liquid is still inside. Why is the soda flat? It's flat because the carbon dioxide that gives soda its fizz has permeated through the bottle over time. If you opened a fresh bottle of soda and did not replace the cap, the carbon dioxide would just escape out of the top of the bottle. That would be penetration.

Permeation tests are best suited for testing liquids and vapors.

How Permeation Tests Are Conducted

Other than for Chemical Warfare Agents, permeation tests are conducted following 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 fabric and is detected on the inside surface of the fabric, it is said to have permeated through the fabric.



ASTM F739 Test Cell

Definitions of Key Terms for ASTM F739

Breakthrough time: In permeation testing, the actual breakthrough time is the length of time it takes for a challenge chemical to permeate the fabric being tested. It is measured from the point of initial contact of the challenge chemical with the outside surface of the fabric to the time that the challenge chemical is detected on the inside of the fabric. Sensitive analytical equipment is often used to measure the amount of chemical permeating the fabric.

Normalized, or sometimes called "standardized" breakthrough time, is a measure of the elapsed time from initial contact with the challenge chemical until the chemical permeates the fabric at a rate of 0.1 $\dot{g}/\text{cm}^2/\text{min}$. This is defined in ASTM F739 test method. Normalized breakthrough times eliminate biased results due to differences in the sensitivity of the detection equipment and are thus the industry

standard measure of breakthrough time. This DuPont Permeation Guide reports normalized breakthrough times using the 0.1 $\dot{g}/\text{cm}^2/\text{min}$ criteria.

A normalized breakthrough time of >480 minutes does not always mean that there was no chemical permeation; it means that the rate of permeation did not exceed 0.1 $\dot{g}/\text{cm}^2/\text{min}$ during the 8 hour test. If the permeation rate exceeds 0.1 $\dot{g}/\text{cm}^2/\text{min}$ in the first 10 minutes of testing, DuPont chooses to report the breakthrough time as "immediate" (imm.).

PLEASE NOTE: In Europe, normalized breakthrough times are based on a permeation rate of 1.0 $\dot{g}/\text{cm}^2/\text{min}$. This is 10 times less sensitive than the basis used in North America.

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

Chemical Class & Subclass Listing*

<p>100 Carboxylic acids 102 Aliphatic and Alicyclic, Unsubstituted 103 Aliphatic and Alicyclic, Substituted 104 Aliphatic and Alicyclic, Polybasic</p> <p>110 Acid Halides, Carboxylic 111 Aliphatic and Alicyclic 112 Aromatic 113 Chloroformates</p> <p>120 Aldehydes 121 Aliphatic and Alicyclic 122 Aromatic</p> <p>130 Amides 132 Aliphatic and Alicyclic 135 Acrylamides</p> <p>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</p> <p>150 Hydroxlamines and Ketoximes</p> <p>160 Anhydrides 161 Aliphatic and Alicyclic</p> <p>210 Isocyanates 211 Aliphatic and Alicyclic 212 Aromatic</p> <p>220 Carboxylic Esters 221 Formates 222 Acetates 223 Acrylates and Methacrylates 224 Aliphatic, Others 226 Benzoates and Phthalates</p>	<p>230 Non-Carboxylic Esters 233 Carbamates and Others</p> <p>240 Ethers 241 Aliphatic and Alicyclic 245 Glycol Ethers 246 Vinylc</p> <p>260 Halogen Compounds 261 Aliphatic and Alicyclic 263 Aromatic 264 Vinylc 265 Alylic 266 Benzylic</p> <p>270 Heterocyclic Compounds 271 Nitrogen, Pyridines 274 Nitrogen, Others 275 Oxygen, Epoxides 277 Oxygen, Furans 278 Oxygen, Others</p> <p>280 Hydrazines</p> <p>290 Hydrocarbons 291 Aliphatic and Alicyclic, Saturated 292 Aromatic 293 Aromatic Polynuclear 294 Aliphatic and Alicyclic, Unsaturated 296 Polyenes</p> <p>300 Peroxides 301 Inorganic 302 Organic</p> <p>310 Hydroxylic Compounds (includes alcohols) 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</p>	<p>316 Aromatic, Phenols 318 Aromatic, Others</p> <p>330 Elements</p> <p>340 Inorganic Salts and Inorganic Salt Solutions 345 Inorganic Cyano Compounds</p> <p>350 Inorganic Gases and Vapors</p> <p>360 Inorganic Acid Halides 365 Inorganic Acid Oxides</p> <p>370 Inorganic Acids</p> <p>380 Inorganic Bases</p> <p>390 Ketones 391 Aliphatic and Alicyclic</p> <p>430 Nitriles 431 Aliphatic and Alicyclic 432 Aromatic</p> <p>440 Nitro Compounds 441 Unsubstituted 442 Substituted</p> <p>450 Nitroso Compounds</p> <p>460 Organo-Phosphorus Compounds 462 Derivatives of Phosphorus-based acids</p> <p>470 Organo-Metallic Compounds</p> <p>480 Organo-Silicon Compounds</p> <p>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</p> <p>550 Organic Salts and Organic Salt Solutions</p> <p>590 Miscellaneous (Not classified)</p>
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*Partial list based on ASTM F1186. A complete copy of ASTM F1186 may be purchased from ASTM (www.astm.org).

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

Sub-class	Chemical Name	CAS Number	Phase	Normalized Breakthrough Time (Minutes)									
				Tychem® 2000 SFR	Tychem® 2000	Tyvek® 800	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
100	Acetic acid (10%)	64-19-7	Liquid			imm							
130	Dimethyl formamide, N,N-	68-12-2	Liquid		imm		90	>480	>480	>480	>480	>480	>480
140	Diethyl amine	109-89-7	Liquid		imm		15	>480	>480	>480	>480	>480	>480
140	Ethyl ethanamine, N-	109-89-7	Liquid		imm		15	>480	>480	>480	>480	>480	>480
220	Acetic acid ethyl ester	141-78-6	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
220	Ethyl acetate	141-78-6	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
260	Dichloro methane	75-09-2	Liquid		imm		imm	imm	imm	imm	>480	>480	>480
260	Dichloro methane (10.000 ppm)	75-09-2	Vapor							52			
260	Dichloro methane (1000 ppm)	75-09-2	Vapor							>480			
260	Methyl chloride (gaseous)	74-87-3	Vapor		imm		>480	>480	>480	>480	>480	>480	>480
260	Methylene chloride	75-09-2	Liquid		imm		imm	imm	imm	imm	>480	>480	>480
260	Methylene chloride (10.000 ppm)	75-09-2	Vapor							52			
260	Methylene chloride (1000 ppm)	75-09-2	Vapor							>480			
260	Ethylene tetrachloride	127-18-4	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
260	Tetrachloro ethylene, 1,1,2,2-	127-18-4	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
270	Epoxy ethane (gaseous)	75-21-8	Vapor		imm		imm	>480	>480	126	>480	>480	>480
270	Ethylene oxide (gaseous)	75-21-8	Vapor		imm		imm	>480	>480	126	>480	>480	>480
270	Tetrahydrofuran	109-99-9	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
290	Hexane, n-	110-54-3	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
290	Methyl benzol	108-88-3	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
290	Toluene	108-88-3	Liquid		imm		imm	>480	>480	>480	>480	>480	>480
290	Butadiene, 1,3- (gaseous)	106-99-0	Vapor	imm	imm		>480	>480	>480	>480	>480	>480	>480
290	Vinyl ethylene (gaseous)	106-99-0	Vapor	imm	imm		>480	>480	>480	>480	>480	>480	>480
310	Methanol	67-56-1	Liquid		imm		>480	imm	117	117	>480	>480	>480
330	Chlorine (gaseous)	7782-50-5	Vapor		imm		>480	imm	>480	>480	>480	>480	>480
350	Ammonia (gaseous)	7664-41-7	Vapor	imm	imm		26	imm	90	20	105*/133	>480	>480
350	Chlorine (gaseous)	7782-50-5	Vapor		imm		>480	imm	>480	>480	>480	>480	>480
350	Hydrogen chloride (gaseous)	7647-01-0	Vapor		imm		>480	>480	>480	>480	>480	>480	>480
370	Hydrogen chloride (gaseous)	7647-01-0	Vapor		imm		>480	>480	>480	>480	>480	>480	>480
370	Sulfuric acid (>95%)	7664-93-9	Liquid	>480	>480		>480	>480	50	>480	>480	>480	>480
380	Ammonia (gaseous)	7664-41-7	Vapor	imm	imm		26	imm	90	20	105*/133	>480	>480
390	Acetone	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Dimethyl ketal	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Dimethyl ketone	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Ketone propane	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Methyl acetyl	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Methyl ketone	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Propan -2-one	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480
390	Pyroacetic ether	67-64-1	Liquid	imm	imm		13	462	>480	>480	>480	>480	>480

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

Sub-class	Chemical Name	CAS Number	Phase	Normalized Breakthrough Time (Minutes)									
				Tychem® 2000 SFR	Tychem® 2000	Tyvek® 800	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
430	Acetonitrile	75-05-8	Liquid	imm	imm		60	imm	>480	131	>480	>480	>480
430	Cyanomethane	75-05-8	Liquid	imm	imm		60	imm	>480	131	>480	>480	>480
430	Ethane nitrile	75-05-8	Liquid	imm	imm		60	imm	>480	131	>480	>480	>480
430	Ethyl nitrile	75-05-8	Liquid	imm	imm		60	imm	>480	131	>480	>480	>480
430	Methyl cyanide	75-05-8	Liquid	imm	imm		60	imm	>480	131	>480	>480	>480
440	Nitro benzene	98-95-3	Liquid		imm		59	>480	>480	>480	>480	>480	>480
500	Carbon disulfide	75-15-0	Liquid	imm	imm		imm	imm	>480	>480	>480	>480	>480
<p>> = greater than imm. = immediate (<10 minutes) {empty} = not tested L = Liquid G = Gas S = Solid</p> <p>* Actual breakthrough time; normalized breakthrough time is not available.</p> <p>** Solid tested, vapor phase permeation measured.</p>													

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® 10000FR	Tychem® 10000			
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			Tychem® RESPONDER® CSM		
100																				
102																				
			Acetic acid (10%)	64-19-7	Liquid					imm										
			Acetic acid (2%)	64-19-7	Liquid					imm										
			Acetic acid (30%)	64-19-7	Liquid					imm	imm	imm								
			Acetic acid (5%)	64-19-7	Liquid					imm										
			Acetic acid (>95%)	64-19-7	Liquid					imm			>480	84	>480	>480	>480	>480	>480	
			Acroleic acid	79-10-7	Liquid					imm			>480		>480	>480	>480	270	>480	
			Acrylic acid	79-10-7	Liquid					imm			>480		>480	>480	>480	270	>480	
			Butyric Acid	107-92-6	Liquid										>480					
			Ethyl hexanoic acid	149-57-5	Liquid										>480					
			Ethylene carboxylic acid	79-10-7	Liquid					imm			>480		>480	>480	>480	270	>480	
			Formic acid (30%)	64-18-6	Liquid															
			Formic acid (50%)	64-18-6	Liquid										>480	>480				
			Formic acid (88%)	64-18-6	Liquid								>480							
			Formic acid (>95%)	64-18-6	Liquid									>480	260	260	>480	>480	>480	
			Methacrylic acid	79-41-4	Liquid								81	>480	>480	>480	>480	>480	>480	
			Methyl propenoic acid, 2-	79-41-4	Liquid								81	>480	>480	>480	>480	>480	>480	
			Propanoic acid	79-09-4	Liquid										>480					
			Propene acid	79-10-7	Liquid					imm			>480		>480	>480	>480	270	>480	
103																				
			Chloro acetic acid (80%)	79-11-8	Liquid								>480	>480	>480	>480	>480	>480	>480	>480
			Glycolic acid (sat)	79-14-1	Liquid												>480	>480	>480	
			Hydroxy acetic acid (sat)	79-14-1	Liquid												>480	>480	>480	
			Mercapto acetic acid	68-11-1	Liquid								>480	>480	>480	>480	>480	>480	>480	
			Thioglycolic acid	68-11-1	Liquid								>480	>480	>480	>480	>480	>480	>480	
			Trichloro acetic acid (sat)	76-03-9	Liquid										>480	>480	>480	>480	>480	
			Trifluoro acetic acid	76-05-1	Liquid								>480		>480	>480	>480			
104																				
			Citric acid (50%)	77-92-9	Liquid								>480							
			Citric acid (sat)	77-92-9	Liquid									>480	>480					
			Ethane dioic acid (10.5%)	144-62-7	Liquid											>480	>480	>480		
			Ethane dioic acid (sat)	144-62-7	Liquid								>480	>480	>480					
			Hydroxy 1,2,3-propanetricarboxylic acid, 2- (50%)	77-92-9	Liquid								>480							
			Hydroxy 1,2,3-																	

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			propanetricarboxylic acid, 2-(sat)	77-92-9	Liquid								>480	>480			
			Oxalic acid (10.5%)	144-62-7	Liquid										>480	>480	>480
			Oxalic acid (sat)	144-62-7	Liquid							>480	>480	>480			
110																	
			Isopropyl bromoacetate (>95%)	29921-57-1	Liquid										>480		
111																	
			Acetic chloride	75-36-5	Liquid						39*/63	>480	>480	>480	>480	>480	>480
			Acetyl chloride	75-36-5	Liquid						39*/63	>480	>480	>480	>480	>480	>480
			Acryloyl Chloride	814-68-6	Liquid						imm	55	334	334			
			Chloro acetyl chloride	79-04-9	Liquid						120	77			160	160	160
			Dichloro acetyl chloride	79-36-7	Liquid								160	160	100	100	>480
			Ethanoyl chloride	75-36-5	Liquid						39*/63	>480	>480	>480	>480	>480	>480
			Perfluoro 2-propoxy propionyl fluoride	2062-98-8	Liquid										>480	>480	>480
112																	
			Benzene carbonyl chloride	98-88-4	Liquid							>480	>480	>480	>480	>480	>480
			Benzoyl chloride	98-88-4	Liquid							>480	>480	>480	>480	>480	>480
			Isophthaloyldichloride (45 °C, molten)	99-63-8	Liquid								>480	>480			
113																	
			Benzyl chloro formate	501-53-1	Liquid							>480					
			Butylchloroformate	592-34-7	Liquid									>480			
			Diphosgene	503-38-8	Liquid									>480			
			Ethylchloroformate	541-41-3	Liquid									>480			
			Methyl chloro formate	79-22-1	Liquid								204*/308	204*/308	>480	>480	>480
			Octyl chlor formiate	7452-59-7	Liquid									>480			
			Propylchloroformate	109-61-5	Liquid									>480			
120																	
121																	
			Acetaldehyde	75-07-0	Liquid							19	>480	imm	>480	>480	>480

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Acrolein	107-02-8	Liquid							25*/178	75*/101	75*/101	>480	>480	>480	
			Acrolein (10 g/m ²)	107-02-8	Liquid								>480	>480				
			Acrolein (90%)	107-02-8	Liquid						24							
			Butanal, n-	123-72-8	Liquid		imm					41		>480	>480	>480	>480	
			Butenal, 2-	123-73-9	Liquid						34			147	>480	>480	>480	
			Butyraldehyde, n-	123-72-8	Liquid		imm					41		>480	>480	>480	>480	
			Croton aldehyde	123-73-9	Liquid						34			147	>480	>480	>480	
			Ethane diol dipropoanoate, 1,2-	123-73-9	Liquid						34			147	>480	>480	>480	
			Formaldehyde (10%)	50-00-0	Liquid					imm								
			Formaldehyde (100 ppm)	50-00-0	Vapor										>480	>480	>480	
			Formaldehyde (37%)	50-00-0	Liquid						>480	>480	>480	>480				
			Formalin (10%)	50-00-0	Liquid					imm								
			Formalin (100 ppm)	50-00-0	Vapor										>480	>480	>480	
			Formalin (3.7%, 1-1.5% Methanol)	50-00-0	Liquid		>480											
			Formalin (37% (10-15% Methanol))	50-00-0	Liquid		imm				>480	>480	>480	>480	>480	>480	>480	
			Formalin (37%)	50-00-0	Liquid						>480	>480	>480	>480				
			Glutaral (5%)	111-30-8	Liquid		>480								>480	>480	>480	
			Glutaral (50%)	111-30-8	Liquid						>480		170	170	>480	>480	>480	
			Glutaraldehyde (5%)	111-30-8	Liquid		>480								>480	>480	>480	
			Glutaraldehyde (50%)	111-30-8	Liquid						>480		170	170	>480	>480	>480	
			Methyl acrolein	123-73-9	Liquid						34			147	>480	>480	>480	
			Pentanedial, 1,5- (5%)	111-30-8	Liquid		>480								>480	>480	>480	
			Pentanedial, 1,5- (50%)	111-30-8	Liquid						>480		170	170	>480	>480	>480	
			Prop-2-en-1-al	107-02-8	Liquid							25*/178	75*/101	75*/101	>480	>480	>480	
			Prop-2-en-1-al (10 g/m ²)	107-02-8	Liquid								>480	>480				

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)												
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
			Prop-2-en-1-al (90%)	107-02-8	Liquid							24						
			Propylene aldehyde	123-73-9	Liquid							34			147	>480	>480	>480
122																		
			Benzaldehyde	100-52-7	Liquid										>480			
130																		
132																		
			Cyanamide (50%)	420-04-2	Liquid										nm			
			Dimethyl acetamide, N,N-	127-19-5	Liquid	imm						96	>480	>480	>480	>480	>480	>480
			Dimethyl acetamide, N,N- (8%)	127-19-5	Liquid	>480	>480											
			Dimethyl formamide, N,N-	68-12-2	Liquid		imm					90	>480	>480	>480	>480	>480	>480
			Methyl 2-pyrrolidon, N-	872-50-4	Liquid							>480		>480	>480	>480	>480	>480
			Methyl formamide, N-	123-39-7	Liquid								>480	>480	>480			
135																		
			Acrylamide (50%)	79-06-1	Liquid							>480		>480	>480	>480	>480	>480
			Acrylicamide (50%)	79-06-1	Liquid							>480		>480	>480	>480	>480	>480
			Propenamide (50%)	79-06-1	Liquid							>480		>480	>480	>480	>480	>480
140																		
141																		
			Amino ethanol, 2-	141-43-5	Liquid							>480	>480	>480	>480	>480	>480	>480
			Amino ethylpiperazine	140-31-8	Liquid							>480	>480	>480	>480	>480	>480	>480
			Amino propane, 2-	75-31-0	Liquid							15	>480	>480	>480	>480	>480	>480
			Butyl amine	109-73-9	Liquid							>480	200	200	>480	>480	>480	>480
			Diisopropylethylamine (DIPEA)	7087-68-5	Liquid							>480	>480					
			Ethanol amine	141-43-5	Liquid							>480	>480	>480	>480	>480	>480	>480
			Ethyl amine (15 °C, liquid)	75-04-7	Liquid										361	361	>480	
			Isopropyl amine	75-31-0	Liquid							15	>480	>480	>480	>480	>480	>480
			Methyl amine (40%)	74-89-5	Liquid							140			261	261	261	
			Methyl amine (50%)	74-89-5	Liquid										232	232	232	
			Methyl amine (gaseous)	74-89-5	Vapor								>480	>480	105	105	>480	

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Propyl amine, n-	107-10-8	Liquid							100	16*/21	16*/21				
			Tetraethylene pentamine	112-57-2	Liquid							>480	>480	>480	>480	>480	>480	
			Triethylenetetramine (60%)	112-24-3	Liquid							>480	>480	>480	>480	>480	>480	
142																		
			Amino ethylethanolamine	111-41-1	Liquid							imm	>480	>480	>480	>480	>480	
			Amino ethylethanolamine (60%)	111-41-1	Liquid							>480	>480	>480	>480	>480	>480	
			Diethanolamine	111-42-2	Liquid							>480			>480			
			Diethyl amine	109-89-7	Liquid							15	>480	>480	>480	>480	>480	
			Dimethyl amine	124-40-3	Vapor								>480	>480	>480		>480	
			Ethyl ethanamine, N-	109-89-7	Liquid							15	>480	>480	>480	>480	>480	
143																		
			Amino 2-methylpropane, 2-	75-64-9	Liquid										>480	>480	>480	
			Butyl amine, tert-	75-64-9	Liquid										>480	>480	>480	
			Diethyl ethanamine, N,N-	121-44-8	Liquid							12*/22		>480	>480	>480	>480	
			Tributyl amine (95%)	102-82-9	Liquid								>480	>480	>480			
			Triethyl amine	121-44-8	Liquid							12*/22		>480	>480	>480	>480	
			Trimethyl amine	75-50-3	Vapor												>480	
			Trimethyl aminomethane	75-64-9	Liquid										>480	>480	>480	
			Tripropyl amine	102-69-2	Liquid										>480	>480	>480	
145																		
			Amino 3,4-dichlorobenzene, 1-	95-76-1	Solid										>480	>480	>480	
			Amino 3,4-dichlorobenzene, 1- (70 °C, molten)	95-76-1	Liquid							imm			216*/284	216*/284	216*/284	
			Amino benzene	62-53-3	Liquid							>480	320	>480	>480	>480	>480	
			Amino diphenyl, 4- (1 mg/ml in Methanol)	92-67-1	Liquid							>480	>480	>480	>480		>480	
			Anilin, 4-Trifluoromethoxy-	461-82-5	Liquid									>480	>480			
			Aniline	62-53-3	Liquid							>480	320	>480	>480	>480	>480	
			Benzenamine	62-53-3	Liquid							>480	320	>480	>480	>480	>480	

Chemical Permeation Data Tables

C	S	C	C	C	Breakthrough Time (Minutes)																
					Chemical Name	CAS	P	Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000	
					Benzidine (25% in Methanol)	92-87-5	Liquid											>480	>480	>480	
					Benzidine (75% in Methanol)	92-87-5	Liquid													>480	
					Biphenyl 4,4'-diamine, 1,1'- (25% in Methanol)	92-87-5	Liquid											>480	>480	>480	
					Biphenyl 4,4'-diamine, 1,1'- (75% in Methanol)	92-87-5	Liquid													>480	
					Chloro aniline, p-	106-47-8	Solid											>480	>480	>480	
					Chloro aniline, p- (70 °C, molten)	106-47-8	Liquid						imm		imm	imm		272*/323	272*/323	272*/323	
					Chloro benzenamine, 4-	106-47-8	Solid											>480	>480	>480	
					Chloro benzenamine, 4- (70 °C, molten)	106-47-8	Liquid						imm		imm	imm		272*/323	272*/323	272*/323	
					Diaminobiphenyl, 4,4'- (25% in Methanol)	92-87-5	Liquid											>480	>480	>480	
					Diaminobiphenyl, 4,4'- (75% in Methanol)	92-87-5	Liquid													>480	
					Diaminodiphenyl, p- (25% in Methanol)	92-87-5	Liquid											>480	>480	>480	
					Diaminodiphenyl, p- (75% in Methanol)	92-87-5	Liquid													>480	
					Diaminodiphenylmethane, 4,4'-	101-77-9	Liquid													>480	
					Diaminodiphenylmethane, 4,4'- (15% in Methyl Ethyl Ketone)	101-77-9	Liquid											>480	>480	>480	
					Dichloro aniline, 3,4-	95-76-1	Solid											>480	>480	>480	
					Dichloro aniline, 3,4- (70 °C, molten)	95-76-1	Liquid						imm				216*/284	216*/284	216*/284		
					Diethyl m-toluidine, N,N-	91-67-8	Liquid						>480				>480				
					Methyl aniline, o-	95-53-4	Liquid						>480		>480	>480	>480	>480	>480	>480	
					Methylene dianiline	101-77-9	Liquid													>480	
					Methylene dianiline (15% in Methyl Ethyl Ketone)	101-77-9	Liquid											>480	>480	>480	
					Phenyl amine	62-53-3	Liquid					imm	>480	320	>480	>480	>480	>480	>480	>480	
					Toluidine, m-	108-44-1	Liquid						>480				>480				
					Toluidine, o-	95-53-4	Liquid						>480		>480	>480	>480	>480	>480	>480	
					Xylidine, 2,4-	95-68-1	Liquid								>480						
146																					
					Benzyl methylamine, N-	103-67-3	Liquid												>480	>480	

Chemical Permeation Data Tables

C	S	Sub-Class	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Diethyl aniline crude	91-66-7	Liquid								>480			>480		
			Diethyl aniline, N,N-	91-66-7	Liquid								>480				>480	>480
			Dimethyl aniline, N,N-	121-69-7	Liquid								imm	>480	>480	>480	>480	>480
			Dimethyl phenylamine, N,N-	121-69-7	Liquid								imm	>480	>480	>480	>480	>480
			Methyl benzylamine, N-	103-67-3	Liquid									>480	>480			
148																		
			Amino ethylethanolamine	111-41-1	Liquid								imm	>480	>480	>480	>480	>480
			Amino ethylethanolamine (60%)	111-41-1	Liquid								>480	>480	>480	>480	>480	>480
			Amino ethylpiperazine	140-31-8	Liquid								>480	>480	>480	>480	>480	>480
			Diaminoethane, 1,2-	107-15-3	Liquid		>480						>480	>480	>480	>480	>480	>480
			Diethylene triamine	111-40-0	Liquid								imm*/321	>480	>480	>480	>480	>480
			Dytek® A	15520-10-2	Liquid								>480	>480	>480			
			Ethylene diamine	107-15-3	Liquid		>480						>480	>480	>480	>480	>480	>480
			Hexamethylene diamine (45 °C, molten)	124-09-4	Liquid									>480	>480	>480	>480	>480
			Hexamethylene diamine (50 °C, molten)	124-09-4	Liquid								80	45		80		
			Methylen Isocyclohexylamine, 4,4- (40 °C)	1761-71-3	Liquid										>480			
			Methylen Isocyclohexylamine, 4,4- (50 °C, molten)	1761-71-3	Liquid								>480					
			Tetraethylene pentamine	112-57-2	Liquid								>480	>480	>480	>480	>480	>480
			Tetramethylethylene diamine (TMEDA)	110-18-9	Liquid								>480	>480				
			Tributyl amine (95%)	102-82-9	Liquid								>480	>480	>480			
			Triethylenetetramine (60%)	112-24-3	Liquid								>480	>480	>480	>480	>480	>480
149																		
			Benzidine (25% in Methanol)	92-87-5	Liquid											>480	>480	>480
			Benzidine (75% in Methanol)	92-87-5	Liquid													>480
			Biphenyl 4,4'-diamine, 1,1'- (25% in Methanol)	92-87-5	Liquid											>480	>480	>480

Chemical Permeation Data Tables

C	S	C	C	C	C	C	Breakthrough Time (Minutes)																												
							Chemical Name	CAS	P	h	a	s	e	Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000									
	S	C	C	C	C	C	Biphenyl 4,4'-diamine, 1,1'- (75% in Methanol)	92-87-5	Liquid														>480												
							Diaminobiphenyl, 4,4'- (25% in Methanol)	92-87-5	Liquid																			>480	>480	>480					
							Diaminobiphenyl, 4,4'- (75% in Methanol)	92-87-5	Liquid																					>480					
							Diaminodiphenyl, p- (25% in Methanol)	92-87-5	Liquid																				>480	>480	>480				
							Diaminodiphenyl, p- (75% in Methanol)	92-87-5	Liquid																					>480					
							Diaminodiphenylmethane, 4,4'-	101-77-9	Liquid																						>480				
							Diaminodiphenylmethane, 4,4'- (15% in Methyl Ethyl Ketone)	101-77-9	Liquid																				>480	>480	>480				
							Dichloro -4,4'-methylenedianiline, 2,2'- (sat in Methanol)	101-14-4	Liquid														>480						>480	>480	>480				
							Methylene bis(2-Chloroaniline), 4,4- (sat in Methanol)	101-14-4	Liquid														>480						>480	>480	>480				
							Methylene dianiline	101-77-9	Liquid																						>480				
							Methylene dianiline (15% in Methyl Ethyl Ketone)	101-77-9	Liquid																				>480	>480	>480				
150																																			
	S	C	C	C	C	C	150																												
							Butanone oxime, 2-	96-29-7	Liquid																	>480	>480	>480	>480	>480	>480				
							Methyl ethyl ketoxime	96-29-7	Liquid																			>480	>480	>480	>480				
Tetraethyl ammonium hydroxide (35%)	77-98-5	Liquid																				>480													
160																																			
	S	C	C	C	C	C	161																												
							Acetic anhydride	108-24-7	Liquid																				12*/48	>480	>480	>480	>480	>480	>480
Maleic anhydride (66 °C, molten)	108-31-6	Liquid																							13			22							
210																																			
	S	C	C	C	C	C	211																												
							Cyclo hexyl isocyanate	3173-53-3	Liquid																				36*/54				36*/54		
							Hexamethylene diisocyanate	822-06-0	Liquid																					>480	>480	>480	>480	>480	>480
Methyl isocyanate	624-83-9	Liquid																							imm	12	imm	imm	>480	>480	>480				
212																																			

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Diphenyl methane diisocyanate, 4,4'-	101-68-8	Solid											>480	>480	>480
			Diphenyl methane diisocyanate, 4,4'- (50 °C, molten)	101-68-8	Liquid		>480					>480	>480	>480	>480	>480	>480	>480
			Methylene diphenyl diisocyanate, 4,4'-	101-68-8	Solid											>480	>480	>480
			Methylene diphenyl diisocyanate, 4,4'- (50 °C, molten)	101-68-8	Liquid		>480					>480	>480	>480	>480	>480	>480	>480
			Paraphenylene diisocyanate (PPDI) crude	104-49-4	Liquid											>480	>480	>480
			Polymethylene polyphenyle isocyanate (p-MDI)	9016-87-9	Liquid		>480					>480	>480	>480	>480	>480	>480	>480
			Toluene diisocyanate, 1,3-	26471-62-5	Liquid											>480	>480	>480
			Toluene diisocyanate, 2,4-	584-84-9	Liquid		imm					>480	>480	>480	>480	>480	>480	>480
			Toluene diisocyanate, 2,4-(80%)	584-84-9	Liquid		60					>480	>480	>480	>480	>480	>480	>480
220																		
			Dimethylmalonate	108-59-8	Vapor											>480		
221																		
			Butylchloroformate	592-34-7	Liquid											>480		
			Diphosgene	503-38-8	Liquid											>480		
			Ethylchloroformate	541-41-3	Liquid											>480		
			Hexyl chloro formate, 2-	6092-54-2	Liquid											>480		
			Methyl formate	107-31-3	Liquid												>480	
			Octyl chlor formiate	7452-59-7	Liquid											>480		
			Phenyl chlor formiate	1885-14-9	Liquid											>480		
			Propylchloroformate	109-61-5	Liquid											>480		
222																		
			Acetic acid ethenyl ester	108-05-4	Liquid							24	>480	>480	>480	>480	>480	>480
			Acetic acid ethyl ester	141-78-6	Liquid		imm					imm	>480	>480	>480	>480	>480	>480

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Acetic acid pentyl ester	628-63-7	Liquid							>480	>480	>480	>480	>480	>480
			Amyl acetate, n-	628-63-7	Liquid							>480	>480	>480	>480	>480	>480
			Amyl ester acetic acid	628-63-7	Liquid							>480	>480	>480	>480	>480	>480
			Butyl acetate, n-	123-86-4	Liquid							>480	>480	>480	>480	>480	>480
			Chloroacetic ethylester	105-39-5	Liquid								>480				
			Chloroacetic ethylester (75% in Ethanol)	105-39-5	Liquid												
			Ethyl acetate	141-78-6	Liquid		imm				imm	>480	>480	>480	>480	>480	>480
			Isopropyl bromoacetate (>95%)	29921-57-1	Liquid								>480				
			Methyl -2-pyridyl acetate	1658-42-0	Liquid								>480				
			Pentyl acetate	628-63-7	Liquid							>480	>480	>480	>480	>480	>480
			Vinyl acetate	108-05-4	Liquid						24	>480	>480	>480	>480	>480	>480
223																	
			Acrylic acid ethyl ester	140-88-5	Liquid									imm*/162	14	14	>480
			Acrylic acid n-butyl ester	141-32-2	Liquid						>480		>480	>480	51	51	>480
			Butyl acrylate, n-	141-32-2	Liquid						>480		>480	>480	51	51	>480
			Ethyl acrylate	140-88-5	Liquid									imm*/162	14	14	>480
			Ethylene glycol acrylate	818-61-1	Liquid						>480						
			Methyl 2-methyl-2-propenoate	80-62-6	Liquid						23		imm*/53	imm*/53	>480	>480	>480
			Methyl acrylate	96-33-3	Liquid								>480	>480	>480	>480	>480
			Methyl methacrylate	80-62-6	Liquid						23		imm*/53	imm*/53	>480	>480	>480
			Propenoic acid butyl ester, 2-	141-32-2	Liquid						>480		>480	>480	51	51	>480
224																	
			Dibutyl sebacate	109-43-3	Liquid									nm	nm		
			Dimethyl fumarate (27 °C, solid)	624-49-7	Solid									nm			
				624-49-													

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Dimethyl fumarate (37 °C, solid)	7	Solid										nm		
			Dimethyl maleate	624-48-6	Liquid							>480	>480			>480	
			Dimethylmalonate	108-59-8	Vapor										>480		
226																	
			DEHP	117-81-7	Liquid								>480			>480	>480
			Dibutyl 1,2-benzenedicarboxylate	84-74-2	Liquid									nm	nm		
			Dibutyl phthalate	84-74-2	Liquid									nm	nm		
			Diethyl hexyl phthalate	117-81-7	Liquid								>480			>480	>480
			Methyl salicylate	119-36-8	Liquid								>480			>480	
230																	
233																	
			Methomyl (29%)	16752-77-5	Liquid											>480	>480
240																	
241																	
			Butyl ether, n-	142-96-1	Liquid								117	>480	223*/285	>480	>480
			Chloro methyl methyl ether	107-30-2	Liquid									imm*/37	imm*/37	>480	>480
			Dichloro ethyl ether	111-44-4	Liquid								>480	>480	>480	>480	>480
			Diethyl ether	60-29-7	Liquid								imm	>480	>480	>480	>480
			Dimethyl ether	115-10-6	Vapor												>480
			Ethyl ether	60-29-7	Liquid								imm	>480	>480	>480	>480
			Methoxy 2-methylpropane, 2-	1634-04-4	Liquid								>480	>480	>480	>480	>480
			Methoxy chloromethane	107-30-2	Liquid									imm*/37	imm*/37	>480	>480
			Methyl tert-butyl ether	1634-04-4	Liquid								>480	>480	>480	>480	>480
			Perfluoro 2-propoxy propionyl fluoride	2062-98-8	Liquid											>480	>480
245																	
			2-(2-Butoxyethoxy) ethanol	112-34-5	Liquid										>480	>480	
				111-90-													

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			2-(2-Ethoxyethoxy) ethanol	0	Liquid							>480			>480			
			Acetic acid 2 ethoxy ethyl ester	111-15-9	Liquid							116*/238	>480	>480	>480	>480	>480	
			Acetic acid 2 methoxy ethyl ester	110-49-6	Liquid							>480	>480	>480	>480	>480	>480	
			Butoxy ethanol, 2-	111-76-2	Liquid							>480		>480	>480			
			Cellosolve acetate	110-80-5	Liquid							>480	>480	>480	>480	>480	>480	
			Diethylene glycol monobutyl ether	112-34-5	Liquid									>480	>480			
			Ethoxy ethanol, 2-	110-80-5	Liquid							>480	>480	>480	>480	>480	>480	
			Ethoxy ethylacetat	111-15-9	Liquid							116*/238	>480	>480	>480	>480	>480	
			Ethyl Cellosolve®	110-80-5	Liquid							>480	>480	>480	>480	>480	>480	
			Ethyl glycol acetate	111-15-9	Liquid							116*/238	>480	>480	>480	>480	>480	
			Ethylene glycol mono ethyl ether acetate	111-15-9	Liquid							116*/238	>480	>480	>480	>480	>480	
			Ethylene glycol monobutyl ether	111-76-2	Liquid							>480		>480	>480			
			Ethylene glycol monoethyl ether	110-80-5	Liquid							>480	>480	>480	>480	>480	>480	
			Ethylene glycol monomethyl ether	109-86-4	Liquid							>480	405	>480	>480	>480	>480	
			Ethylene glycol monomethyl ether acetate	110-49-6	Liquid							>480	>480	>480	>480	>480	>480	
			Methoxy ethanol, 2	109-86-4	Liquid							>480	405	>480	>480	>480	>480	
			Methoxy ethylacetate, 2-	110-49-6	Liquid							>480	>480	>480	>480	>480	>480	
			Polyethylene glycol dimethyl ether	24991-55-7	Liquid									>480				
260																		
			Butylchloroformate	592-34-7	Liquid										>480			
			Diphosgene	503-38-8	Liquid										>480			
			Ethylchloroformate	541-41-3	Liquid										>480			
				29921-														

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Isopropyl bromoacetate (>95%)	57-1	Liquid										>480			
			Propylchloroformate	109-61-5	Liquid										>480			
261																		
			Bromo methane	74-83-9	Vapor										>480	>480	>480	
			Carbon tetrachloride	56-23-5	Liquid								>480	imm*/11	imm*/11	>480	>480	
			Carbon tetrachloride (1000 ppm)	56-23-5	Vapor										>480			
			Carbon tetrafluoride	75-73-0	Vapor										>480	>480	>480	
			Chlor trinitromethan	76-06-2	Liquid								>480	>480				
			Chlordane (44%)	57-74-9	Liquid								>480					
			Chlordane (60-75%)	57-74-9	Liquid										>480	>480	>480	
			Chloro 2,3-epoxy propane, 1-	106-89-8	Liquid							15	36*/67	395	395	>480	>480	
			Chloro ethanol, 2-	107-07-3	Liquid										>480	>480	>480	
			Chloro form	67-66-3	Liquid										imm	imm	>480	
			Chloro form (1000 ppm)	67-66-3	Vapor												>480	
			Chloro picrin	76-06-2	Liquid										>480	>480		
			Chloroform	67-66-3	Liquid										imm	imm	>480	
			Diamino sulfo chloride	13360-57-1	Liquid											>480		
			Dibromo -3-chloropropane, 1,2-	96-12-8	Liquid										>480			
			Dibromoethane, 1,2-	106-93-4	Liquid										>480	144*/288	144*/288	
			Dichlorethane, 1,2.-	107-06-2	Liquid										imm	>480	93	
			Dichloro -2-propanone, 1,3- (45 °C, molten)	534-07-6	Liquid											>480	>480	
			Dichloro -2-propanone, 1,3- (95% at 40 °C, molten)	534-07-6	Liquid													
			Dichloro acetone, 1,3- (45 °C, molten)	534-07-6	Liquid											>480	>480	
			Dichloro acetone, 1,3- (95% at 40 °C, molten)	534-07-6	Liquid													
			Dichloro ethyl ether	111-44-4	Liquid											>480	>480	
			Dichloro methane	75-09-2	Liquid										imm	imm	>480	
			Dichloro methane (10.000 ppm)	75-09-2	Vapor											52		
			Dichloro methane (1000 ppm)	75-09-2	Vapor											>480		
			Dichloro propene, 1,3- (95%)	542-75-6	Liquid												>480	
			Dichloro propene, 2,3-	78-88-6	Liquid											280	imm*/25	

Chemical Permeation Data Tables

C	S	Sub - C	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Diiodo-1,1,2,2-tetrafluorobutane, 1,4-	755-95-3	Liquid										>480	>480	>480
			Epichlorohydrin	106-89-8	Liquid						15	36*/67	395	395	>480	>480	>480
			Ethane trichloride	79-00-5	Liquid								164*/232	164*/232	>480	>480	>480
			Ethyl chloride	75-00-3	Vapor												>480
			Ethylene chlorohydrin	107-07-3	Liquid		imm					>480	>480	>480	>480	>480	>480
			Ethylene dibromide	106-93-4	Liquid							>480	144*/288	144*/288	>480	>480	>480
			Ethylene dichloride	107-06-2	Liquid					imm	>480	93	93	>480	>480	>480	>480
			Glycol chlorohydrin	107-07-3	Liquid		imm					>480	>480	>480	>480	>480	>480
			Hexachloro cyclohexane, 1,2,3,4,5,6- (sat in Acetone)	58-89-9	Liquid										>480	>480	>480
			Hexachloro cyclohexane, 1,2,3,4,5,6- (sat in Methanol)	58-89-9	Liquid												>480
			Hexafluoro ethane	76-16-4	Vapor										>480	>480	>480
			Hexafluoro isobutylene	382-10-5	Vapor										>480	>480	>480
			Iodomethane	74-88-4	Liquid						imm		296	296	>480	>480	>480
			Lindane (sat in Acetone)	58-89-9	Liquid										>480	>480	>480
			Lindane (sat in Methanol)	58-89-9	Liquid												>480
			Methyl bromide	74-83-9	Vapor						>480				>480	>480	>480
			Methyl chloride (-70 °C, liquid)	74-87-3	Liquid												>180
			Methyl chloride (gaseous)	74-87-3	Vapor		imm				>480	>480	>480	>480	>480	>480	>480
			Methyl chloroform	71-55-6	Liquid							>480	>480		>480	>480	>480
			Methyl fluoride	593-53-3	Vapor										>480	>480	>480
			Methyl iodide	74-88-4	Liquid						imm		296	296	>480	>480	>480
			Methyl trichloromethane	71-55-6	Liquid							>480	>480		>480	>480	>480
			Methylene bromide	74-95-3	Liquid							40	imm	imm			
			Methylene chloride	75-09-2	Liquid		imm				imm	imm	imm	imm	>480	>480	>480
			Methylene chloride (10.000 ppm)	75-09-2	Vapor									52			
			Methylene chloride (1000 ppm)	75-09-2	Vapor									>480			
			Nitro chlormethan	76-06-2	Liquid								>480	>480			
			Norflurane	811-97-2	Vapor						>480	>480		>480	>480	>480	>480
			Perfluoro 2-propoxy propionyl fluoride	2062-98-8	Liquid										>480	>480	>480

Chemical Permeation Data Tables

C l a s s	S u b - C l a s s	Chemical Name	CAS	P h a s e	Breakthrough Time (Minutes)												
					Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
		Perfluoroethane	76-16-4	Vapor											>480	>480	>480
		Propyl bromide, n-	106-94-5	Liquid							12	>480		>480	12		
		Propylene dichloride	78-87-5	Liquid											>480	>480	>480
		Tetrachloro ethane, 1,1,2,2,-	79-34-5	Liquid							25	>480	>480	>480	>480	>480	>480
		Tetrachloro methane	56-23-5	Liquid								>480	imm*/11	imm*/11	>480	>480	>480
		Tetrachloro methane (1000 ppm)	56-23-5	Vapor										>480			
		Tetrafluoroethane, 1,1,1,2-	811-97-2	Vapor							>480	>480		>480	>480	>480	>480
		Tetrafluoromethane	75-73-0	Vapor											>480	>480	>480
		Trichloro 1,2,2-trifluoroethane, 1,1,2-	76-13-1	Liquid								>480			>480	>480	>480
		Trichloro acetone, 1,1,3- (87.7%)	921-03-9	Liquid									467*/476	467*/476			
		Trichloro ethane, 1,1,1,-	71-55-6	Liquid								>480	>480		>480	>480	>480
		Trichloro ethane, 1,1,2,-	79-00-5	Liquid									164*/232	164*/232	>480	>480	>480
		Trichloro methane	67-66-3	Liquid		imm					imm	imm	imm	imm	>480	>480	>480
		Trichloro methane (1000 ppm)	67-66-3	Vapor										>480			
		Trifluoro 2-(trifluoromethyl) propene, 3,3,3-	382-10-5	Vapor											>480	>480	>480
		Trifluoro acetic acid	76-05-1	Liquid							>480		>480	>480	>480		>480
		Trifluoro methane	75-46-7	Vapor											>480	>480	>480
263																	
		Amino 3,4-dichlorobenzene, 1-	95-76-1	Solid											>480	>480	>480
		Amino 3,4-dichlorobenzene, 1- (70 °C, molten)	95-76-1	Liquid							imm				216*/284	216*/284	216*/284
		Benzo trichloride	98-07-7	Liquid								>480					
		Bromo 4-fluorobenzene, 1-	460-00-4	Liquid								>480	>480	>480	>480	>480	>480
		Bromo fluorobenzene, 4-	460-00-4	Liquid								>480	>480	>480	>480	>480	>480
		Chloro 1-methylbenzene, 2-	95-49-8	Liquid							13	>480	>480	>480	>480	>480	>480
		Chloro 2-nitrobenzene, 1-	88-73-3	Solid			15										
		Chloro 2-nitrobenzene, 1- (35-40 ° C, molten)	88-73-3	Liquid									>480	>480			
		Chloro benzene	108-90-7	Liquid								63	>480	>480	>480	>480	>480
		Chloro benzo trichloride, 4-	5216-25-1	Liquid								>480					
		Chloro benzotrifluoride, 4-	98-56-6	Liquid								460					
		Chloro phenol, p- (sat in	106-48-														

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Methanol)	9	Liquid										>480	>480	>480
			Chloro toluene, o-	95-49-8	Liquid					13	>480	>480	>480	>480	>480	>480	>480
			Cyanide chloride (20% in Toluene)	108-77-0	Liquid										>480	>480	>480
			Dichlorbenzen, 1,2-	95-50-1	Liquid					76	>480		>480	>480	>480	>480	>480
			Dichlorbenzen, 1,3-	541-73-1	Liquid					45	>480	>480	>480	>480	>480	>480	>480
			Dichlorbenzen, 1,4- (50% in Ethanol)	106-46-7	Liquid					>480	131		>480	>480	>480	>480	>480
			Dichloro aniline, 3,4-	95-76-1	Solid									>480	>480	>480	
			Dichloro aniline, 3,4- (70 °C, molten)	95-76-1	Liquid					imm				216*/284	216*/284	216*/284	
			Fluorobenzene	462-06-6	Liquid					imm	>480	>480	>480	>480	>480	>480	
			Hydroxy chlorobenzene (sat in Methanol)	106-48-9	Liquid									>480	>480	>480	
			Nitro chlorobenzene, p-	100-00-5	Solid		imm										
			PCB (50% in Trichlorbenzene)	mix	Liquid									>480	>480	>480	
			PCB 1254 (50% in Mineral Oil)	11097-69-1	Liquid					>480				>480			
			PCB 1254 (90%)	11097-69-1	Liquid					>480							
			PCB in transformer oil (mix)	mix	Liquid						>480	>480	>480				
			Phenyl chloride	108-90-7	Liquid						63	>480	>480	>480	>480	>480	>480
			Tetrachloro bisphenol-A, 2,2', 6,6'-	79-95-8	Solid							>480	>480				
			Trichloro 1,3,5-triazine, 2,4,6- (20% in Toluene)	108-77-0	Liquid									>480	>480	>480	
			Trichloro benzene, 1,2,4-	120-82-1	Liquid		imm			87	>480	>480	>480	>480	>480	>480	
264																	
			Chloro acrylonitrile, 2-	920-37-6	Liquid						146	>480	>480	>480			
			Chloro ethene	75-01-4	Vapor					>480	>480	>480	>480	>480	>480	>480	>480
			Dichloro ethylene, 1,1-	75-35-4	Liquid						170	>480	>480	>480	>480	>480	>480
			Ethylene tetrachloride	127-18-4	Liquid		imm			imm	>480	>480	>480	>480	>480	>480	>480
			Ethylene trichloride	79-01-6	Liquid					imm	>480	>480	>480	>480	>480	>480	>480
			Hexachloro butadiene	87-68-3	Liquid									>480	>480	>480	
			Tetrachloro ethylene, 1,1,2,2-	127-18-4	Liquid		imm			imm	>480	>480	>480	>480	>480	>480	>480

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Trichloro ethylene	79-01-6	Liquid							imm	>480	>480	>480	>480	>480	>480
			Vinyl chloride	75-01-4	Vapor							>480	>480	>480	>480	>480	>480	>480
			Vinylidene chloride	75-35-4	Liquid							170	>480	>480	>480	>480	>480	>480
265																		
			Allyl chloride	107-05-1	Liquid							12	381*/447	381*/447	>480	>480	>480	>480
			Chlor allylene	107-05-1	Liquid							12	381*/447	381*/447	>480	>480	>480	>480
			Chloro prene, 3-	107-05-1	Liquid							12	381*/447	381*/447	>480	>480	>480	>480
266																		
			Benzyl chloride	100-44-7	Liquid							>480	>480	>480	>480	>480	>480	>480
			Chloro toluene, alpha-	100-44-7	Liquid							>480	>480	>480	>480	>480	>480	>480
270																		
270																		
			2-Methyl-4-isothiazolin-3-one (20%)	2682-20-4	Liquid		>480					>480		>480				
			Benzisothiazol, 1,2- (20%)	2634-33-5	Liquid		>480					>480		>480				
271																		
			Amino pyridine, 2- (sat)	504-29-0	Liquid							>480			>480			
			Methyl pyridine, 2-	109-06-8	Liquid							>480	>480	>480	>480	>480	>480	>480
			Methyl pyridine, 3-	108-99-6	Liquid							>480	>480	>480	>480	>480	>480	>480
			Nicotine	54-11-5	Liquid							>480	>480	>480	>480	>480	>480	>480
			Nicotine (9 mg/ml)	54-11-5	Liquid		>480	>480										
			Picoline, 2-	109-06-8	Liquid							>480	>480	>480	>480	>480	>480	>480
			Picoline, 3-	108-99-6	Liquid							>480	>480	>480	>480	>480	>480	>480
			Pyridene, 2-fluoro-6-(trifluoromethyl)	94239-04-0	Liquid							>480	>480					
			Pyridine	110-86-1	Liquid						31	>480	>480	>480	>480	>480	>480	>480
			Vinyl pyridine, 4-	100-43-6	Liquid						15				15			
274																		
			2-Methyl-4-isothiazolin-3-one (20%)	2682-20-4	Liquid		>480					>480		>480				

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)												
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
			Amino ethylpiperazine	140-31-8	Liquid							>480	>480	>480	>480	>480	>480	>480
			Aziridine	151-56-4	Liquid										59	59	>480	
			Azolidine	123-75-1	Liquid							342	45*/100	45*/100	413	413	413	
			Benzisothiazol, 1,2- (20%)	2634-33-5	Liquid		>480					>480		>480				
			Cyanide chloride (20% in Toluene)	108-77-0	Liquid										>480	>480	>480	
			Dichloro -6-isopropyl-S-triazine, 2,4- (22% in Toluene)	30894-74-7	Liquid										>480	>480	>480	
			Diethylene imide oxide	110-91-8	Liquid						158				>480	>480	>480	
			Ethylene imine	151-56-4	Liquid										59	59	>480	
			Methyl imidazole, 1-	616-47-7	Liquid									>480				
			Morpholine	110-91-8	Liquid						158				>480	>480	>480	
			N-Methylmorpholine (NMM)	109-02-4	Liquid							>480	>480					
			Propylene imine (90%)	75-55-8	Liquid										150	150	150	
			Pyrrolidine	123-75-1	Liquid							342	45*/100	45*/100	413	413	413	
			Thiazol, 1,3-	288-47-1	Liquid									>480				
			Trichloro 1,3,5-triazine, 2,4,6- (20% in Toluene)	108-77-0	Liquid										>480	>480	>480	
275																		
			Bis (4-(2,3-epoxypropoxy)phenyl) propane	1675-54-3	Liquid								>480	>480	>480	>480	>480	
			Bis (4-(2,3-epoxypropoxy)phenyl) propane (80%)	1675-54-3	Liquid							>480						
			Bis phenol A diglycidyl ether	1675-54-3	Liquid								>480	>480	>480	>480	>480	
			Bis phenol A diglycidyl ether (80%)	1675-54-3	Liquid							>480						
			Chloro 2,3-epoxy propane, 1-	106-89-8	Liquid						15	36*/67	395	395	>480	>480	>480	
			Epichlorohydrin	106-89-8	Liquid						15	36*/67	395	395	>480	>480	>480	
			Epoxy ethane (-70 °C, liquid)	75-21-8	Liquid													>180
			Epoxy ethane (0 °C, liquid)	75-21-8	Liquid										>480	>480	>480	

Chemical Permeation Data Tables

C	S	C	C	C	P	Breakthrough Time (Minutes)										Tychem® 10000FR	Tychem® 10000					
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			Tychem® RESPONDER® CSM				
					Vapor	Epoxy ethane (10% in HCFC)	75-21-8												>480			
						Liquid	Epoxy ethane (11 °C, liquid)	75-21-8							18							
						Vapor	Epoxy ethane (gaseous)	75-21-8			imm					imm	>480	>480	126	>480	>480	>480
						Liquid	Epoxy propane, 1,2-	75-56-9									47	13*/20	43	>480	>480	>480
						Liquid	Ethylene oxide (-70 °C, liquid)	75-21-8														>180
						Liquid	Ethylene oxide (0 °C, liquid)	75-21-8												>480	>480	>480
						Vapor	Ethylene oxide (10% in HCFC)	75-21-8														>480
						Liquid	Ethylene oxide (11 °C, liquid)	75-21-8										18				
						Vapor	Ethylene oxide (gaseous)	75-21-8			imm					imm	>480	>480	126	>480	>480	>480
						Liquid	Isopropylidenediphenol diglycidyl ether, 4,4'-	1675-54-3											>480	>480	>480	>480
						Liquid	Isopropylidenediphenol diglycidyl ether, 4,4'- (80%)	1675-54-3								>480						
						Liquid	Phenyl glycidyl ether	122-60-1								>480					>480	
Liquid	Propylene oxide, 1,2-	75-56-9									47	13*/20	43	>480	>480	>480						
277																						
					Liquid	Furaldehyde, 2-	98-01-1						198*/227	>480	>480	>480	>480	>480	>480			
					Liquid	Furan	110-00-9								97							
					Liquid	Furfural	98-01-1						198*/227	>480	>480	>480	>480	>480	>480			
					Liquid	Tetrahydrofuran	109-99-9				imm			imm	>480	>480	>480	>480	>480			
278																						
					Liquid	Diethylene imide oxide	110-91-8						158				>480	>480	>480			
					Liquid	Diketene Acetone (95%)	5394-63-8									>480						
					Liquid	Dioxane, 1,4-	123-91-1							>480	>480	>480	>480	>480	>480			
					Liquid	Morpholine	110-91-8						158				>480	>480	>480			
					Liquid	N-Methylmorpholine (NMM)	109-02-4							>480	>480							
280																						
280																						
					Liquid	Dimethyl hydrazine, N,N-	57-14-7						13				>480 ⁸	>480 ⁸	>480 ⁸			
					Liquid	Hydrazine	302-01-2							>480		283	283	>480	>480	>480		
					Liquid	Hydrazine hydrate	10217-52-4											>480				
							10217-															

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® 10000FR	Tychem® 10000		
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			Tychem® RESPONDER® CSM	
			Hydrazine hydrate (51%)	52-4	Liquid													>480	
			Hydrazine hydrate (85%)	10217-52-4	Liquid										440	440		440	
			Methyl hydrazine	60-34-4	Liquid								183*/283	183*/283	>480		>480	>480	
290																			
			Diesel Fuel Grade D-2	mix	Liquid								>480				>480		>480
291																			
			Crude oil, California	8002-05-9	Liquid								>480				>480	>480	>480
			Cyclo hexane	110-82-7	Liquid								>480	>480	>480	>480	>480	>480	>480
			Diesel automotive test fuel	mix	Liquid			imm											
			Diesel fuel	68334-30-5	Liquid								199	>480	>480	>480	>480	>480	>480
			Fuel-oil no 2	68476-30-2	Liquid			imm					>480				>480		
			Gasoline, leaded	mix	Liquid									imm*/21	imm*/21				>480
			Gasoline, unleaded	86290-81-5	Liquid								imm	>480	>480	>480	>480	>480	>480
			Gasoline, unleaded E10 (87 Octane)	308066-70-8	Liquid								imm				imm		
			Heptane	142-82-5	Liquid									>480			>480		
			Hexane, n-	110-54-3	Liquid			imm					imm	>480	>480	>480	>480	>480	>480
			JP-4 Jet Fuel	50815-00-4	Liquid								imm				>480	>480	>480
			JP-8 Jet Fuel	94114-58-6	Liquid								39*/67	>480			>480	>480	>480
			Kerosene	8008-20-6	Liquid								69	>480	>480	>480			
			Low boiling point naphtha - unspecified	8052-41-3	Liquid												>480	>480	>480
			Mineral oil	8002-05-9	Liquid								>480				>480	>480	>480
			Mineral spirit	64475-85-0	Liquid			imm					190				>480	>480	>480
			Octane, n-	111-65-9	Liquid												>480	>480	>480
			Pentanoic acid	109-52-4	Liquid										>480				
			Propane	74-98-6	Vapor												nm	>480	

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Stoddard solvent	8052-41-3	Liquid											>480	>480	>480
			VM & P Naphtha	8030-30-6	Liquid						imm					>480	>480	>480
			White spirit	mix	Liquid								>480	>480				
292																		
			Benzene	71-43-2	Liquid						imm	>480	>480	>480	>480	>480	>480	>480
			Benzyl methylamine, N-	103-67-3	Liquid								>480	>480				
			Cumene	98-82-8	Liquid							364	>480	>480	>480	>480	>480	>480
			Diethyl benzene (95%)	25340-17-4	Liquid						31		>480	>480	>480	>480	>480	>480
			Ethyl benzene	100-41-4	Liquid						imm	>480	>480	>480	>480	>480	>480	>480
			Isopropyl benzene	98-82-8	Liquid							364	>480	>480	>480	>480	>480	>480
			Methyl benzol	108-88-3	Liquid		imm				imm	>480	>480	>480	>480	>480	>480	>480
			Methyl benzylamine, N-	103-67-3	Liquid								>480	>480				
			Phenethylene	100-42-5	Liquid						16	>480	>480	>480	>480	>480	>480	>480
			Phenyl ethane	100-41-4	Liquid						imm	>480	>480	>480	>480	>480	>480	>480
			Phenyl propane, 2-	98-82-8	Liquid							364	>480	>480	>480	>480	>480	>480
			Styrene	100-42-5	Liquid						16	>480	>480	>480	>480	>480	>480	>480
			Toluene	108-88-3	Liquid		imm				imm	>480	>480	>480	>480	>480	>480	>480
			Vinyl benzol	100-42-5	Liquid						16	>480	>480	>480	>480	>480	>480	>480
			Xylene, mixed isomers	1330-20-7	Liquid								>480	>480	>480	>480	>480	>480
			Xylene, o-	95-47-6	Liquid								>480					
293																		
			Anthracene (sat in Toluene)	120-12-7	Liquid								>480	>480	>480			
			Anthracin (sat in Toluene)	120-12-7	Liquid								>480	>480	>480			
			Naphthalene	91-20-3	Solid								>480	>480	>480			
			Naphthalene (25% in Diethylene glycol dimethylether)	91-20-3	Liquid						79	>480	>480	>480	>480	>480	>480	>480
294																		
				8002-														

Chemical Permeation Data Tables

C	S	C	C	C	C	P	Breakthrough Time (Minutes)															
							Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000			
					Crude oil, California	05-9	Liquid									>480				>480	>480	>480
					Mineral oil	8002-05-9	Liquid									>480				>480	>480	>480
296																						
					Butadiene, 1,3- (0 °C, liquid)	106-99-0	Liquid															>180
					Butadiene, 1,3- (gaseous)	106-99-0	Vapor	imm	imm							>480	>480	>480	>480	>480	>480	>480
					Cyclo octadiene	1552-12-1	Liquid									>480						
					Limonene d-	5989-27-5	Liquid		imm							>480	>480	>480	>480	>480	>480	>480
					Methyl 4-isopropenyl-1-cyclohexene, 1-	5989-27-5	Liquid		imm							>480	>480	>480	>480	>480	>480	>480
					Vinyl ethylene (0 °C, liquid)	106-99-0	Liquid															>180
					Vinyl ethylene (gaseous)	106-99-0	Vapor	imm	imm							>480	>480	>480	>480	>480	>480	>480
300																						
300																						
					Methyl Ethyl Ketone Peroxide (35%)	1338-23-4	Liquid									>480	>480			>480		
					Peracetic Acid (32%)	79-21-0	Liquid									272	>480			>480		
					Tert-Butyl Hydroperoxide	75-91-2	Liquid													>480		
301																						
					Hydrogen peroxide (10%)	7722-84-1	Liquid				>10	>10										
					Hydrogen peroxide (30%)	7722-84-1	Liquid			>480	imm	imm				>480				>480		>480
					Hydrogen peroxide (50%)	7722-84-1	Liquid			>480						>480	>480	>480				
					Hydrogen peroxide (70%)	7722-84-1	Liquid	>480	>480							>480	>480	>480	>480	>480	>480	>480
302																						
					Methyl Ethyl Ketone Peroxide (35%)	1338-23-4	Liquid									>480	>480			>480		
					Peracetic Acid (32%)	79-21-0	Liquid									272	>480			>480		
					Tert-Butyl Hydroperoxide	75-91-2	Liquid													>480		
310																						
311																						
					2-(2-Butoxyethoxy) ethanol	112-34-5	Liquid													>480	>480	
						107-18-																

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Allyl alcohol	6	Liquid							>480	>480	>480	>480	>480	>480	>480
			Amino ethanol, 2-	141-43-5	Liquid							>480	>480	>480	>480	>480	>480	>480
			Amino ethylethanolamine	111-41-1	Liquid							imm	>480	>480	>480	>480	>480	>480
			Amino ethylethanolamine (60%)	111-41-1	Liquid							>480	>480	>480	>480	>480	>480	>480
			Amyl alcohol	71-41-0	Liquid							>480	>480	>480				
			Butanol, 1-	71-36-3	Liquid							imm	>480	>480	>480	>480	>480	>480
			Butanol, n-	71-36-3	Liquid							imm	>480	>480	>480	>480	>480	>480
			Butyl alcohol, n-	71-36-3	Liquid							imm	>480	>480	>480	>480	>480	>480
			Diethylene glycol monobutyl ether	112-34-5	Liquid									>480	>480			
			Ethanol	64-17-5	Liquid							imm	>480	>480	>480	>480	>480	
			Ethanol amine	141-43-5	Liquid								>480	>480	>480	>480	>480	>480
			Ethyl alcohol	64-17-5	Liquid							imm	>480	>480	>480	>480	>480	
			Ethylene glycol monomethyl ether	109-86-4	Liquid								>480	405	>480	>480	>480	>480
			Hydroxy 1-ethanethiol, 2-	60-24-2	Liquid									>480	>480			>480
			Hydroxy propene	107-18-6	Liquid								>480	>480	>480	>480	>480	>480
			Mercapto ethanol	60-24-2	Liquid									>480	>480			>480
			Methanol	67-56-1	Liquid								>480	imm	117	117	>480	>480
			Methoxy ethanol, 2	109-86-4	Liquid								>480	405	>480	>480	>480	>480
			Pentanol, 1-	71-41-0	Liquid								>480	>480	>480			
			Prop-2-yn-1-ol	107-19-7	Liquid										123	123		>480
			Propan -1-ol	71-23-8	Liquid									>480	>480			
			Propanol, 1-	71-23-8	Liquid									>480	>480			
			Propanol, n-	71-23-8	Liquid									>480	>480			
			Propargyl alcohol	107-19-7	Liquid										123	123		>480
			Propen 1-ol, 2-	107-18-6	Liquid								>480	>480	>480	>480	>480	>480
			Propyl alcohol	71-23-8	Liquid									>480	>480			
			Spiritus	64-17-5	Liquid								imm	>480	>480	>480	>480	>480
			Vinyl carbinol	107-18-6	Liquid									>480	>480	>480	>480	>480
			312	100-51-														

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)															
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000			
			Benzyl alcohol	6	Liquid							>480		>480	>480	>480					
			Hydroxy toluene	100-51-6	Liquid								>480		>480	>480	>480				
			Isoamyl alcohol	123-51-3	Liquid								>480				>480				
			Isopropanol	67-63-0	Liquid		imm				imm		>480	>480	>480	>480	>480	>480	>480		
			Isopropanol (70%)	67-63-0	Liquid		imm				imm		>480		>480						
			Isopropyl alcohol	67-63-0	Liquid		imm				imm		>480	>480	>480	>480	>480	>480	>480		
			Isopropyl alcohol (70%)	67-63-0	Liquid		imm				imm		>480		>480						
			Methyl butan-1-ol, 3-	123-51-3	Liquid								>480				>480				
			Propan -2-ol	67-63-0	Liquid		imm				imm		>480	>480	>480	>480	>480	>480	>480		
			Propan -2-ol (70%)	67-63-0	Liquid		imm				imm		>480		>480						
		313																			
			2-Methyl-2-Butanol	75-85-4	Liquid												>480				
			Acetone cyanohydrin	75-86-5	Liquid													>480	>480	>480	>480
			Amyl alcohol, tert-	75-85-4	Liquid													>480			
			Butanol, tert-	75-65-0	Liquid													37*/205	37*/205		
			Cyanopropan-2-ol, 2-	75-86-5	Liquid													>480	>480	>480	>480
			Hydroxy 2-methylpropionitrile, 2-	75-86-5	Liquid													>480	>480	>480	>480
			Hydroxy isobutyronitrile	75-86-5	Liquid													>480	>480	>480	>480
			Methyl propan-2-ol, 2-	75-65-0	Liquid													37*/205	37*/205		
			Pentanol, tert-	75-85-4	Liquid													>480			
		314																			
			Chloro 1,2-propanediol, 3-	96-24-2	Liquid												>480	>480	>480		
			Ethane 1,2-diol	107-21-1	Liquid		>480	imm	imm	imm			>480		>480	>480	>480	>480	>480	>480	
			Ethylene glycol	107-21-1	Liquid		>480	imm	imm	imm			>480		>480	>480	>480	>480	>480	>480	
			Glycerine	56-81-5	Liquid			>480	>480												
			Glycerol	56-81-5	Liquid			>480	>480												
			Glycol alcohol	107-21-1	Liquid		>480	imm	imm	imm			>480		>480	>480	>480	>480	>480	>480	
			Propane -1,2,3-triol	56-81-5	Liquid			>480	>480												
		315																			
			Chloro ethanol, 2-	107-07-3	Liquid											>480	>480	>480	>480		
			Ethylene chlorohydrin	107-07-3	Liquid													>480	>480	>480	
			Glycol chlorohydrin	107-07-3	Liquid													>480	>480	>480	

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Trichloro ethanol, 2,2,2-	115-20-8	Liquid							>480	>480	>480	>480	>480	>480
			Trifluoro ethanol, 2,2,2-	75-89-8	Liquid		imm								>480	>480	>480
316																	
			Chloro 1-methylbenzene, 2-	95-49-8	Liquid							13	>480	>480	>480	>480	>480
			Chloro phenol, p- (sat in Methanol)	106-48-9	Liquid										>480	>480	>480
			Chloro toluene, o-	95-49-8	Liquid							13	>480	>480	>480	>480	>480
			Creosote	8001-58-9	Liquid									>480	>480		
			Cresol o-	95-48-7	Liquid		13					>480	198	179	179	>480	
			Cresols, mixed isomers	1319-77-3	Liquid		71					100			>480	>480	>480
			Cresylic acid	1319-77-3	Liquid		71					100			>480	>480	>480
			Dinitro-o-cresol, 4,6- (sat in Methanol)	534-52-1	Liquid										>480	>480	>480
			Dinitrocresol (sat in Methanol)	534-52-1	Liquid										>480	>480	>480
			Hydroxy 2-nitrobenzene, 1- (70 ° C, molten)	88-75-5	Liquid							imm			208	208	208
			Hydroxy chlorobenzene (sat in Methanol)	106-48-9	Liquid										>480	>480	>480
			Hydroxy toluene, o-	95-48-7	Liquid		13					>480	198	179	179	>480	
			Methyl phenols	1319-77-3	Liquid		71					100			>480	>480	>480
			Nitro phenol, o- (70 ° C, molten)	88-75-5	Liquid							imm			208	208	208
			Pentachlorophenol (sat in Methanol)	87-86-5	Liquid										>480	>480	>480
			Phenol (45 ° C, molten)	108-95-2	Liquid							44	17	25	25	101	>480
			Phenol (60 ° C, molten)	108-95-2	Liquid							imm	imm		imm	121	87
			Phenol (85% at 45 ° C)	108-95-2	Liquid										149	>480	>480
			Phenol (85%)	108-95-2	Liquid		11					>480	341	>480	>480	>480	>480
			Tetrachloro bisphenol-A, 2,2', 6,6'-	79-95-8	Solid									>480	>480		
			m-Cresol 55%, p-Cresol 30%, Phenol 15% (mix)	mix	Liquid										>480	>480	>480
318																	
			Phenethyl alcohol, 2-	60-12-8	Liquid								>480				

Chemical Permeation Data Tables

C	S	C	C	C	P	Breakthrough Time (Minutes)																				
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000								
l	a	a	a	a	a	Chemical Name	CAS	h	a	s	e															
						Phenyl ethanol, 1-	98-85-1	Liquid							>480	>480			>480	>480			>480	>480		
330																										
330																										
						Bromine	7726-95-6	Liquid		imm					imm	imm	imm	imm	imm	imm			imm	imm	15	
						Bromine (10 g/m ²)	7726-95-6	Liquid																	>480	
						Bromine (sat vapour)	7726-95-6	Vapor																	30*/40	
						Chlorine (-70 °C, liquid)	7782-50-5	Liquid							>480				441	>480			>480	>480		
						Chlorine (20 ppm)	7782-50-5	Vapor		>480 ⁸																
						Chlorine (gaseous)	7782-50-5	Vapor		imm				>480	imm	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	
						Iodine	7553-56-2	Solid						>480												
						Mercury	7439-97-6	Liquid		>480				>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	
340																										
340																										
						Ammonium bifluoride (sat)	1341-49-7	Liquid								>480	>480									
						Ammonium chloride (sat)	12125-02-9	Liquid							>480											
						Ammonium fluoride (40%)	12125-01-8	Liquid									>480	>480	>480	>480	>480	>480	>480	>480	>480	
						Ammonium hydrogendifluoride (sat)	1341-49-7	Liquid							>480	>480										
						Arsenic (III) chloride	7784-34-1	Liquid									32*/38	32*/38								
						Arsenic trichloride	7784-34-1	Liquid									32*/38	32*/38								
						Calomel (sat)	10112-91-1	Liquid							>480	>480										
						Disodium sulfide (60% (slurry))	1313-82-2	Liquid		>480				>480	>480				>480	>480	>480	>480	>480	>480	>480	
						Ferric (II) chloride (sat)	7758-94-3	Liquid										>480	>480	>480	>480	>480	>480	>480		
						Ferric (III) chloride (40%)	7705-08-0	Liquid										>480								
						Ferric (III) chloride (50%)	7705-08-0	Liquid						>480					>480	>480	>480	>480	>480	>480		
							7447-																			

Chemical Permeation Data Tables

C	S	Sub-Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Lithium chloride (20%)	41-8	Liquid		>480											
			Mercuric I chloride (sat)	10112-91-1	Liquid							>480	>480					
			Mercuric II chloride (sat)	7487-94-7	Liquid							>480			>480 ⁸	>480 ⁸	>480 ⁸	
			Potassium acetate (sat)	127-08-2	Liquid							>480		>480	>480 ⁸	>480 ⁸	>480 ⁸	
			Potassium carbonate (sat)	584-08-7	Liquid							>480						
			Potassium chromate (sat)	7789-00-6	Liquid			>480	>480			>480	>480	>480	>480 ⁸	>480 ⁸	>480 ⁸	
			Potassium permanganate (sat)	7722-64-7	Liquid		>480											
			Sodium fluoride (sat)	7681-49-4	Liquid							>480			>480			
			Sodium hypochlorite (10-15 % active chlorine)	7681-52-9	Liquid			>240	>240	>480					>480			
			Sodium hypochlorite (15%)	7681-52-9	Liquid	>480	>480					>480	>480	>480	>480	>480	>480	>480
			Sodium hypochlorite (5.25-6%)	7681-52-9	Liquid		>480	>480	>480	>480								
			Sodium metabisulphite (38%)	7681-57-4	Liquid			imm				>480	23		>480	>480	>480	
			Sodium silicate (40-42%)	6834-92-0	Liquid		>480											
345																		
			Hydrogen cyanide (21 °C, liquid)	74-90-8	Liquid										135	135	>480	
			Hydrogen cyanide (27 °C, gaseous)	74-90-8	Vapor							30			>480	>480	>480	
			Potassium cyanide (10%)	151-50-8	Liquid		>480											
			Sodium cyanide (45%)	143-33-9	Liquid	>480	>480					>480	>480	>480				
			Sodium cyanide (sat)	143-33-9	Liquid							>480		>480	>480	>480		
350																		
350																		
			Ammonia (-33 °C, liquid)	7664-41-7	Liquid							35	30	20				>480
			Ammonia (-70 °C, liquid)	7664-41-7	Liquid							>480					>480	>480
			Ammonia (gaseous)	7664-41-7	Vapor	imm	imm				26	imm	90	20	105*/133	>480	>480	
				1341-														

Chemical Permeation Data Tables

C	S	Sub - C	Chemical Name	CAS	P	h	Breakthrough Time (Minutes)									Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
							Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR			
			Ammonium bifluoride (sat)	49-7	Liquid								>480	>480				
			Ammonium hydrogendifluoride (sat)	1341-49-7	Liquid								>480	>480				
			Arsine	7784-42-1	Vapor										>480	>480	>480	
			Boron trichloride	10294-34-5	Vapor										>480	>480	>480	
			Boron trifluoride	7637-07-2	Vapor										>480	>480	>480	
			Carbon monoxide	630-08-0	Vapor										330	330	330	
			Chlorine (-70 °C, liquid)	7782-50-5	Liquid							>480			441	>480	>480	
			Chlorine (20 ppm)	7782-50-5	Vapor			>480 ⁸										
			Chlorine (gaseous)	7782-50-5	Vapor			imm			>480	imm	>480	>480	>480	>480	>480	
			Chlorine trifluoride	7790-91-2	Vapor										45	45	45	
			Diborane (10%)	19287-45-7	Vapor										>480	>480	>480	
			Fluorine	7782-41-4	Vapor												>480	
			Hydrofluoric acid (10%)	7664-39-3	Liquid				imm									
			Hydrofluoric acid (48-51%)	7664-39-3	Liquid		400	446			>480	>480	15	>480	>480	>480	>480	
			Hydrofluoric acid (60%)	7664-39-3	Liquid								52					
			Hydrofluoric acid (70%)	7664-39-3	Liquid					143	126		35	>480	>480	>480	>480	
			Hydrogen bromide (gaseous)	10035-10-6	Vapor								>480	>480	>480	>480	>480	
			Hydrogen chloride (-90 °C, liquid)	7647-01-0	Liquid												>180	
			Hydrogen chloride (gaseous)	7647-01-0	Vapor			imm			>480	>480	>480	>480	>480	>480	>480	
			Hydrogen cyanide (21 °C, liquid)	74-90-8	Liquid										135	135	>480	
			Hydrogen cyanide (27 °C, gaseous)	74-90-8	Vapor						30			>480	>480	>480	>480	
			Hydrogen fluoride (20-27 °C, gaseous)	7664-39-3	Vapor			imm		93*/134	186	imm	imm	130	>480	>480	>480	
			Hydrogen selenide	7783-07-5	Vapor									>480	>480	>480	>480	

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Hydrogen sulfide	7783-06-4	Vapor							imm	>480		>480	>480	>480
			Methanethiol	74-93-1	Vapor							>480	>480	>480	>480	>480	>480
			Methyl mercaptan	74-93-1	Vapor							>480	>480	>480	>480	>480	>480
			Nitric oxide	10102-43-9	Vapor												>480
			Nitrogen Dioxide (liquid)	10102-44-0	Liquid						>480						
			Nitrogen dioxide	10102-44-0	Vapor								<15	<15			
			Nitrogen tetroxide	10544-72-6	Liquid										>480	>480	>480
			Nitrogen tetroxide (21 °C, liquid)	10544-72-6	Liquid												450
			Nitrogen tetroxide (gaseous)	10544-72-6	Vapor										90	90	90
			Nitrogen trifluoride	7783-54-2	Vapor										>480	>480	>480
			Nitrous oxide	10024-97-2	Vapor										>480	>480	>480
			Phosgene	75-44-5	Vapor							>480	>480	>480	>480	>480	>480
			Phosphine	7803-51-2	Vapor								imm	imm	>480	>480	>480
			Sulfur dioxide	7446-09-5	Vapor		imm					>480	26*/37	28*/46	>480	>480	>480
			Sulfur hexafluoride	2551-62-4	Vapor										>480	>480	>480
			Tungsten hexafluoride	7783-82-6	Vapor										>480	>480	>480
360																	
			Antimony pentachloride	7647-18-9	Liquid							>480		<15	<15	>480	
			Boron trichloride	10294-34-5	Vapor										>480	>480	>480
			Boron trifluoride	7637-07-2	Vapor										>480	>480	>480
			Pentachloroantimony	7647-18-9	Liquid							>480		<15	<15	>480	
			Phosphorus oxychloride	10025-87-3	Liquid							410	>480	>480	>480	>480	>480
			Phosphorus trichloride	7719-12-2	Liquid							imm	>480	>480	>480	>480	>480
				10026-													

Chemical Permeation Data Tables

C	S	C	C	C	P	Breakthrough Time (Minutes)																			
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000							
l	u	l	l	l	h	Chemical Name	CAS	h	ase																
					Liquid	Silicon tetrachloride	04-7							35	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Thionyl chloride	7719-09-7								15	21	21	35	35	90					
					Liquid	Titan(IV) chloride	7550-45-0							imm	120	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Titanium tetrachloride	7550-45-0							imm	120	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Vanadium tetrachloride	7632-51-1									>480									
365																									
					Vapor	Sulfur dioxide	7446-09-5			imm				>480		26*/37	28*/46	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Sulfur trioxide	7446-11-9							imm				90	90	90	90	90	90	90	90
370																									
370																									
					Liquid	Amido sulfonic acid (15%)	5329-14-6			>480								>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Chlorosulfonic acid	7790-94-5							>480	330	17	>480	>480	>480	180	>480	>480	>480	>480	>480
					Liquid	Chlorsulfonic acid	7790-94-5							>480	330	17	>480	>480	>480	180	>480	>480	>480	>480	>480
					Liquid	Chromic acid (CrO3) (44.9%)	1333-82-0		>480					>480			>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Fluoroboric acid (48-50%)	16872-11-0							>480				>480							
					Liquid	Fluorosilicic acid (33-35%)	16961-83-4							>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Fluorosulfonic acid	7789-21-1										194	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Hydriodic acid (47%)	10034-85-2							>480				>480							
					Liquid	Hydriodic acid (55-57%)	10034-85-2								>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Hydrobromic acid (48%)	10035-10-6								>480		>480								
					Liquid	Hydrochloric acid (16%)	7647-01-0				imm	imm	imm												
					Liquid	Hydrochloric acid (32%)	7647-01-0				imm	imm	imm												
					Liquid	Hydrochloric acid (37%)	7647-01-0		54	140				>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480	>480
					Liquid	Hydrofluoric acid (10%)	7664-39-3							imm											

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Hydrofluoric acid (48-51%)	7664-39-3	Liquid	400	446					>480	>480	15	>480	>480	>480	>480
			Hydrofluoric acid (60%)	7664-39-3	Liquid									52				
			Hydrofluoric acid (70%)	7664-39-3	Liquid							143	126		35	>480	>480	>480
			Hydrogen bromide (gaseous)	10035-10-6	Vapor									>480	>480	>480	>480	>480
			Hydrogen chloride (-90 °C, liquid)	7647-01-0	Liquid													>180
			Hydrogen chloride (gaseous)	7647-01-0	Vapor		imm					>480	>480	>480	>480	>480	>480	>480
			Hydrogen cyanide (21 °C, liquid)	74-90-8	Liquid										135	135	>480	
			Hydrogen cyanide (27 °C, gaseous)	74-90-8	Vapor								30		>480	>480	>480	
			Hydrogen fluoride (20-27 °C, gaseous)	7664-39-3	Vapor		imm					93*/134	186	imm	imm	130	>480	>480
			Hypophosphorus acid (50%)	6303-21-5	Liquid								>480	>480	>480			
			Nitric acid (10%)	7697-37-2	Liquid			>120	>120									
			Nitric acid (30%)	7697-37-2	Liquid			imm	imm	imm								
			Nitric acid (50%)	7697-37-2	Liquid									>480				
			Nitric acid (70%)	7697-37-2	Liquid	203	>480					>480		105*/140	>480	>480	>480	>480
			Nitric acid (90%)	7697-37-2	Liquid							>480			>480	>480	>480	>480
			Nitric acid (>95%)	7697-37-2	Liquid									46				390
			Nitric acid, red fuming (90%)	52583-42-3	Liquid								imm	imm*/10	>480	>480	>480	>480
			Oleum (103% (13% free SO3))	8014-95-7	Liquid		230											>480
			Oleum (20% free SO3)	8014-95-7	Liquid		60					>480		15*/59	>480	>480	>480	
			Oleum (30% free SO3)	8014-95-7	Liquid							>480				>480	>480	
			Oleum (40% free SO3)	8014-95-7	Liquid								imm*/12	455*/468	>480	>480	>480	>480
			Oleum (65% free SO3)	8014-95-7	Liquid							15		248				>480
				7601-														

Chemical Permeation Data Tables

C	S	Sub - C	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Perchloric acid (70%)	90-3	Liquid									>480	>480	>480	>480
			Phosphinic acid (50%)	6303-21-5	Liquid							>480	>480	>480			
			Phosphoric acid (50%)	7664-38-2	Liquid			>480	>480	>480							
			Phosphoric acid (85%)	7664-38-2	Liquid						>480	>480	>480	>480	>480	>480	>480
			Sulfamic acid (15%)	5329-14-6	Liquid		>480						>480	>480	>480	>480	>480
			Sulfamidic acid (15%)	5329-14-6	Liquid		>480						>480	>480	>480	>480	>480
			Sulfuric acid (18%)	7664-93-9	Liquid			>240	>240	>480							
			Sulfuric acid (30%)	7664-93-9	Liquid			>240	>240	>480			>480				
			Sulfuric acid (50%)	7664-93-9	Liquid			>30	>30				>480				
			Sulfuric acid (70%)	7664-93-9	Liquid								>480				
			Sulfuric acid (98% at 50 °C)	7664-93-9	Liquid								>480				
			Sulfuric acid (>95%)	7664-93-9	Liquid	>480	>480				>480	>480	50	>480	>480	>480	>480
			Sulfuric acid fuming (103% (13% free SO3))	8014-95-7	Liquid		230										>480
			Sulfuric acid fuming (20% free SO3)	8014-95-7	Liquid		60				>480		15*/59	>480	>480		
			Sulfuric acid fuming (30% free SO3)	8014-95-7	Liquid						>480			>480	>480		
			Sulfuric acid fuming (40% free SO3)	8014-95-7	Liquid								imm*/12	455*/468	>480	>480	>480
			Sulfuric acid fuming (65% free SO3)	8014-95-7	Liquid							15		248			>480
380																	
380																	
			Ammonia (-33 °C, liquid)	7664-41-7	Liquid							35	30	20			>480
			Ammonia (-70 °C, liquid)	7664-41-7	Liquid							>480				>480	>480
			Ammonia (gaseous)	7664-41-7	Vapor	imm	imm				26	imm	90	20	105*/133	>480	>480
			Ammonium hydroxide (16%)	1336-21-6	Liquid			imm	imm	imm							
			Ammonium hydroxide (2-3% in	1336-													

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)												
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
			Household cleaner	21-6	Liquid							>480		>480		>480		
			Ammonium hydroxide (28% - 30%)	1336-21-6	Liquid		imm	imm	imm				89			160	>480	>480
			Ammonium hydroxide (32%)	1336-21-6	Liquid									35	>480			
			Caustic ammonia (16%)	1336-21-6	Liquid			imm	imm	imm								
			Caustic ammonia (2-3% in Household cleaner)	1336-21-6	Liquid							>480		>480		>480		
			Caustic ammonia (28% - 30%)	1336-21-6	Liquid		imm	imm	imm				89			160	>480	>480
			Caustic ammonia (32%)	1336-21-6	Liquid									35	>480			
			Caustic soda (10%)	1310-73-2	Liquid			>480	>480	>480								
			Caustic soda (40%)	1310-73-2	Liquid			>30	>30									
			Caustic soda (50% at 50 °C)	1310-73-2	Liquid										>480			
			Caustic soda (50%)	1310-73-2	Liquid	>480	>480	>30	>30	>30		>480	>480	>480	>480	>480	>480	>480
			Caustic soda (>95%, solid)	1310-73-2	Solid			>480	>480									
			Lithium hydroxide (14.9%)	1310-65-2	Liquid	>480	>480											
			Methanethiol	74-93-1	Vapor							>480	>480	>480	>480	>480	>480	>480
			Methyl mercaptan	74-93-1	Vapor							>480	>480	>480	>480	>480	>480	>480
			Potassium hydroxide (40%)	1310-58-3	Liquid			imm	imm	>120								
			Potassium hydroxide (45%)	1310-58-3	Liquid	>480	>480					>480	>480	>480	>480	>480	>480	>480
			Potassium hydroxide (50%)	1310-58-3	Liquid									>480	>480			
			Sodium hydroxide (10%)	1310-73-2	Liquid			>480	>480	>480								
			Sodium hydroxide (40%)	1310-73-2	Liquid			>30	>30									
			Sodium hydroxide (50% at 50 °C)	1310-73-2	Liquid										>480			
			Sodium hydroxide (50%)	1310-73-2	Liquid	>480	>480	>30	>30	>30		>480	>480	>480	>480	>480	>480	>480
			Sodium hydroxide (>95%, solid)	1310-73-2	Solid			>480	>480									

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)													
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000	
390																			
			2-Methyl-4-isothiazolin-3-one (20%)	2682-20-4	Liquid		>480					>480			>480				
			Benzisothiazol, 1,2- (20%)	2634-33-5	Liquid		>480					>480			>480				
391																			
			2-Methyl-4-isothiazolin-3-one (20%)	2682-20-4	Liquid		>480					>480			>480				
			Acetone	67-64-1	Liquid	imm	imm					13	462	>480	>480	>480	>480	>480	>480
			Benzisothiazol, 1,2- (20%)	2634-33-5	Liquid		>480					>480			>480				
			But-3-en-2-one	78-94-4	Liquid									>480	>480				
			Butanone	78-93-3	Liquid							18	>480	40*/64	40*/64	>480	>480	>480	>480
			Chloro acetone (95%)	78-95-5	Liquid							258	>480	>480	>480	>480 ⁸			
			Chloro propan-2-one, 1- (95%)	78-95-5	Liquid							258	>480	>480	>480	>480 ⁸			
			Cyclo hexanone	108-94-1	Liquid							136		>480	>480	>480	>480	>480	>480
			Dichloro -2-propanone, 1,3- (45 °C, molten)	534-07-6	Liquid									>480	>480				
			Dichloro -2-propanone, 1,3- (95% at 40 °C, molten)	534-07-6	Liquid														>480
			Dichloro acetone, 1,3- (45 °C, molten)	534-07-6	Liquid									>480	>480				
			Dichloro acetone, 1,3- (95% at 40 °C, molten)	534-07-6	Liquid														>480
			Diketene Acetone (95%)	5394-63-8	Liquid										>480				
			Dimethyl ketal	67-64-1	Liquid	imm	imm					13	462	>480	>480	>480	>480	>480	>480
			Dimethyl ketone	67-64-1	Liquid	imm	imm					13	462	>480	>480	>480	>480	>480	>480
			Hexanone	108-94-1	Liquid							136		>480	>480	>480	>480	>480	>480
			Hexone	108-10-1	Liquid								>480	>480	>480	>480	>480	>480	>480
			Isobutyl methyl ketone	108-10-1	Liquid								>480	>480	>480	>480	>480	>480	>480
			Ketone propane	67-64-1	Liquid	imm	imm					13	462	>480	>480	>480	>480	>480	>480
			MEK	78-93-3	Liquid							18	>480	40*/64	40*/64	>480	>480	>480	>480
			Methyl acetyl	67-64-1	Liquid	imm	imm					13	462	>480	>480	>480	>480	>480	>480
			Methyl ethyl ketone	78-93-3	Liquid							18	>480	40*/64	40*/64	>480	>480	>480	>480
			Methyl ketone	67-64-1	Liquid	imm	imm					13	462	>480	>480	>480	>480	>480	>480
			Methyl pentan-2-one, 4-	108-10-1	Liquid								>480	>480	>480	>480	>480	>480	>480

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Methyl vinyl ketone	78-94-4	Liquid								>480	>480			
			Pimelic ketone	108-94-1	Liquid						136		>480	>480	>480	>480	>480
			Propan -2-one	67-64-1	Liquid	imm	imm				13	462	>480	>480	>480	>480	>480
			Pyroacetic ether	67-64-1	Liquid	imm	imm				13	462	>480	>480	>480	>480	>480
			Trichloro acetone, 1,1,3-(87.7%)	921-03-9	Liquid								467*/476	467*/476			
430																	
431																	
			Acetone cyanohydrin	75-86-5	Liquid								>480	>480	>480	>480	>480
			Acetonitrile	75-05-8	Liquid	imm	imm				60	imm	>480	131	>480	>480	>480
			Acrylonitrile	107-13-1	Liquid		imm				36*/48	31	108	73*/92	>480	>480	>480
			Adipic acid dinitrile	111-69-3	Liquid							>480	>480	>480	>480	>480	>480
			Adipic acid nitrile	111-69-3	Liquid							>480	>480	>480	>480	>480	>480
			Adiponitrile	111-69-3	Liquid							>480	>480	>480	>480	>480	>480
			Adipyl dinitrile	111-69-3	Liquid							>480	>480	>480	>480	>480	>480
			Chloro acrylonitrile, 2-	920-37-6	Liquid							146	>480	>480	>480		
			Cyanoethylene	107-13-1	Liquid		imm				36*/48	31	108	73*/92	>480	>480	>480
			Cyanomethane	75-05-8	Liquid	imm	imm				60	imm	>480	131	>480	>480	>480
			Cyanopropan-2-ol, 2-	75-86-5	Liquid								>480	>480	>480	>480	>480
			Dicyanobutane, 1,4-	111-69-3	Liquid							>480	>480	>480	>480	>480	>480
			Ethane nitrile	75-05-8	Liquid	imm	imm				60	imm	>480	131	>480	>480	>480
			Ethyl nitrile	75-05-8	Liquid	imm	imm				60	imm	>480	131	>480	>480	>480
			Hydroxy 2-methylpropionitrile, 2-	75-86-5	Liquid								>480	>480	>480	>480	>480
			Hydroxy isobutyronitrile	75-86-5	Liquid								>480	>480	>480	>480	>480
			Methyl 1,5-pentantedinitrile, 2-	4553-62-2	Liquid								>480	>480			
			Methyl 1,5-pentantedinitrile, 2-(87%)	4553-62-2	Liquid										>480	>480	>480
			Methyl cyanide	75-05-8	Liquid	imm	imm				60	imm	>480	131	>480	>480	>480
			Pentene nitrile, 2-	13284-42-9	Liquid								>480	>480	>480		
			Pentene nitrile, 3-	4635-87-4	Liquid										>480	>480	>480

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)										Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000			
			Pentene nitrile, cis-2- (70%)	25899-50-7	Liquid											>480	>480	>480
			Propenenitrile, 2-	107-13-1	Liquid		imm					36*/48	31	108	73*/92	>480	>480	>480
			Propenoic acid nitrile	107-13-1	Liquid		imm					36*/48	31	108	73*/92	>480	>480	>480
			Vinyl cyanide	107-13-1	Liquid		imm					36*/48	31	108	73*/92	>480	>480	>480
432																		
			Benzo nitrile	100-47-0	Liquid								450	>480	>480	>480	>480	>480
			Benzyl cyanide	140-29-4	Liquid								>480	>390	>390			
			Cyanobenzene	100-47-0	Liquid								450	>480	>480	>480	>480	>480
			Phenyl acetonitrile	140-29-4	Liquid								>480	>390	>390			
			Phenyl cyanide	100-47-0	Liquid								450	>480	>480	>480	>480	>480
440																		
441																		
			Nitro benzene	98-95-3	Liquid		imm					59	>480	>480	>480	>480	>480	>480
			Nitro methane	75-52-5	Liquid								>480	233	233	>480	>480	>480
			Nitro propane, 2-	79-46-9	Liquid								>480	>480	>480	>480	>480	>480
442																		
			Chloro 2-nitrobenzene, 1-	88-73-3	Solid		15											
			Chloro 2-nitrobenzene, 1- (35-40 ° C, molten)	88-73-3	Liquid									>480	>480			
			Dinitro-o-cresol, 4,6- (sat in Methanol)	534-52-1	Liquid											>480	>480	>480
			Dinitrocresol (sat in Methanol)	534-52-1	Liquid											>480	>480	>480
			Hydroxy 2-nitrobenzene, 1- (70 ° C, molten)	88-75-5	Liquid							imm				208	208	208
			Nitro chlorobenzene, p-	100-00-5	Solid		imm											
			Nitro phenol, o- (70 ° C, molten)	88-75-5	Liquid							imm				208	208	208
			Nitro toluene, 2-	88-72-2	Liquid							95			>480	95		
			Nitro toluene, p-	99-99-0	Solid		imm											
450																		
450																		
			Dimethyl nitrosamine	62-75-9	Liquid											>480	>480	

Chemical Permeation Data Tables

C	S	C	C	C	P	Breakthrough Time (Minutes)										
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM
												>480	>480			
460																
462																
														>480	>480	>480
														>480	>480	>480
											>480 ⁸	120 ⁸		>480 ⁸	>480 ⁸	>480 ⁸
												>480 ⁸	>480 ⁸	>480 ⁸	>480 ⁸	>480 ⁸
												>1400 ⁸	>1400 ⁸			
												>480 ⁸		>480 ⁸	>480 ⁸	>480 ⁸
												>480 ⁸	>480 ⁸			>480 ⁸
												>1400 ⁸	>1400 ⁸			
														>480 ⁸	>480 ⁸	>480 ⁸
												>480 ⁸	>480 ⁸			>480 ⁸
														>480	>480	>480
											210			>480	>480	>480
												>1400 ⁸	>1400 ⁸			
											>480 ⁸	>480 ⁸		>480 ⁸	>480 ⁸	>480 ⁸
												>480 ⁸	>480 ⁸	>480 ⁸	>480 ⁸	>480 ⁸
470																
470																
													>480	>480		
													>480			
													>155 ⁸	>155 ⁸		
											>360 ⁸	120 ⁸		>480 ⁸	>480 ⁸	>480 ⁸

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Lewisite (L), MIL-STD-282 (100 g /m ²)	541-25-3	Liquid								360 ⁸	360 ⁸	120 ⁸	120 ⁸	>480 ⁸
			Nickel carbonyl	13463-39-3	Liquid												>480
			Tetracarbonylnickel	13463-39-3	Liquid												>480
			Tetraethyl lead	78-00-2	Liquid						>480			>480	>480	>480	>480
			Tetramethyl tin (0.5% in Pentane)	594-27-4	Liquid									>480	>480	>480	>480
			Tin chloride, mono-n-butyl	1118-46-3	Liquid							>480	>480				
			Tin chloride, tri-n-butyl	1461-22-9	Liquid							nm	nm				
			Triethyl aluminum (93%)	97-93-8	Liquid											>480	
			Vinyl magnesium chloride (15% in Tetrahydrofuran)	3536-96-7	Liquid						imm				imm		
			Vinyl magnesium chloride (16.5% in Tetrahydrofuran)	3536-96-7	Liquid										>480	>480	>480
480																	
			Dichloro silane	4109-96-0	Vapor										>480	>480	>480
			Dimethyl dichlorosilane	75-78-5	Liquid						46		>480	>480	46		>480
			Hexamethyl disilazane	999-97-3	Liquid						>480				>480	>480	>480
			Hexamethyl disilazane, 1,1,1,3,3,3-	999-97-3	Liquid						>480				>480	>480	>480
			Methyl trichlorosilane	75-79-6	Liquid							>480	>480	>480	>480	>480	>480
			Phenyl trichlorosilane	98-13-5	Liquid							>480	>480	>480	>480		>480
			Silane	7803-62-5	Vapor								>480	>480	>480	>480	>480
			Silicon tetrachloride	10026-04-7	Liquid						35	>480	>480	>480	>480	>480	>480
			Tetraethoxysilane	78-10-4	Liquid										>480	>480	>480
			Trichloro vinylsilane	75-94-5	Liquid						100				100		
			Trichloro phenylsilane	98-13-5	Liquid						>480		>480	>480	>480		>480
			Trichloro silane	10025-78-2	Liquid						60		>480		>480	>480	>480
500																	
			2-Methyl-4-isothiazolin-3-one (20%)	2682-20-4	Liquid							>480			>480		

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Benzisothiazol, 1,2- (20%)	2634-33-5	Liquid		>480						>480		>480		
501																	
			Benzene thiol	108-98-5	Liquid										>480	>480	>480
			Ethane thiol	75-08-1	Liquid							imm	>480	>480	>480	>480	>480
			Ethyl mercaptan	75-08-1	Liquid							imm	>480	>480	>480	>480	>480
			Hydroxy 1-ethanethiol, 2-	60-24-2	Liquid								>480	>480			>480
			Mercapto acetic acid	68-11-1	Liquid								>480	>480	>480	>480	>480
			Mercapto ethanol	60-24-2	Liquid								>480	>480			>480
			Methanethiol	74-93-1	Vapor								>480	>480	>480	>480	>480
			Methyl mercaptan	74-93-1	Vapor								>480	>480	>480	>480	>480
			Phenyl mercaptan	108-98-5	Liquid										>480	>480	>480
			Thioglycolic acid	68-11-1	Liquid								>480	>480	>480	>480	>480
502																	
			Carbon disulfide	75-15-0	Liquid	imm	imm						imm	imm	>480	>480	>480
			Chlorine sulfide	10545-99-0	Liquid												440
			Chlorine sulfide (80%)	10545-99-0	Liquid								imm		70	70	>480
			Dimethyl sulfide	75-18-3	Liquid								>480	271	271		
			Disulphur dichloride	10025-67-9	Liquid										>480	>480	>480
			Hydrogen sulfide	7783-06-4	Vapor								imm	>480	>480	>480	>480
			Sulfur Mustard (HD), FINABEL 0.7.C	505-60-2	Liquid									>1400 ⁸	>1400 ⁸		
			Sulfur Mustard (HD), MIL-STD-282 (10 g/m ²)	505-60-2	Liquid								>480 ⁸	120 ⁸		>480 ⁸	>480 ⁸
			Sulfur Mustard (HD), MIL-STD-282 (100 g/m ²)	505-60-2	Liquid								>480 ⁸	>480 ⁸	>480 ⁸	>480 ⁸	>480 ⁸
			Sulfur monochloride	10025-67-9	Liquid										>480	>480	>480
			Sulphur dichloride	10545-99-0	Liquid												440
			Sulphur dichloride (80%)	10545-99-0	Liquid								imm		70	70	>480
503																	
			Dimethyl sulfoxide	67-68-5	Liquid								>480	>480	>480	>480	>480
504																	
				7790-													

Chemical Permeation Data Tables

C	S	Sub - Classes	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)												
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
			Chlorosulfonic acid	94-5	Liquid							>480	330	17	>480	>480	180	>480
			Chlorsulfonic acid	7790-94-5	Liquid							>480	330	17	>480	>480	180	>480
			Ethansulphonic acid (70%)	594-45-6	Liquid									>480				
			Methanesulphonic acid	75-75-2	Liquid									>480	>480			
			Methanesulphonic acid (70%)	75-75-2	Liquid							>480				>480		
			Trifluoro methansulfonic acid	1493-13-6	Liquid							>480		>480	>480	>480	>480	>480
505																		
			Benzene sulfone chloride	98-09-9	Liquid							>480	>480	>480	>480	>480	>480	>480
			Benzene sulfonyl chloride	98-09-9	Liquid							>480	>480	>480	>480	>480	>480	>480
			Methanesulfonyl chloride	124-63-0	Liquid								>480	>480	>480	>480	>480	>480
507																		
			Diethyl sulfate	64-67-5	Liquid							>480	>480	>480				>480
			Dimethyl sulfate	77-78-1	Liquid			imm	imm			>480	>480	>480	>480	>480	>480	>480
			Sodium bisulphite (38-40%)	7631-90-5	Liquid							>480			>480			
			Sulfuric acid diethyl ester	64-67-5	Liquid							>480	>480	>480				>480
			Sulfuric acid dimethyl ester	77-78-1	Liquid			imm	imm			>480	>480	>480	>480	>480	>480	>480
509																		
			2-Methyl-4-isothiazolin-3-one (20%)	2682-20-4	Liquid		>480					>480			>480			
			Amido sulfonic acid (15%)	5329-14-6	Liquid		>480							>480	>480	>480	>480	>480
			Benzisothiazol, 1,2- (20%)	2634-33-5	Liquid		>480					>480			>480			
			Brom thiophene, 2-	1003-09-4	Liquid									>480				
			Sulfamic acid (15%)	5329-14-6	Liquid		>480							>480	>480	>480	>480	>480
			Sulfamidic acid (15%)	5329-14-6	Liquid		>480							>480	>480	>480	>480	>480
			Sulfur hexafluoride	2551-62-4	Vapor										>480	>480	>480	>480
550																		
550																		
			Sodium acetate (sat)	127-09-3	Liquid			>480	>480									
			Sodium methylate (50% in Methanol)	124-41-4	Liquid										>480	>480	>480	>480

Chemical Permeation Data Tables

C	S	Sub-Class	Chemical Name	CAS	Phase	Breakthrough Time (Minutes)											
						Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR
			Tetraethyl ammonium hydroxide (35%)	77-98-5	Liquid							>480			>480		
			Tetramethyl ammonium hydroxide (25%)	75-59-2	Liquid		>480					>480		>480			>480
590																	
590																	
			Black Liquor (mix)	mix	Liquid	>480	>480					>480	>480	>480	>480	>480	>480
			Boron fluoride ethyl ether	109-63-7	Liquid								>480	>480			>480
			Boron trifluoride diethyl etherate	109-63-7	Liquid								>480	>480			>480
			Boron trifluoride dimethyl etherate	353-42-4	Liquid						>480	>480	>480				
			Boron trifluoride etherate	109-63-7	Liquid							>480	>480				>480
			Chemguard S-764P14A	mix	Liquid		>480				>480		>480				
			Chemidize 727 ND (mix)	mix	Liquid						>480			>480			
			Dahlgren Decon solution	mix	Liquid							>480	>480				
			Dowtherm Heat Transfer Fluid	mix	Liquid							>480		>480			
			DuPont Activator 193S (mix)	mix	Liquid		>480										
			DuPont Activator 4505S (mix)	mix	Liquid		>480										
			DuPont Activator 4507S (mix)	mix	Liquid		>480										
			Green Liquor (mix)	mix	Liquid	>480	>480				>480	>480	>480	>480	>480	>480	>480
			Skydrol 4D	mix	Liquid						>480						
			Skydrol 5	mix	Liquid						>480						
			Skydrol PE-5	mix	Liquid						>480						
			Spectracide® (50% Malathion, 44% Aromatic Solvent)	mix	Liquid		imm				>480						
			White Liquor	mix	Liquid	>480	>480				>480	>480	>480	>480	>480	>480	>480
			t-Sodium-amylate / t-amyl alcohol (mix)	mix	Liquid									120	120	120	
990																	
991																	
			Carboplatin (10 mg/ml)	41575-94-4	Liquid		>240	>240	>240	>240							
			Carmustine (3.3 mg/ml, 10 % Ethanol)	154-93-8	Liquid		>240	imm	imm	>240	imm						
			Cisplatin (1 mg/ml)	15663-27-1	Liquid		>240	>240	>240	>240							
			Cyclo phosphamide (20 mg/ml)	50-18-0	Liquid		>240	>240	>240	>240	>10						
			Doxorubicin HCl (2 mg/ml)	25136-40-9	Liquid		>240	>240	>240	>240	>240						

Chemical Permeation Data Tables

C l a s s	S u b - C l a s s	Chemical Name	CAS	P h a s e	Breakthrough Time (Minutes)												
					Tychem® 2000 SFR	Tychem® 2000	Tyvek® 500	Tyvek® 600	Tyvek® 800	Tyvek® Isoclean® CS	Tychem® 4000	Tychem® 5000	Tychem® 6000 FR	Tychem® 6000	Tychem® RESPONDER® CSM	Tychem® 10000FR	Tychem® 10000
		Etoposide (Toposar®, Teva) (20 mg/ml, 33.2 % (v/v) Ethanol)	33419-42-0	Liquid		>240	>240	>240	>240	>240							
		Fluorouracil, 5- (50 mg/ml)	51-21-8	Liquid		>240	imm	imm	>240	imm							
		Ganciclovir (3 mg/ml)	82410-32-0	Liquid			>240	>240									
		Gemcitabine (38 mg/ml)	95058-81-4	Liquid			>60	>60	>240	>60							
		Ifosfamide (50 mg/ml)	3778-73-2	Liquid			imm	imm	>240	imm							
		Irinotecan (20 mg/ml)	100286-90-6	Liquid			>240	>240									
		Methotrexate (25 mg/ml, 0.1 N NaOH)	59-05-2	Liquid			>240	>240	>240								
		Mitomycin (0.5 mg/ml)	50-07-7	Liquid			>240	>240	>240								
		Oxaliplatin (5 mg/ml)	63121-00-6	Liquid			imm	imm	>240	imm							
		Paclitaxel (Hospira) (6 mg/ml, 49.7 % (v/v) Ethanol)	33069-62-4	Liquid		>240	>240	>240	>240	>240							
		Sodium chloride (9 g/l)	7647-14-5	Liquid			>240	>240									
		Thiotepa (10 mg/ml)	52-24-4	Liquid		>240	imm	imm	>240	imm							
		Vincristine sulfate (1 mg/ml)	2068-78-2	Liquid			>240	>240									
		Vinorelbine (0.1 mg/ml)	71486-22-1	Liquid			>240	>240									

> = greater than imm. = immediate (<10 minutes) {empty} = not tested L = Liquid G = Gas S = Solid
 * Actual breakthrough time; normalized breakthrough time is not available.
 ** Solid tested, vapor phase permeation measured.

Permeation data for Tyvek® Plus and Tyvek® Xpert

DuPont™ Tyvek® fabric provides an ideal balance of protection, durability and comfort. Tyvek® garments are composed of flash spun high density polyethylene fabric which creates a unique, nonwoven material available only from DuPont.

Tyvek® Plus and Tyvek® Xpert garments use a special type of Tyvek® fabric which has different physical properties and improved chemical resistance properties when compared to fabric used in standard Tyvek® garments.

Tyvek® Xpert garments have external sewn seams where the seam thread is visible on the outside of the garment. This seam design, when coupled with the enhanced fabric, offers improved overall garment protection levels. Tyvek® Xpert garments are CE certified to Types 5 & 6 (light liquid aerosols and airborne solid particles).

Tyvek® Plus garments have sewn seams which are over-taped. This seam design, when coupled with the enhanced fabric, offers further improved overall garment protection levels. Tyvek® Plus garments are CE certified to Types 4, 5 & 6 (light and heavy liquid aerosols and airborne solid particles).

NOTE

The permeation data provided in the following table only applies to Tyvek® Xpert and Tyvek® Plus garment fabrics.

Chemical Permeation Data Table

S u b - C l a s s	Chemical Name	CAS	P h a s e	Breakthrough Time (Minutes)			Tyvek® Isoclean® CS
				Tyvek® 500	Tyvek® 600	Tyvek® 800	
100							
102							
	Acetic acid (10%)	64-19-7	Liquid			imm	
	Acetic acid (2%)	64-19-7	Liquid			imm	
	Acetic acid (30%)	64-19-7	Liquid	imm	imm	imm	
	Acetic acid (5%)	64-19-7	Liquid			imm	
	Formic acid (30%)	64-18-6	Liquid	imm	imm		
120							
121							
	Formaldehyde (10%)	50-00-0	Liquid			imm	
	Formalin (10%)	50-00-0	Liquid			imm	
270							
271							
	Nicotine (9 mg/ml)	54-11-5	Liquid	>480	>480		
300							
301							
	Hydrogen peroxide (10%)	7722-84-1	Liquid	>10	>10		
	Hydrogen peroxide (30%)	7722-84-1	Liquid	imm	imm		
310							
311							
	Ethanol	64-17-5	Liquid			imm	
	Ethyl alcohol	64-17-5	Liquid			imm	
	Spiritus	64-17-5	Liquid			imm	
312							
	Isopropanol	67-63-0	Liquid			imm	
	Isopropanol (70%)	67-63-0	Liquid			imm	
	Isopropyl alcohol	67-63-0	Liquid			imm	
	Isopropyl alcohol (70%)	67-63-0	Liquid			imm	
	Propan -2-ol	67-63-0	Liquid			imm	

Chemical Permeation Data Table

C l a s s	S u b - C l a s s	Chemical Name	CAS	P h a s e	Breakthrough Time (Minutes)			Tyvek® Isoclean® CS
					Tyvek® 500	Tyvek® 600	Tyvek® 800	
		Propan -2-ol (70%)	67-63-0	Liquid			imm	
	314							
		Ethane 1,2-diol	107-21-1	Liquid	imm	imm	imm	
		Ethylene glycol	107-21-1	Liquid	imm	imm	imm	
		Glycerine	56-81-5	Liquid	>480	>480		
		Glycerol	56-81-5	Liquid	>480	>480		
		Glycol alcohol	107-21-1	Liquid	imm	imm	imm	
		Propane -1,2,3-triol	56-81-5	Liquid	>480	>480		
	340							
	340							
		Potassium chromate (sat)	7789-00-6	Liquid	>480	>480		
		Sodium hypochlorite (10-15 % active chlorine)	7681-52-9	Liquid	>240	>240	>480	
		Sodium hypochlorite (5.25-6%)	7681-52-9	Liquid	>480	>480	>480	
	350							
	350							
		Hydrofluoric acid (10%)	7664-39-3	Liquid			imm	
	370							
	370							
		Hydrochloric acid (16%)	7647-01-0	Liquid	imm	imm	imm	
		Hydrochloric acid (32%)	7647-01-0	Liquid	imm	imm	imm	
		Hydrofluoric acid (10%)	7664-39-3	Liquid			imm	
		Nitric acid (10%)	7697-37-2	Liquid	>120	>120		
		Nitric acid (30%)	7697-37-2	Liquid	imm	imm	imm	
		Phosphoric acid (50%)	7664-38-2	Liquid	>480	>480	>480	
		Sulfuric acid (18%)	7664-93-9	Liquid	>240	>240	>480	
		Sulfuric acid (30%)	7664-93-9	Liquid	>240	>240	>480	
		Sulfuric acid (50%)	7664-93-9	Liquid	>30	>30		
	380							
	380							

Chemical Permeation Data Table

C l a s s	S u b - C l a s s	Chemical Name	CAS	P h a s e	Breakthrough Time (Minutes)			Tyvek® Isoclean® CS
					Tyvek® 500	Tyvek® 600	Tyvek® 800	
500		Ammonium hydroxide (16%)	1336-21-6	Liquid	imm	imm	imm	
		Ammonium hydroxide (28% - 30%)	1336-21-6	Liquid	imm	imm		
		Caustic ammonia (16%)	1336-21-6	Liquid	imm	imm	imm	
		Caustic ammonia (28% - 30%)	1336-21-6	Liquid	imm	imm		
		Caustic soda (10%)	1310-73-2	Liquid	>480	>480	>480	
		Caustic soda (40%)	1310-73-2	Liquid	>30	>30		
		Caustic soda (50%)	1310-73-2	Liquid	>30	>30	>30	
		Caustic soda (>95%, solid)	1310-73-2	Solid	>480	>480		
		Potassium hydroxide (40%)	1310-58-3	Liquid	imm	imm	>120	
		Sodium hydroxide (10%)	1310-73-2	Liquid	>480	>480	>480	
		Sodium hydroxide (40%)	1310-73-2	Liquid	>30	>30		
		Sodium hydroxide (50%)	1310-73-2	Liquid	>30	>30	>30	
		Sodium hydroxide (>95%, solid)	1310-73-2	Solid	>480	>480		
507								
		Dimethyl sulfate	77-78-1	Liquid	imm	imm		
		Sulfuric acid dimethyl ester	77-78-1	Liquid	imm	imm		
550								
550								
		Sodium acetate (sat)	127-09-3	Liquid	>480	>480		
990								
991								
		Carboplatin (10 mg/ml)	41575-94-4	Liquid	>240	>240	>240	>240
		Carmustine (3.3 mg/ml, 10 % Ethanol)	154-93-8	Liquid	imm	imm	>240	imm
		Cisplatin (1 mg/ml)	15663-27-1	Liquid	>240	>240	>240	>240
		Cyclo phosphamide (20 mg/ml)	50-18-0	Liquid	>240	>240	>240	>10
		Doxorubicin HCl (2 mg/ml)	25136-40-9	Liquid	>240	>240	>240	>240

Chemical Permeation Data Table

C l a s s	S u b - C l a s s	Chemical Name	CAS	P h a s e	Breakthrough Time (Minutes)			Tyvek® Isoclean® CS
					Tyvek® 500	Tyvek® 600	Tyvek® 800	
		Etoposide (Toposar®, Teva) (20 mg/ml, 33.2 % (v/v) Ethanol)	33419-42-0	Liquid	>240	>240	>240	>240
		Fluorouracil, 5- (50 mg/ml)	51-21-8	Liquid	imm	imm	>240	imm
		Ganciclovir (3 mg/ml)	82410-32-0	Liquid	>240	>240		
		Gemcitabine (38 mg/ml)	95058-81-4	Liquid	>60	>60	>240	>60
		Ifosfamide (50 mg/ml)	3778-73-2	Liquid	imm	imm	>240	imm
		Irinotecan (20 mg/ml)	100286-90-6	Liquid	>240	>240		
		Methotrexate (25 mg/ml, 0.1 N NaOH)	59-05-2	Liquid	>240	>240	>240	
		Mitomycin (0.5 mg/ml)	50-07-7	Liquid	>240	>240	>240	
		Oxaliplatin (5 mg/ml)	63121-00-6	Liquid	imm	imm	>240	imm
		Paclitaxel (Hospira) (6 mg/ml, 49.7 % (v/v) Ethanol)	33069-62-4	Liquid	>240	>240	>240	>240
		Sodium chloride (9 g/l)	7647-14-5	Liquid	>240	>240		
		Thiotepa (10 mg/ml)	52-24-4	Liquid	imm	imm	>240	imm
		Vincristine sulfate (1 mg/ml)	2068-78-2	Liquid	>240	>240		
		Vinorelbine (0.1 mg/ml)	71486-22-1	Liquid	>240	>240		
<p>> = greater than imm. = immediate (<10 minutes) {empty} = not tested L = Liquid G = Gas S = Solid</p> <p>* Actual breakthrough time; normalized breakthrough time is not available.</p> <p>** Solid tested, vapor phase permeation measured.</p>								

APPENDIX
CHEMICAL INDEX - Alphabetical Listing - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
109-55-7	1,3-Propanediamine, N,N'-Dimethyl		140	148	95-76-1	Amino 3,4-dichlorobenzene, 1-	Amino 3,4-dichlorobenzene, 1-	140	145
112-34-5	2-(2-Butoxyethoxy) ethanol	Diethylene glycol monobutyl ether	310	311	62-53-3	Amino benzene	Amino benzene::Benzenamine::Phenyl amine	140	145
112-34-5	2-(2-Butoxyethoxy) ethanol	Diethylene glycol monobutyl ether	240	245	92-67-1	Amino diphenyl, 4-		140	145
111-90-0	2-(2-Ethoxyethoxy) ethanol		240	245	141-43-5	Amino ethanol, 2-	Amino ethanol, 2-	310	311
75-85-4	2-Methyl-2-Butanol	2-Methyl-2-Butanol::Amyl alcohol, tert-	310	313	141-43-5	Amino ethanol, 2-	Amino ethanol, 2-	140	141
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	270	270	111-41-1	Amino ethylethanolamine		140	142
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	390	390	111-41-1	Amino ethylethanolamine		140	148
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	270	274	111-41-1	Amino ethylethanolamine		310	311
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	500	509	140-31-8	Amino ethylpiperazine		140	141
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	390	391	140-31-8	Amino ethylpiperazine		140	148
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	500	500	140-31-8	Amino ethylpiperazine		270	274
75-07-0	Acetaldehyde		120	121	75-31-0	Amino propane, 2-	Amino propane, 2-	140	141
64-19-7	Acetic acid		100	102	504-29-0	Amino pyridine, 2-		270	271
111-15-9	Acetic acid 2 ethoxy ethyl ester	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol mono ethyl ether acetate	240	245	7664-41-7	Ammonia		380	380
110-49-6	Acetic acid 2 methoxy ethyl ester	Acetic acid 2 methoxy ethyl ester::Ethylene glycol monomethyl ether acetate	240	245	7664-41-7	Ammonia	30081410	350	350
108-05-4	Acetic acid ethenyl ester	Acetic acid ethenyl ester	220	222	7664-41-7	Ammonia	30081410	380	380
141-78-6	Acetic acid ethyl ester	Acetic acid ethyl ester	220	222	7664-41-7	Ammonia		350	350
628-63-7	Acetic acid pentyl ester	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222	1341-49-7	Ammonium bifluoride	Ammonium hydrogendifluoride	350	350
108-24-7	Acetic anhydride		160	161	1341-49-7	Ammonium bifluoride	Ammonium hydrogendifluoride	340	340
75-36-5	Acetic chloride	Acetic chloride::Ethanoyl chloride	110	111	12125-02-9	Ammonium chloride		340	340
67-64-1	Acetone	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391	12125-01-8	Ammonium fluoride		340	340
75-86-5	Acetone cyanohydrin	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313	1341-49-7	Ammonium hydrogendifluoride	Ammonium hydrogendifluoride	350	350
75-86-5	Acetone cyanohydrin	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431	1341-49-7	Ammonium hydrogendifluoride	Ammonium hydrogendifluoride	340	340
75-05-8	Acetonitrile	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	1336-21-6	Ammonium hydroxide	Caustic ammonia	380	380
13831-31-7	Acetoxyacetyl Chloride		110	111	628-63-7	Amyl acetate, n-	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222
75-36-5	Acetyl chloride	Acetic chloride::Ethanoyl chloride	110	111	71-41-0	Amyl alcohol	Amyl alcohol	310	311
79-10-7	Acroleic acid	Acroleic acid::Ethylene carboxylic acid::Propene acid	100	102	75-85-4	Amyl alcohol, tert-	2-Methyl-2-Butanol::Amyl alcohol, tert-	310	313
107-02-8	Acrolein	Prop-2-en-1-al	120	121	628-63-7	Amyl ester acetic acid	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222
79-06-1	Acrylamide	Acrylicamide::Propenamide	130	135	461-82-5	Anilin, 4-Trifluoromethoxy-		140	145
79-10-7	Acrylic acid	Acroleic acid::Ethylene carboxylic acid::Propene acid	100	102	62-53-3	Aniline	Amino benzene::Benzenamine::Phenyl amine	140	145
140-88-5	Acrylic acid ethyl ester	Acrylic acid ethyl ester	220	223	120-12-7	Anthracene	Anthracin	290	293
141-32-2	Acrylic acid n-butyl ester	Acrylic acid n-butyl ester::Propenoic acid butyl ester, 2-	220	223	120-12-7	Anthracin	Anthracin	290	293
79-06-1	Acrylicamide	Acrylicamide::Propenamide	130	135	7647-18-9	Antimony pentachloride	Pentachloroantimony	360	360
107-13-1	Acrylonitrile	Cyanoethylene::Propenenitrile, 2-::Propenoic acid nitrile::Vinyl cyanide	430	431	8007-56-5	Aqua regia	Aqua regia	370	370
814-68-6	Acryloyl Chloride		110	111	7784-34-1	Arsenic (III) chloride	Arsenic trichloride	340	340
111-69-3	Adipic acid dinitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	7784-34-1	Arsenic trichloride	Arsenic trichloride	340	340
111-69-3	Adipic acid nitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	7784-42-1	Arsine		350	350
111-69-3	Adiponitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	151-56-4	Aziridine	Aziridine	270	274
					123-75-1	Azolidine	Azolidine	270	274
					100-52-7	Benzaldehyde	Benzaldehyde	120	122
					62-53-3	Benzenamine	Amino benzene::Benzenamine::Phenyl amine	140	145
					71-43-2	Benzene		290	292
					98-88-4	Benzene carbonyl chloride	Benzene carbonyl chloride	110	112
					98-09-9	Benzene sulfone chloride	Benzene sulfone chloride	500	505
					98-09-9	Benzene sulfonyl chloride	Benzene sulfone chloride	500	505

111-69-3	Adipyl dinitrile	Adipic acid dinitrile::Adipic acid nitrile:: Adipyl dinitrile::Dicyanobutane, 1,4-	430	431
107-18-6	Allyl alcohol	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311
107-05-1	Allyl chloride	Chlor allylene::Chloro prene, 3-	260	265
5329-14-6	Amido sulfonic acid	Amido sulfonic acid::Sulfamidic acid	500	509
5329-14-6	Amido sulfonic acid	Amido sulfonic acid::Sulfamidic acid	370	370
75-64-9	Amino 2-methylpropane, 2-	Amino 2-methylpropane, 2-::Trimethyl aminomethane	140	143
95-76-1	Amino 3,4-dichlorobenzene, 1-	Amino 3,4-dichlorobenzene, 1-	260	263

APPENDIX
CHEMICAL INDEX - Alphabetical Listing - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
108-98-5	Benzene thiol	Benzene thiol	500	501	75-65-0	Butanol, tert-	Methyl propan-2-ol, 2-	310	313
328-84-7	Benzene, Dichloro-4-Trifluoro		260	263	78-93-3	Butanone	Butanone::MEK	390	391
92-87-5	Benzidine	Biphenyl 4,4'-diamine, 1,1':: Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	149	96-29-7	Butanone oxime, 2-	Butanone oxime, 2-	150	150
92-87-5	Benzidine	Biphenyl 4,4'-diamine, 1,1':: Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	145	123-73-9	Butenal, 2-	Butenal, 2::Ethane diol dipropoate, 1,2::Methyl acrolein::Propylene aldehyde	120	121
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	390	390	111-76-2	Butoxy ethanol, 2-	Ethylene glycol monobutyl ether	240	245
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	270	270	143-22-6	Butoxytriglycol		240	245
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	270	274	123-86-4	Butyl acetate, n-		220	222
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	390	391	141-32-2	Butyl acrylate, n-	Acrylic acid n-butyl ester::Propenoic acid butyl ester, 2-	220	223
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	500	500	71-36-3	Butyl alcohol, n-	Butanol, n::Butyl alcohol, n-	310	311
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	500	509	109-73-9	Butyl amine		140	141
100-47-0	Benzo nitrile	Cyanobenzene::Phenyl cyanide	430	432	75-64-9	Butyl amine, tert-	Amino 2-methylpropane, 2::Trimethyl aminomethane	140	143
98-07-7	Benzo trichloride		260	263	112-07-2	Butyl Cellosolve Acetate		240	245
98-88-4	Benzoyl chloride	Benzene carbonyl chloride	110	112	29911-28-2	Butyl Dipropasol Solvent		240	245
100-51-6	Benzyl alcohol	Hydroxy toluene	310	312	142-96-1	Butyl ether, n-		240	241
100-44-7	Benzyl chloride	Chloro toluene, alpha-	260	266	1118-46-3	Butyl stannium trichloride	Butyl stannium trichloride	470	470
501-53-1	Benzyl chloro formate		110	113	592-34-7	Butylchloroformate		110	113
140-29-4	Benzyl cyanide	Phenyl acetonitrile	430	432	592-34-7	Butylchloroformate		220	221
103-67-3	Benzyl methylamine, N-	Methyl benzylamine, N-	140	146	592-34-7	Butylchloroformate		260	260
103-67-3	Benzyl methylamine, N-	Methyl benzylamine, N-	290	292	123-72-8	Butyraldehyde, n-	Butyraldehyde, n-	120	121
92-87-5	Biphenyl 4,4'-diamine, 1,1'-	Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	145	107-92-6	Butyric Acid		100	102
92-87-5	Biphenyl 4,4'-diamine, 1,1'-	Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	149	10112-91-1	Calomel	Calomel	340	340
1675-54-3	Bis (4-(2,3-epoxypropoxy)phenyl)propane	Bis (4-(2,3-epoxypropoxy)phenyl) propane::Isopropylidenediphenol diglycidyl ether, 4,4'-	270	275	75-15-0	Carbon disulfide		500	502
1675-54-3	Bis phenol A diglycidyl ether	Bis (4-(2,3-epoxypropoxy)phenyl) propane::Isopropylidenediphenol diglycidyl ether, 4,4'-	270	275	630-08-0	Carbon monoxide		350	350
mix	Black Liquor		590	590	56-23-5	Carbon tetrachloride	Tetrachloro methane	260	261
109-63-7	Boron fluoride ethyl ether	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590	75-73-0	Carbon tetrafluoride	Carbon tetrafluoride	260	261
10294-34-5	Boron trichloride		360	360	41575-94-4	Carboplatin		990	991
10294-34-5	Boron trichloride		350	350	154-93-8	Carmustine		990	991
7637-07-2	Boron trifluoride		350	350	1336-21-6	Caustic ammonia	Caustic ammonia	380	380
7637-07-2	Boron trifluoride		360	360	1310-73-2	Caustic soda	Caustic soda	380	380
109-63-7	Boron trifluoride diethyl etherate	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590	110-80-5	Cellosolve acetate	Cellosolve acetate::Ethyl Cellosolve®:: Ethylene glycol monoethyl ether	240	245
353-42-4	Boron trifluoride dimethyl etherate		590	590	mix	Chemguard S-764P14A	Chemguard S-764P14A	590	590
109-63-7	Boron trifluoride etherate	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590	mix	Chemidize 727 ND		590	590
1003-09-4	Brom thiophene, 2-		500	509	107-05-1	Chlor allylene	Chloro allylene::Chloro prene, 3-	260	265
7726-95-6	Bromine		330	330	76-06-2	Chlor trinitromethan	Chloro picrin::Nitro chlormethan	260	261
460-00-4	Bromo 4-fluorobenzene, 1-	Bromo 4-fluorobenzene, 1-	260	263	57-74-9	Chlordane		260	261
460-00-4	Bromo fluorobenzene, 4-	Bromo 4-fluorobenzene, 1-	260	263	7782-50-5	Chlorine		350	350
74-83-9	Bromo methane	Bromo methane	260	261	7782-50-5	Chlorine		330	330
927-68-4	Bromoethyl Acetate, 2-		260	261	10545-99-0	Chlorine sulfide	Sulphur dichloride	500	502
927-68-4	Bromoethyl Acetate, 2-		220	222	7790-91-2	Chlorine trifluoride		350	350
75-25-2	Bromoform		260	261	96-24-2	Chloro 1,2-propanediol, 3-		310	314
78-94-4	But-3-en-2-one	But-3-en-2-one	390	391	95-49-8	Chloro 1-methylbenzene, 2-	Chloro 1-methylbenzene, 2-	260	263
					95-49-8	Chloro 1-methylbenzene, 2-	Chloro 1-methylbenzene, 2-	310	316
					106-89-8	Chloro 2,3-epoxy propane, 1-	Chloro 2,3-epoxy propane, 1-	270	275
					106-89-8	Chloro 2,3-epoxy propane, 1-	Chloro 2,3-epoxy propane, 1-	260	261
					88-73-3	Chloro 2-nitrobenzene, 1-	Chloro 2-nitrobenzene, 1-	260	263

106-99-0	Butadiene, 1,3-	Vinyl ethylene	290	296
123-72-8	Butanal, n-	Butyraldehyde, n-	120	121
71-36-3	Butanol, 1-	Butanol, n-:Butyl alcohol, n-	310	311
71-36-3	Butanol, n-	Butanol, n-:Butyl alcohol, n-	310	311

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CAS Number	Chemical Name	Synonym	Class	Sub-Class
88-73-3	Chloro 2-nitrobenzene, 1-	Chloro 2-nitrobenzene, 1-	440	442
79-11-8	Chloro acetic acid		100	103
78-95-5	Chloro acetone	Chloro propan-2-one, 1-	390	391
79-04-9	Chloro acetyl chloride		110	111
920-37-6	Chloro acrylonitrile, 2-		260	264
920-37-6	Chloro acrylonitrile, 2-		430	431
106-47-8	Chloro aniline, p-	Chloro benzenamine, 4-	140	145
106-47-8	Chloro benzenamine, 4-	Chloro benzenamine, 4-	140	145
108-90-7	Chloro benzene	Phenyl chloride	260	263
5216-25-1	Chloro benzotrifluoride, 4-		260	263
98-56-6	Chloro benzotrifluoride, 4-		260	263
107-07-3	Chloro ethanol, 2-	Ethylene chlorohydrin::Glycol chlorohydrin	310	315
107-07-3	Chloro ethanol, 2-	Ethylene chlorohydrin::Glycol chlorohydrin	260	261
75-01-4	Chloro ethene	Chloro ethene	260	264
67-66-3	Chloro form	Trichloro methane	260	261
107-30-2	Chloro methyl methyl ether	Methoxy chloromethane	240	241
106-48-9	Chloro phenol, p-	Hydroxy chlorobenzene	310	316
106-48-9	Chloro phenol, p-	Hydroxy chlorobenzene	260	263
76-06-2	Chloro picrin	Chloro picrin::Nitro chlormethan	260	261
107-05-1	Chloro prene, 3-	Chlor allylene::Chloro prene, 3-	260	265
78-95-5	Chloro propan-2-one, 1-	Chloro propan-2-one, 1-	390	391
100-44-7	Chloro toluene, alpha-	Chloro toluene, alpha-	260	266
95-49-8	Chloro toluene, o-	Chloro 1-methylbenzene, 2-	310	316
95-49-8	Chloro toluene, o-	Chloro 1-methylbenzene, 2-	260	263
105-39-5	Chloroacetic ethylester		220	222
67-66-3	Chloroform	Trichloro methane	260	261
7790-94-5	Chlorosulfonic acid		500	504
7790-94-5	Chlorosulfonic acid		370	370
7790-94-5	Chlorosulfonic acid		370	370
7790-94-5	Chlorosulfonic acid		500	504
1333-82-0	Chromic acid (CrO3)		370	370
1333-82-0	Chromic acid (H2SO4 x CrO3)		370	370
15663-27-1	Cisplatin		990	991
77-92-9	Citric acid	Hydroxy 1,2,3-propanetricarboxylic acid, 2-	100	104
68956-56-9	Citrus Terpenes Mixture		140	148
8001-58-9	Creosote		310	316
95-48-7	Cresol o-	Hydroxy toluene, o-	310	316
1319-77-3	Cresols, mixed isomers	Cresylic acid::Methyl phenols	310	316
1319-77-3	Cresylic acid	Cresylic acid::Methyl phenols	310	316
123-73-9	Croton aldehyde	Butenal, 2-::Ethane diol dipropionate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
8002-05-9	Crude oil, California	Mineral oil	290	294
8002-05-9	Crude oil, California	Mineral oil	290	291
98-82-8	Cumene	Isopropyl benzene::Phenyl propane, 2-	290	292
420-04-2	Cyanamide		130	132
108-77-0	Cyanide chloride	Trichloro 1,3,5-triazine, 2,4,6-	270	274

CAS Number	Chemical Name	Synonym	Class	Sub-Class
108-77-0	Cyanide chloride	Trichloro 1,3,5-triazine, 2,4,6-	260	263
100-47-0	Cyanobenzene	Cyanobenzene::Phenyl cyanide	430	432
107-13-1	Cyanoethylene	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
75-05-8	Cyanomethane	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431
75-86-5	Cyanopropan-2-ol, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431
75-86-5	Cyanopropan-2-ol, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313
110-82-7	Cyclo hexane		290	291
108-94-1	Cyclo hexanone	Hexanone::Pimelic ketone	390	391
3173-53-3	Cyclo hexyl isocyanate		210	211
1552-12-1	Cyclo octadiene		290	296
50-18-0	Cyclo phosphamide		990	991
108-93-0	Cyclohexanol	Hexalin	310	312
	mix Dahlgren Decon solution	Dahlgren Decon solution	590	590
117-81-7	DEHP	DEHP	220	226
108-83-8	Di Isobutyl Ketone	Dimethyl-4-Heptanone, 2,6-	390	391
123-42-2	Diacetone Alcohol		390	391
13360-57-1	Diamino sulfo chloride		260	261
92-87-5	Diaminobiphenyl, 4,4'-	Biphenyl 4,4'-diamine, 1,1'::Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	149
92-87-5	Diaminobiphenyl, 4,4'-	Biphenyl 4,4'-diamine, 1,1'::Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	145
92-87-5	Diaminodiphenyl, p-	Biphenyl 4,4'-diamine, 1,1'::Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	149
92-87-5	Diaminodiphenyl, p-	Biphenyl 4,4'-diamine, 1,1'::Diaminobiphenyl, 4,4'::Diaminodiphenyl, p-	140	145
101-77-9	Diaminodiphenylmethane, 4,4'-	Diaminodiphenylmethane, 4,4'-	140	145
101-77-9	Diaminodiphenylmethane, 4,4'-	Diaminodiphenylmethane, 4,4'-	140	149
107-15-3	Diaminoethane, 1,2-	Diaminoethane, 1,2-	140	148
19287-45-7	Diborane		350	350
96-12-8	Dibromo -3-chloropropane, 1,2-		260	261
106-93-4	Dibromoethane, 1,2-	Dibromoethane, 1,2-	260	261
84-74-2	Dibutyl 1,2-benzenedicarboxylate	Dibutyl 1,2-benzenedicarboxylate	220	226
84-74-2	Dibutyl phthalate	Dibutyl 1,2-benzenedicarboxylate	220	226
109-43-3	Dibutyl sebacate		220	224
95-50-1	Dichlorbenzen, 1,2-		260	263
541-73-1	Dichlorbenzen, 1,3-		260	263
106-46-7	Dichlorbenzen, 1,4-		260	263
107-06-2	Dichlorethane, 1,2.-	Ethylene dichloride	260	261
534-07-6	Dichloro -2-propanone, 1,3-	Dichloro -2-propanone, 1,3-	260	261
534-07-6	Dichloro -2-propanone, 1,3-	Dichloro -2-propanone, 1,3-	390	391
101-14-4	Dichloro -4,4'-methylenedianiline, 2,2'-	Dichloro -4,4'-methylenedianiline, 2,2'-	140	149
30894-74-7	Dichloro -6-isopropyl-S-triazine, 2,4-		270	274
534-07-6	Dichloro acetone, 1,3-	Dichloro -2-propanone, 1,3-	260	261
534-07-6	Dichloro acetone, 1,3-	Dichloro -2-propanone, 1,3-	390	391
79-36-7	Dichloro acetyl chloride		110	111
95-76-1	Dichloro aniline. 3,4-	Amino 3,4-dichlorobenzene. 1-	260	263

UN 1052	Chemical Name, (C, I)	Chemical Name, (C, I)	EC	EC
95-76-1	Dichloro aniline, 3,4-	Amino 3,4-dichlorobenzene, 1-	140	145
111-44-4	Dichloro ethyl ether		240	241
111-44-4	Dichloro ethyl ether		260	261

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CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
75-35-4	Dichloro ethylene, 1,1-	Dichloro ethylene, 1,1-	260	264	62-75-9	Dimethyl nitrosamine	Methyl N-nitrosomethanamine, N-	450	450
75-09-2	Dichloro methane	Methylene chloride	260	261	121-69-7	Dimethyl phenylamine, N,N-	Dimethyl phenylamine, N,N-	140	146
542-75-6	Dichloro propene, 1,3-		260	261	77-78-1	Dimethyl sulfate	Sulfuric acid dimethyl ester	500	507
78-88-6	Dichloro propene, 2,3-		260	261	75-18-3	Dimethyl sulfide		500	502
4109-96-0	Dichloro silane		480	480	67-68-5	Dimethyl sulfoxide		500	503
628-76-2	Dichloropentane		260	261	108-83-8	Dimethyl-4-Heptanone, 2,6-	Dimethyl-4-Heptanone, 2,6-	390	391
111-69-3	Dicyanobutane, 1,4-	Adipic acid dinitrile::Adipic acid nitrile:: Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	108-59-8	Dimethylmalonate	Dimethylmalonate	220	224
mix	Diesel automotive test fuel		290	291	108-59-8	Dimethylmalonate	Dimethylmalonate	220	220
68334-30-5	Diesel fuel		290	291	534-52-1	Dinitro-o-cresol, 4,6-	Dinitro-o-cresol, 4,6-	310	316
mix	Diesel Fuel Grade D-2		290	290	534-52-1	Dinitro-o-cresol, 4,6-	Dinitro-o-cresol, 4,6-	440	442
111-42-2	Diethanolamine		140	142	534-52-1	Dinitrocresol	Dinitro-o-cresol, 4,6-	440	442
109-89-7	Diethyl amine	Ethyl ethanamine, N-	140	142	534-52-1	Dinitrocresol	Dinitro-o-cresol, 4,6-	310	316
91-66-7	Diethyl aniline crude		140	146	123-91-1	Dioxane, 1,4-		270	278
91-66-7	Diethyl aniline, N,N-		140	146	101-68-8	Diphenyl methane diisocyanate, 4,4'-	Methylene diphenyl diisocyanate, 4,4'-	210	212
25340-17-4	Diethyl benzene		290	292	503-38-8	Diphosgene		110	113
121-44-8	Diethyl ethanamine, N,N-	Diethyl ethanamine, N,N-	140	143	503-38-8	Diphosgene		260	260
60-29-7	Diethyl ether	Diethyl ether	240	241	503-38-8	Diphosgene		220	221
117-81-7	Diethyl hexyl phthalate	DEHP	220	226	29911-27-1	Dipropylene Glycol Monopropyl Ether		240	245
91-67-8	Diethyl m-toluidine, N,N-		140	145	1313-82-2	Disodium sulfide		340	340
64-67-5	Diethyl sulfate	Sulfuric acid diethyl ester	500	507	10025-67-9	Disulphur dichloride	Disulphur dichloride	500	502
111-46-6	Diethylene Glycol		310	314	1321-74-0	Divinyl Benzene		290	292
112-34-5	Diethylene glycol monobutyl ether	Diethylene glycol monobutyl ether	310	311	mix	Dowtherm Heat Transfer Fluid	Dowtherm Heat Transfer Fluid	590	590
112-34-5	Diethylene glycol monobutyl ether	Diethylene glycol monobutyl ether	240	245	25136-40-9	Doxorubicin HCl		990	991
111-77-3	Diethylene Glycol Monomethyl Ether		240	245	mix	DuPont Activator 193S		590	590
6881-94-3	Diethylene Glycol Monopropyl Ether		240	245	mix	DuPont Activator 4505S		590	590
110-91-8	Diethylene imide oxide	Diethylene imide oxide	270	274	mix	DuPont Activator 4507S		590	590
110-91-8	Diethylene imide oxide	Diethylene imide oxide	270	278	15520-10-2	Dytek® A		140	148
111-40-0	Diethylene triamine		140	148	106-89-8	Epichlorohydrin	Chloro 2,3-epoxy propane, 1-	270	275
755-95-3	Diiodo-1,1,2,2-tetrafluorobutane, 1,4-		260	261	106-89-8	Epichlorohydrin	Chloro 2,3-epoxy propane, 1-	260	261
7087-68-5	Diisopropylethylamine (DIPEA)		140	141	75-21-8	Epoxy ethane	Epoxy ethane	270	275
5394-63-8	Diketene Acetone		390	391	75-56-9	Epoxy propane, 1,2-	Epoxy propane, 1,2-	270	275
5394-63-8	Diketene Acetone		270	278	107-21-1	Ethane 1,2-diol	Ethane 1,2-diol::Glycol alcohol	310	314
127-19-5	Dimethyl acetamide, N,N-		130	132	144-62-7	Ethane dioic acid	Ethane dioic acid	100	104
124-40-3	Dimethyl amine		140	142	123-73-9	Ethane diol dipropanoate, 1,2-	Butenal, 2-::Ethane diol dipropanoate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
121-69-7	Dimethyl aniline, N,N-	Dimethyl phenylamine, N,N-	140	146	75-05-8	Ethane nitrile	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431
75-78-5	Dimethyl dichlorosilane		480	480	75-08-1	Ethane thiol	Ethane thiol	500	501
115-10-6	Dimethyl ether		240	241	79-00-5	Ethane trichloride	Ethane trichloride	260	261
68-12-2	Dimethyl formamide, N,N-		130	132	64-17-5	Ethanol	Ethyl alcohol::Spirit	310	311
624-49-7	Dimethyl fumarate		220	224	141-43-5	Ethanol amine	Amino ethanol, 2-	140	141
57-14-7	Dimethyl hydrazine, N,N-		280	280	141-43-5	Ethanol amine	Amino ethanol, 2-	310	311
67-64-1	Dimethyl ketal	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone:: Propan -2-one::Pyroacetic ether	390	391	75-36-5	Ethanoyl chloride	Acetic chloride::Ethanoyl chloride	110	111
67-64-1	Dimethyl ketone	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone:: Propan -2-one::Pyroacetic ether	390	391	594-45-6	Ethansulphonic acid		500	504
624-48-6	Dimethyl maleate		220	224	110-80-5	Ethoxy ethanol, 2-	Cellosolve acetate::Ethyl Cellosolve®:: Ethylene glycol monoethyl ether	240	245
593-74-8	Dimethyl mercury in decane		470	470	111-15-9	Ethoxy ethylacetat	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol mono ethyl ether acetate	240	245
756-79-6	Dimethyl Methyl Phosphonate		460	462	112-50-5	Ethoxytriglycol		240	245

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CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
141-78-6	Ethyl acetate	Acetic acid ethyl ester	220	222	51-21-8	Fluorouracil, 5-		990	991
140-88-5	Ethyl acrylate	Acrylic acid ethyl ester	220	223	50-00-0	Formaldehyde	Formalin	120	121
64-17-5	Ethyl alcohol	Ethyl alcohol::Spiritus	310	311	50-00-0	Formalin	Formalin	120	121
75-04-7	Ethyl amine		140	141	50-00-0	Formalin		120	121
100-41-4	Ethyl benzene	Phenyl ethane	290	292	64-18-6	Formic acid		100	102
97-95-0	Ethyl Butanol		310	312	68476-30-2	Fuel-oil no 2		290	291
110-80-5	Ethyl Cellosolve®	Cellosolve acetate::Ethyl Cellosolve®:: Ethylene glycol monoethyl ether	240	245	98-01-1	Furaldehyde, 2-	Furaldehyde, 2-	270	277
75-00-3	Ethyl chloride		260	261	110-00-9	Furan		270	277
109-89-7	Ethyl ethanamine, N-	Ethyl ethanamine, N-	140	142	98-01-1	Furfural	Furaldehyde, 2-	270	277
60-29-7	Ethyl ether	Diethyl ether	240	241	82410-32-0	Ganciclovir		990	991
111-15-9	Ethyl glycol acetate	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol mono ethyl ether acetate	240	245	mix	Gasoline, leaded		290	291
149-57-5	Ethyl hexanoic acid		100	102	86290-81-5	Gasoline, unleaded		290	291
75-08-1	Ethyl mercaptan	Ethane thiol	500	501	308066-70-8	Gasoline, unleaded E10 (87 Octane)		290	291
75-05-8	Ethyl nitrile	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	95058-81-4	Gemcitabine		990	991
56-38-2	Ethyl parathion		460	462	111-30-8	Glutaral	Glutaral::Pentanedial, 1,5-	120	121
541-41-3	Ethylchloroformate		260	260	111-30-8	Glutaraldehyde	Glutaral::Pentanedial, 1,5-	120	121
541-41-3	Ethylchloroformate		220	221	56-81-5	Glycerine	Glycerine::Propane -1,2,3-triol	310	314
541-41-3	Ethylchloroformate		110	113	56-81-5	Glycerol	Glycerine::Propane -1,2,3-triol	310	314
79-10-7	Ethylene carboxylic acid	Acroleic acid::Ethylene carboxylic acid:: Propene acid	100	102	107-21-1	Glycol alcohol	Ethane 1,2-diol::Glycol alcohol	310	314
107-07-3	Ethylene chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	260	261	107-07-3	Glycol chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	310	315
107-07-3	Ethylene chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	310	315	107-07-3	Glycol chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	260	261
107-15-3	Ethylene diamine	Diaminoethane, 1,2-	140	148	79-14-1	Glycolic acid	Hydroxy acetic acid	100	103
106-93-4	Ethylene dibromide	Dibromoethane, 1,2-	260	261	mix	Green Liquor		590	590
107-06-2	Ethylene dichloride	Ethylene dichloride	260	261	142-82-5	Heptane		290	291
107-21-1	Ethylene glycol	Ethane 1,2-diol::Glycol alcohol	310	314	87-68-3	Hexachloro butadiene		260	264
818-61-1	Ethylene glycol acrylate		220	223	58-89-9	Hexachloro cyclohexane, 1,2,3,4,5,6-	Hexachloro cyclohexane, 1,2,3,4,5,6-	260	261
111-15-9	Ethylene glycol mono ethyl ether acetate	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol mono ethyl ether acetate	240	245	76-16-4	Hexafluoro ethane	Perfluoroethane	260	261
111-76-2	Ethylene glycol monobutyl ether	Ethylene glycol monobutyl ether	240	245	382-10-5	Hexafluoro isobutylene	Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	260	261
110-80-5	Ethylene glycol monoethyl ether	Cellosolve acetate::Ethyl Cellosolve®:: Ethylene glycol monoethyl ether	240	245	108-93-0	Hexalin	Hexalin	310	312
112-25-4	Ethylene Glycol Monohexyl Ether		240	245	999-97-3	Hexamethyl disilazane	Hexamethyl disilazane, 1,1,1,3,3,3-	480	480
109-86-4	Ethylene glycol monomethyl ether	Ethylene glycol monomethyl ether	240	245	999-97-3	Hexamethyl disilazane, 1,1,1,3,3,3-	Hexamethyl disilazane, 1,1,1,3,3,3-	480	480
109-86-4	Ethylene glycol monomethyl ether	Ethylene glycol monomethyl ether	310	311	124-09-4	Hexamethylene diamine		140	148
110-49-6	Ethylene glycol monomethyl ether acetate	Acetic acid 2 methoxy ethyl ester:: Ethylene glycol monomethyl ether acetate	240	245	822-06-0	Hexamethylene diisocyanate		210	211
151-56-4	Ethylene imine	Aziridine	270	274	110-54-3	Hexane, n-		290	291
75-21-8	Ethylene oxide	Epoxy ethane	270	275	108-94-1	Hexanone	Hexanone::Pimelic ketone	390	391
127-18-4	Ethylene tetrachloride	Ethylene tetrachloride	260	264	592-41-6	Hexene		290	294
79-01-6	Ethylene trichloride	Ethylene trichloride	260	264	108-10-1	Hexone	Isobutyl methyl ketone::Methyl pentan-2-one, 4-	390	391
33419-42-0	Etoposide (Toposar®, Teva)		990	991	112-59-4	Hexyl Carbitol Solvent		240	245
7758-94-3	Ferric (II) chloride		340	340	6092-54-2	Hexyl chloro formate, 2-		220	221
7705-08-0	Ferric (III) chloride		340	340	302-01-2	Hydrazine		280	280
7782-41-4	Fluorine		350	350	10217-52-4	Hydrazine hydrate		280	280
462-06-6	Fluorobenzene		260	263	10034-85-2	Hydriodic acid		370	370
16872-11-0	Fluoroboric acid		370	370	10035-10-6	Hydrobromic acid		370	370
16961-83-4	Fluorosilicic acid		370	370	7647-01-0	Hydrochloric acid		370	370
					7664-39-3	Hydrofluoric acid		370	370

7789-21-1	Fluorosulfonic acid		370	370

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CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
7664-39-3	Hydrofluoric acid		350	350	29921-57-1	Isopropyl bromoacetate		220	222
10035-10-6	Hydrogen bromide		370	370	29921-57-1	Isopropyl bromoacetate		260	260
10035-10-6	Hydrogen bromide		350	350	29921-57-1	Isopropyl bromoacetate		110	110
7647-01-0	Hydrogen chloride		350	350	1675-54-3	Isopropylidenediphenol diglycidyl ether, 4,4'-	Bis (4-(2,3-epoxypropoxy)phenyl) propane::Isopropylidenediphenol diglycidyl ether, 4,4'-	270	275
7647-01-0	Hydrogen chloride		370	370	50815-00-4	JP-4 Jet Fuel		290	291
74-90-8	Hydrogen cyanide		350	350	94114-58-6	JP-8 Jet Fuel		290	291
74-90-8	Hydrogen cyanide		340	345	8008-20-6	Kerosene		290	291
74-90-8	Hydrogen cyanide		370	370	67-64-1	Ketone propane	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
7664-39-3	Hydrogen fluoride		350	350	50-21-5	Lactic Acid		100	103
7664-39-3	Hydrogen fluoride		370	370	541-25-3	Lewisite (L), FINABEL 0.7.C		470	470
7722-84-1	Hydrogen peroxide		300	301	541-25-3	Lewisite (L), MIL-STD-282		470	470
7783-07-5	Hydrogen selenide		350	350	5989-27-5	Limonene d-	Methyl 4-isopropenyl-1-cyclohexene, 1-	290	296
7783-06-4	Hydrogen sulfide		350	350	58-89-9	Lindane	Hexachloro cyclohexane, 1,2,3,4,5,6-	260	261
7783-06-4	Hydrogen sulfide		500	502	7447-41-8	Lithium chloride		340	340
77-92-9	Hydroxy 1,2,3-propanetricarboxylic acid, 2-	Hydroxy 1,2,3-propanetricarboxylic acid, 2-	100	104	1310-65-2	Lithium hydroxide		380	380
60-24-2	Hydroxy 1-ethanethiol, 2-	Hydroxy 1-ethanethiol, 2-	500	501	8052-41-3	Low boiling point naphtha - unspecified	Low boiling point naphtha - unspecified	290	291
60-24-2	Hydroxy 1-ethanethiol, 2-	Hydroxy 1-ethanethiol, 2-	310	311	mix	m-Cresol 55%, p-Cresol 30%, Phenol 15%		310	316
75-86-5	Hydroxy 2-methylpropionitrile, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313	121-75-5	Malathion		460	462
75-86-5	Hydroxy 2-methylpropionitrile, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431	108-31-6	Maleic anhydride		160	161
88-75-5	Hydroxy 2-nitrobenzene, 1-	Hydroxy 2-nitrobenzene, 1-	440	442	78-93-3	MEK	Butanone::MEK	390	391
88-75-5	Hydroxy 2-nitrobenzene, 1-	Hydroxy 2-nitrobenzene, 1-	310	316	68-11-1	Mercapto acetic acid	Mercapto acetic acid	100	103
79-14-1	Hydroxy acetic acid	Hydroxy acetic acid	100	103	68-11-1	Mercapto acetic acid	Mercapto acetic acid	500	501
106-48-9	Hydroxy chlorobenzene	Hydroxy chlorobenzene	260	263	60-24-2	Mercapto ethanol	Hydroxy 1-ethanethiol, 2-	500	501
106-48-9	Hydroxy chlorobenzene	Hydroxy chlorobenzene	310	316	60-24-2	Mercapto ethanol	Hydroxy 1-ethanethiol, 2-	310	311
75-86-5	Hydroxy isobutyronitrile	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431	10112-91-1	Mercuric I chloride	Calomel	340	340
75-86-5	Hydroxy isobutyronitrile	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313	7487-94-7	Mercuric II chloride		340	340
107-18-6	Hydroxy propene	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311	7439-97-6	Mercury		330	330
100-51-6	Hydroxy toluene	Hydroxy toluene	310	312	79-41-4	Methacrylic acid	Methyl propenoic acid, 2-	100	102
95-48-7	Hydroxy toluene, o-	Hydroxy toluene, o-	310	316	124-63-0	Methanesulfonyl chloride		500	505
6303-21-5	Hypophosphorus acid	Phosphinic acid	370	370	75-75-2	Methanesulphonic acid		500	504
3778-73-2	Ifosfamide		990	991	74-93-1	Methanethiol	Methanethiol	350	350
7553-56-2	Iodine		330	330	74-93-1	Methanethiol	Methanethiol	500	501
74-88-4	Iodomethane	Iodomethane	260	261	74-93-1	Methanethiol	Methanethiol	380	380
100286-90-6	Irinotecan		990	991	67-56-1	Methanol		310	311
123-92-2	Iso Amyl Acetate		220	222	16752-77-5	Methomyl		230	233
123-51-3	Isoamyl alcohol	Methyl butan-1-ol, 3-	310	312	59-05-2	Methodrexate		990	991
78-83-1	Isobutanol		310	312	1634-04-4	Methoxy 2-methylpropane, 2-	Methoxy 2-methylpropane, 2-	240	241
78-83-1	Isobutanol		310	311	107-30-2	Methoxy chloromethane	Methoxy chloromethane	240	241
108-10-1	Isobutyl methyl ketone	Isobutyl methyl ketone::Methyl pentan-2-one, 4-	390	391	109-86-4	Methoxy ethanol, 2	Ethylene glycol monomethyl ether	310	311
99-63-8	Isophthaloyldichloride		110	112	109-86-4	Methoxy ethanol, 2	Ethylene glycol monomethyl ether	240	245
67-63-0	Isopropanol	Isopropanol::Isopropyl alcohol	310	312	110-49-6	Methoxy ethylacetate, 2-	Acetic acid 2 methoxy ethyl ester::Ethylene glycol monomethyl ether acetate	240	245
108-21-4	Isopropyl Acetate		220	222	112-35-6	Methoxytriglycol		240	245
67-63-0	Isopropyl alcohol	Isopropanol::Isopropyl alcohol	310	312	1658-42-0	Methyl -2-pyridyl acetate		220	222
75-31-0	Isopropyl amine	Amino propane, 2-	140	141	4553-62-2	Methyl 1,5-pentantenedinitrile, 2-		430	431
					80-62-6	Methyl 2-methyl-2-propenoate	Methyl 2-methyl-2-propenoate	220	223

UN 1011 Isopropyl benzene	UN 1011 Isopropyl benzene	UN 1011 Isopropyl benzene	UN 1011 Isopropyl benzene	UN 1011 Isopropyl benzene
98-82-8	Isopropyl benzene	Isopropyl benzene::Phenyl propane, 2-	290	292

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CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
872-50-4	Methyl 2-pyrrolidin, N-		130	132					
5989-27-5	Methyl 4-isopropenyl-1-cyclohexene, 1-	Methyl 4-isopropenyl-1-cyclohexene, 1-	290	296	71-55-6	Methyl trichloromethane	Methyl chloroform::Methyl trichloromethane	260	261
79-20-9	Methyl Acetate		220	222	75-79-6	Methyl trichlorosilane		480	480
67-64-1	Methyl acetyl	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone:: Propan -2-one::Pyroacetic ether	390	391	78-94-4	Methyl vinyl ketone	But-3-en-2-one	390	391
123-73-9	Methyl acrolein	Butenal, 2-::Ethane diol dipropionate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121	1761-71-3	Methylen Isocyclohexylamine, 4,4-		140	148
96-33-3	Methyl acrylate		220	223	101-14-4	Methylene bis(2-Chloroaniline), 4,4-	Dichloro -4,4'-methylenedianiline, 2,2'-	140	149
74-89-5	Methyl amine		140	141	74-95-3	Methylene bromide		260	261
95-53-4	Methyl aniline, o-	Methyl aniline, o-	140	145	75-09-2	Methylene chloride	Methylene chloride	260	261
108-88-3	Methyl benzol	Methyl benzol	290	292	101-77-9	Methylene dianiline	Diaminodiphenylmethane, 4,4'-	140	149
103-67-3	Methyl benzylamine, N-	Methyl benzylamine, N-	290	292	101-77-9	Methylene dianiline	Diaminodiphenylmethane, 4,4'-	140	145
103-67-3	Methyl benzylamine, N-	Methyl benzylamine, N-	140	146	101-68-8	Methylene diphenyl diisocyanate, 4,4'-	Methylene diphenyl diisocyanate, 4,4'-	210	212
74-83-9	Methyl bromide	Bromo methane	260	261	8012-95-1	Mineral oil		290	291
123-51-3	Methyl butan-1-ol, 3-	Methyl butan-1-ol, 3-	310	312	8002-05-9	Mineral oil	Mineral oil	290	291
74-87-3	Methyl chloride		260	261	8002-05-9	Mineral oil	Mineral oil	290	294
79-22-1	Methyl chloro formate		110	113	64475-85-0	Mineral spirit		290	291
71-55-6	Methyl chloroform	Methyl chloroform::Methyl trichloromethane	260	261	50-07-7	Mitomycin		990	991
75-05-8	Methyl cyanide	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	110-91-8	Morpholine	Diethylene imide oxide	270	274
78-93-3	Methyl ethyl ketone	Butanone::MEK	390	391	110-91-8	Morpholine	Diethylene imide oxide	270	278
1338-23-4	Methyl Ethyl Ketone Peroxide	Methyl Ethyl Ketone Peroxide	300	302	109-02-4	N-Methylmorpholine (NMM)		270	274
1338-23-4	Methyl Ethyl Ketone Peroxide	Methyl Ethyl Ketone Peroxide	300	300	109-02-4	N-Methylmorpholine (NMM)		270	278
96-29-7	Methyl ethyl ketoxime	Butanone oxime, 2-	150	150	8032-32-4	Naphtha		290	292
593-53-3	Methyl fluoride		260	261	91-20-3	Naphthalene		290	293
123-39-7	Methyl formamide, N-		130	132	13463-39-3	Nickel carbonyl	Tetracarbonylnickel	470	470
107-31-3	Methyl formate		220	221	54-11-5	Nicotine		270	271
60-34-4	Methyl hydrazine		280	280	7697-37-2	Nitric acid		370	370
616-47-7	Methyl imidazole, 1-		270	274	52583-42-3	Nitric acid, red fuming		370	370
74-88-4	Methyl iodide	Iodomethane	260	261	10102-43-9	Nitric oxide		350	350
105-44-2	Methyl Isobutyl Ketoxime		150	150	97697-37-4	Nitric/Hydrofluoric Pickling Solution		370	370
624-83-9	Methyl isocyanate		210	211	98-95-3	Nitro benzene		440	441
563-80-4	Methyl Isopropyl Ketone		390	391	76-06-2	Nitro chlormethan	Chloro picrin::Nitro chlormethan	260	261
67-64-1	Methyl ketone	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone:: Propan -2-one::Pyroacetic ether	390	391	100-00-5	Nitro chlorobenzene, p-		440	442
74-93-1	Methyl mercaptan	Methanethiol	350	350	100-00-5	Nitro chlorobenzene, p-		260	263
74-93-1	Methyl mercaptan	Methanethiol	500	501	75-52-5	Nitro methane		440	441
74-93-1	Methyl mercaptan	Methanethiol	380	380	88-75-5	Nitro phenol, o-	Hydroxy 2-nitrobenzene, 1-	440	442
80-62-6	Methyl methacrylate	Methyl 2-methyl-2-propenoate	220	223	88-75-5	Nitro phenol, o-	Hydroxy 2-nitrobenzene, 1-	310	316
62-75-9	Methyl N-nitrosomethanamine, N-	Methyl N-nitrosomethanamine, N-	450	450	79-46-9	Nitro propane, 2-		440	441
108-10-1	Methyl pentan-2-one, 4-	Isobutyl methyl ketone::Methyl pentan-2-one, 4-	390	391	88-72-2	Nitro toluene, 2-		440	442
1319-77-3	Methyl phenols	Cresylic acid::Methyl phenols	310	316	99-99-0	Nitro toluene, p-		440	442
75-65-0	Methyl propan-2-ol, 2-		310	313	10102-44-0	Nitrogen dioxide		350	350
79-41-4	Methyl propenoic acid, 2-	Methyl propenoic acid, 2-	100	102	10102-44-0	Nitrogen Dioxide (liquid)	Nitrogen Dioxide (liquid)	350	350
107-87-9	Methyl Propyl Ketone		390	391	10544-72-6	Nitrogen tetroxide		350	350
109-06-8	Methyl pyridine, 2-	Methyl pyridine, 2-	270	271	7783-54-2	Nitrogen trifluoride		350	350
108-99-6	Methyl pyridine, 3-	Methyl pyridine, 3-	270	271	8007-56-5	Nitrohydrochloric Acid	Aqua regia	370	370
119-36-8	Methyl salicylate		220	226	10024-97-2	Nitrous oxide		350	350
1634-04-4	Methyl tert-butyl ether	Methoxy 2-methylpropane, 2-	240	241	811-97-2	Norflurane	Norflurane	260	261
					111-65-9	Octane, n-		290	291

APPENDIX
CHEMICAL INDEX - Alphabetical Listing - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
111-87-5	Octanol, n-		310	311	98-82-8	Phenyl propane, 2-	Isopropyl benzene::Phenyl propane, 2-	290	292
7452-59-7	Octyl chlor formiate		110	113	98-13-5	Phenyl trichlorosilane	Phenyl trichlorosilane	480	480
7452-59-7	Octyl chlor formiate		220	221	75-44-5	Phosgene		350	350
112-80-1	Oleic Acid		100	102	7803-51-2	Phosphine		350	350
8014-95-7	Oleum	Sulfuric acid fuming	370	370	6303-21-5	Phosphinic acid	Phosphinic acid	370	370
144-62-7	Oxalic acid	Ethane dioic acid	100	104	7664-38-2	Phosphoric acid		370	370
63121-00-6	Oxaliplatin		990	991	10025-87-3	Phosphorus oxychloride		360	360
98-51-1	P-Tert Butyl Toluene		290	292	7719-12-2	Phosphorus trichloride		360	360
33069-62-4	Paclitaxel (Hospira)		990	991	109-06-8	Picoline, 2-	Methyl pyridine, 2-	270	271
104-49-4	Paraphenylene diisocyanate (PPDI) crude mix		210	212	108-99-6	Picoline, 3-	Methyl pyridine, 3-	270	271
11097-69-1	PCB 1254		260	263	108-94-1	Pimelic ketone	Hexanone::Pimelic ketone	390	391
mix	PCB in transformer oil		260	263	24991-55-7	Polyethylene glycol dimethyl ether		240	245
7647-18-9	Pentachloroantimony	Pentachloroantimony	360	360	9016-87-9	Polymethylene polyphenyle isocyanate (p-MDI)		210	212
87-86-5	Pentachlorophenol		310	316	127-08-2	Potassium acetate		340	340
109-66-0	Pentane		290	291	584-08-7	Potassium carbonate		340	340
111-30-8	Pentanedial, 1,5-	Glutaral::Pentanedial, 1,5-	120	121	7789-00-6	Potassium chromate		340	340
109-52-4	Pentanoic acid		290	291	151-50-8	Potassium cyanide		340	345
71-41-0	Pentanol, 1-	Amyl alcohol	310	311	1310-58-3	Potassium hydroxide		380	380
75-85-4	Pentanol, tert-	2-Methyl-2-Butanol::Amyl alcohol, tert-	310	313	7722-64-7	Potassium permanganate		340	340
13284-42-9	Pentene nitrile, 2-		430	431	107-02-8	Prop-2-en-1-al	Prop-2-en-1-al	120	121
4635-87-4	Pentene nitrile, 3-		430	431	107-19-7	Prop-2-yn-1-ol	Prop-2-yn-1-ol	310	311
25899-50-7	Pentene nitrile, cis-2-		430	431	71-23-8	Propan -1-ol	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
628-63-7	Pentyl acetate	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222	67-63-0	Propan -2-ol	Isopropanol::Isopropyl alcohol	310	312
79-21-0	Peracetic Acid	Peracetic Acid	300	302	67-64-1	Propan -2-one	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
79-21-0	Peracetic Acid		100	102	74-98-6	Propane		290	291
79-21-0	Peracetic Acid	Peracetic Acid	300	300	56-81-5	Propane -1,2,3-triol	Glycerine::Propane -1,2,3-triol	310	314
79-21-0	Peracetic Acid		300	302	79-09-4	Propanoic acid		100	102
7601-90-3	Perchloric acid		370	370	71-23-8	Propanol, 1-	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
2062-98-8	Perfluoro 2-propoxy propionyl fluoride		260	261	71-23-8	Propanol, n-	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
2062-98-8	Perfluoro 2-propoxy propionyl fluoride		110	111	107-19-7	Propargyl alcohol	Prop-2-yn-1-ol	310	311
2062-98-8	Perfluoro 2-propoxy propionyl fluoride		240	241	107-18-6	Propen 1-ol, 2-	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311
76-16-4	Perfluoroethane	Perfluoroethane	260	261	79-06-1	Propenamide	Acrylicamide::Propenamide	130	135
60-12-8	Phenethyl alcohol, 2-		310	318	79-10-7	Propene acid	Acroleic acid::Ethylene carboxylic acid::Propene acid	100	102
100-42-5	Phenethylene	Phenethylene::Vinyl benzol	290	292	107-13-1	Propenenitrile, 2-	Cyanoethylene::Propenenitrile, 2-::Propenoic acid nitrile::Vinyl cyanide	430	431
108-95-2	Phenol		310	316	141-32-2	Propenoic acid butyl ester, 2-	Acrylic acid n-butyl ester::Propenoic acid butyl ester, 2-	220	223
140-29-4	Phenyl acetonitrile	Phenyl acetonitrile	430	432	107-13-1	Propenoic acid nitrile	Cyanoethylene::Propenenitrile, 2-::Propenoic acid nitrile::Vinyl cyanide	430	431
62-53-3	Phenyl amine	Amino benzene::Benzenamine::Phenyl amine	140	145	1569-01-3	Propoxypropanol		240	245
1885-14-9	Phenyl chlor formiate		220	221	109-61-5	Propylchloroformate		260	260
108-90-7	Phenyl chloride	Phenyl chloride	260	263	109-61-5	Propylchloroformate		220	221
100-47-0	Phenyl cyanide	Cyanobenzene::Phenyl cyanide	430	432	109-61-5	Propylchloroformate		110	113
100-41-4	Phenyl ethane	Phenyl ethane	290	292	109-60-4	Propyl Acetate		220	222
98-85-1	Phenyl ethanol, 1-		310	318	71-23-8	Propyl alcohol	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
122-60-1	Phenyl glycidyl ether		270	275	107-10-8	Propyl amine, n-		140	141
108-98-5	Phenyl mercaptan	Benzene thiol	500	501	106-94-5	Propyl bromide, n-		260	261
					2807-30-9	Propyl Cellosolve, n-		240	245

APPENDIX
CHEMICAL INDEX - Alphabetical Listing - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
123-73-9	Propylene aldehyde	Butenal, 2-:Ethane diol dipropoanoate, 1,2-:Methyl acrolein::Propylene aldehyde	120	121	505-60-2	Sulfur Mustard (HD), MIL-STD-282		500	502
78-87-5	Propylene dichloride		260	261	7446-11-9	Sulfur trioxide		360	365
57-55-6	Propylene Glycol		310	314	7664-93-9	Sulfuric acid		370	370
75-55-8	Propylene imine		270	274	64-67-5	Sulfuric acid diethyl ester	Sulfuric acid diethyl ester	500	507
75-56-9	Propylene oxide, 1,2-	Epoxy propane, 1,2-	270	275	77-78-1	Sulfuric acid dimethyl ester	Sulfuric acid dimethyl ester	500	507
94239-04-0	Pyridene, 2-fluoro-6-(trifluoromethyl)		270	271	8014-95-7	Sulfuric acid fuming	Sulfuric acid fuming	370	370
110-86-1	Pyridine		270	271	10545-99-0	Sulphur dichloride	Sulphur dichloride	500	502
67-64-1	Pyroacetic ether	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone:: Propan -2-one::Pyroacetic ether	390	391		mix t-Sodium-amylate / t-amyl alcohol		590	590
123-75-1	Pyrrolidine	Azolidine	270	274	77-81-6	Tabun (GA), FINABEL 0.7.C		460	462
1717-00-6	Refrigerant 141B		260	261	77-81-6	Tabun (GA), MIL-STD-282		460	462
31218-83-4	Safrotin		460	462	75-91-2	Tert-Butyl Hydroperoxide	Tert-Butyl Hydroperoxide	300	300
107-44-8	Sarin (GB), MIL-STD-282		460	462	75-91-2	Tert-Butyl Hydroperoxide	Tert-Butyl Hydroperoxide	300	302
7803-62-5	Silane		480	480	13463-39-3	Tetracarbonylnickel	Tetracarbonylnickel	470	470
10026-04-7	Silicon tetrachloride		480	480	79-95-8	Tetrachloro bisphenol-A, 2,2',6,6'-		260	263
10026-04-7	Silicon tetrachloride		360	360	79-95-8	Tetrachloro bisphenol-A, 2,2',6,6'-		310	316
mix	Skydrol 4D	Skydrol 4D	590	590	79-34-5	Tetrachloro ethane, 1,1,2,2,-		260	261
mix	Skydrol 5	Skydrol 5	590	590	127-18-4	Tetrachloro ethylene, 1,1,2,2,-	Ethylene tetrachloride	260	264
126-73-8	Skydrol 500 B-4		460	462	56-23-5	Tetrachloro methane	Tetrachloro methane	260	261
mix	Skydrol PE-5	Skydrol PE-5	590	590	78-10-4	Tetraethoxysilane		480	480
127-09-3	Sodium acetate		550	550	77-98-5	Tetraethyl ammonium hydroxide		550	550
7631-90-5	Sodium bisulphite		500	507	77-98-5	Tetraethyl ammonium hydroxide		150	150
7647-14-5	Sodium chloride		990	991	78-00-2	Tetraethyl lead		470	470
143-33-9	Sodium cyanide		340	345	112-57-2	Tetraethylene pentamine		140	148
7681-49-4	Sodium fluoride		340	340	112-57-2	Tetraethylene pentamine		140	141
1310-73-2	Sodium hydroxide	Caustic soda	380	380	811-97-2	Tetrafluoroethane, 1,1,1,2,-	Norflurane	260	261
7681-52-9	Sodium hypochlorite		340	340	75-73-0	Tetrafluoromethane	Carbon tetrafluoride	260	261
7681-57-4	Sodium metabisulphite		340	340	109-99-9	Tetrahydrofuran		270	277
124-41-4	Sodium methylate		550	550	75-59-2	Tetramethyl ammonium hydroxide		550	550
6834-92-0	Sodium silicate		340	340	594-27-4	Tetramethyl tin		470	470
96-64-0	Soman (GD), FINABEL 0.7.C		460	462	110-18-9	Tetramethylethylene diamine (TMEDA)		140	148
96-64-0	Soman (GD), MIL-STD-282		460	462	288-47-1	Thiazol, 1,3-		270	274
mix	Spectracide® (50% Malathion, 44% Aromatic Solvent)	Spectracide® (50% Malathion, 44% Aromatic Solvent)	590	590	68-11-1	Thioglycolic acid	Mercapto acetic acid	500	501
64-17-5	Spiritus	Ethyl alcohol::Spiritus	310	311	68-11-1	Thioglycolic acid	Mercapto acetic acid	100	103
8052-41-3	Stoddard solvent	Low boiling point naphtha - unspecified	290	291	7719-09-7	Thionyl chloride		360	360
100-42-5	Styrene	Phenethylene::Vinyl benzol	290	292	52-24-4	Thiopepa		990	991
5329-14-6	Sulfamic acid	Amido sulfonic acid::Sulfamidic acid	370	370	1118-46-3	Tin chloride, mono-n-butyl	Butyl stannium trichloride	470	470
5329-14-6	Sulfamic acid	Amido sulfonic acid::Sulfamidic acid	500	509	1461-22-9	Tin chloride, tri-n-butyl		470	470
5329-14-6	Sulfamidic acid	Amido sulfonic acid::Sulfamidic acid	370	370	7550-45-0	Titan(IV) chloride	Titan(IV) chloride	360	360
5329-14-6	Sulfamidic acid	Amido sulfonic acid::Sulfamidic acid	500	509	7550-45-0	Titanium tetrachloride	Titan(IV) chloride	360	360
7446-09-5	Sulfur dioxide		360	365	108-88-3	Toluene	Methyl benzol	290	292
7446-09-5	Sulfur dioxide		350	350	26471-62-5	Toluene diisocyanate, 1,3-		210	212
2551-62-4	Sulfur hexafluoride		500	509	584-84-9	Toluene diisocyanate, 2,4-		210	212
2551-62-4	Sulfur hexafluoride		350	350	108-44-1	Toluidine, m-		140	145
10025-67-9	Sulfur monochloride	Disulphur dichloride	500	502	95-53-4	Toluidine, o-	Methyl aniline, o-	140	145
505-60-2	Sulfur Mustard (HD), FINABEL 0.7.C		500	502	102-82-9	Tributyl amine		140	148

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CHEMICAL INDEX - Alphabetical Listing - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
102-82-9	Tributyl amine		140	143	75-01-4	Vinyl chloride	Chloro ethene	260	264
75-94-5	Trichlor vinylsilane		480	480	107-13-1	Vinyl cyanide	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
76-13-1	Trichloro 1,2,2-trifluoroethane, 1,1,2-		260	261	106-99-0	Vinyl ethylene	Vinyl ethylene	290	296
108-77-0	Trichloro 1,3,5-triazine, 2,4,6-	Trichloro 1,3,5-triazine, 2,4,6-	260	263	3536-96-7	Vinyl magnesium chloride		470	470
108-77-0	Trichloro 1,3,5-triazine, 2,4,6-	Trichloro 1,3,5-triazine, 2,4,6-	270	274	100-43-6	Vinyl pyridine, 4-		270	271
76-03-9	Trichloro acetic acid		100	103	88-12-0	Vinyl Pyrrolidinone		270	274
921-03-9	Trichloro acetone, 1,1,3-		260	261	75-35-4	Vinylidene chloride	Dichloro ethylene, 1,1-	260	264
921-03-9	Trichloro acetone, 1,1,3-		390	391	8030-30-6	VM & P Naphtha		290	291
120-82-1	Trichloro benzene, 1,2,4-		260	263	50782-69-9	VX Nerve Agent, FINABEL 0.7.C		460	462
71-55-6	Trichloro ethane, 1,1,1-	Methyl chloroform::Methyl trichloromethane	260	261	50782-69-9	VX Nerve Agent, MIL-STD-282		460	462
79-00-5	Trichloro ethane, 1,1,2-	Ethane trichloride	260	261	mix	White Liquor		590	590
115-20-8	Trichloro ethanol, 2,2,2-		310	315	mix	White spirit		290	291
79-01-6	Trichloro ethylene	Ethylene trichloride	260	264	1330-20-7	Xylene, mixed isomers		290	292
67-66-3	Trichloro methane	Trichloro methane	260	261	95-47-6	Xylene, o-		290	292
98-13-5	Trichloro phenylsilane	Phenyl trichlorosilane	480	480	95-68-1	Xylidine, 2,4-		140	145
10025-78-2	Trichloro silane		480	480					
67-66-3	Trichloromethane	Trichloro methane	260	261					
102-71-6	Triethanolamine		140	143					
97-93-8	Triethyl aluminum		470	470					
121-44-8	Triethyl amine	Diethyl ethanamine, N,N-	140	143					
78-40-0	Triethyl Phosphate		460	462					
112-24-3	Triethylenetetramine		140	141					
112-24-3	Triethylenetetramine		140	148					
98-08-8	Triflouromethylbenzene		260	263					
382-10-5	Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	260	261					
76-05-1	Trifluoro acetic acid		260	261					
76-05-1	Trifluoro acetic acid		100	103					
75-89-8	Trifluoro ethanol, 2,2,2-		310	315					
75-46-7	Trifluoro methane		260	261					
1493-13-6	Trifluoro methansulfonic acid		500	504					
75-50-3	Trimethyl amine		140	143					
75-64-9	Trimethyl aminomethane	Amino 2-methylpropane, 2-::Trimethyl aminomethane	140	143					
512-56-1	Trimethyl phosphate		460	462					
121-45-9	Trimethyl phosphite		460	462					
102-69-2	Tripropyl amine		140	143					
7783-82-6	Tungsten hexafluoride		350	350					
8006-64-2	Turpentine		290	296					
8006-64-2	Turpentine		290	294					
83016-70-0	Urethane Catalyst Alkanol		240	245					
7632-51-1	Vanadium tetrachloride		360	360					
2068-78-2	Vincristine sulfate		990	991					
71486-22-1	Vinorelbine		990	991					
108-05-4	Vinyl acetate	Acetic acid ethenyl ester	220	222					
100-42-5	Vinyl benzol	Phenethylene::Vinyl benzol	290	292					
107-18-6	Vinyl carbinol	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311					

APPENDIX
CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
50-00-0	Formaldehyde	Formalin	120	121	67-63-0	Propan -2-ol	Isopropanol::Isopropyl alcohol	310	312
50-00-0	Formalin	Formalin	120	121	67-64-1	Acetone	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
50-00-0	Formalin		120	121	67-64-1	Dimethyl ketal	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
50-07-7	Mitomycin		990	991	67-64-1	Dimethyl ketone	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
50-18-0	Cyclo phosphamide		990	991	67-64-1	Ketone propane	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
50-21-5	Lactic Acid		100	103	67-64-1	Methyl acetyl	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
51-21-8	Fluorouracil, 5-		990	991	67-64-1	Methyl ketone	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
52-24-4	Thiotepa		990	991	67-64-1	Propan -2-one	Dimethyl ketal::Dimethyl ketone::Ketone propane::Methyl acetyl::Methyl ketone::Propan -2-one::Pyroacetic ether	390	391
54-11-5	Nicotine		270	271	67-66-3	Chloro form	Trichloro methane	260	261
56-23-5	Carbon tetrachloride	Tetrachloro methane	260	261	67-66-3	Chloroform	Trichloro methane	260	261
56-23-5	Tetrachloro methane	Tetrachloro methane	260	261	67-66-3	Trichloro methane	Trichloro methane	260	261
56-38-2	Ethyl parathion		460	462	67-66-3	Trichloromethane	Trichloro methane	260	261
56-81-5	Glycerine	Glycerine::Propane -1,2,3-triol	310	314	67-68-5	Dimethyl sulfoxide		500	503
56-81-5	Glycerol	Glycerine::Propane -1,2,3-triol	310	314	68-11-1	Mercapto acetic acid	Mercapto acetic acid	100	103
56-81-5	Propane -1,2,3-triol	Glycerine::Propane -1,2,3-triol	310	314	68-11-1	Mercapto acetic acid	Mercapto acetic acid	500	501
57-14-7	Dimethyl hydrazine, N,N-		280	280	68-11-1	Thioglycolic acid	Mercapto acetic acid	500	501
57-55-6	Propylene Glycol		310	314	68-11-1	Thioglycolic acid	Mercapto acetic acid	100	103
57-74-9	Chlordane		260	261	68-12-2	Dimethyl formamide, N,N-		130	132
58-89-9	Hexachloro cyclohexane, 1,2,3,4,5,6-	Hexachloro cyclohexane, 1,2,3,4,5,6-	260	261	71-23-8	Propan -1-ol	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
58-89-9	Lindane	Hexachloro cyclohexane, 1,2,3,4,5,6-	260	261	71-23-8	Propanol, 1-	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
59-05-2	Methotrexate		990	991	71-23-8	Propanol, n-	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
60-12-8	Phenethyl alcohol, 2-		310	318	71-23-8	Propyl alcohol	Propanol, 1-::Propanol, n-::Propyl alcohol	310	311
60-24-2	Hydroxy 1-ethanethiol, 2-	Hydroxy 1-ethanethiol, 2-	310	311	71-36-3	Butanol, 1-	Butanol, n-::Butyl alcohol, n-	310	311
60-24-2	Hydroxy 1-ethanethiol, 2-	Hydroxy 1-ethanethiol, 2-	500	501	71-36-3	Butanol, n-	Butanol, n-::Butyl alcohol, n-	310	311
60-24-2	Mercapto ethanol	Hydroxy 1-ethanethiol, 2-	310	311	71-36-3	Butyl alcohol, n-	Butanol, n-::Butyl alcohol, n-	310	311
60-24-2	Mercapto ethanol	Hydroxy 1-ethanethiol, 2-	500	501	71-41-0	Amyl alcohol	Amyl alcohol	310	311
60-29-7	Diethyl ether	Diethyl ether	240	241	71-41-0	Pentanol, 1-	Amyl alcohol	310	311
60-29-7	Ethyl ether	Diethyl ether	240	241	71-43-2	Benzene		290	292
60-34-4	Methyl hydrazine		280	280	71-55-6	Methyl chloroform	Methyl chloroform::Methyl trichloromethane	260	261
62-53-3	Amino benzene	Amino benzene::Benzenamine::Phenyl amine	140	145	71-55-6	Methyl trichloromethane	Methyl chloroform::Methyl trichloromethane	260	261
62-53-3	Aniline	Amino benzene::Benzenamine::Phenyl amine	140	145	71-55-6	Trichloro ethane, 1,1,1-	Methyl chloroform::Methyl trichloromethane	260	261
62-53-3	Benzenamine	Amino benzene::Benzenamine::Phenyl amine	140	145	74-83-9	Bromo methane	Bromo methane	260	261
62-53-3	Phenyl amine	Amino benzene::Benzenamine::Phenyl amine	140	145	74-83-9	Methyl bromide	Bromo methane	260	261
62-75-9	Dimethyl nitrosamine	Methyl N-nitrosomethanamine, N-	450	450	74-87-3	Methyl chloride		260	261
62-75-9	Methyl N-nitrosomethanamine, N-	Methyl N-nitrosomethanamine, N-	450	450	74-88-4	Iodomethane	Iodomethane	260	261
64-17-5	Ethanol	Ethyl alcohol::Spiritus	310	311	74-88-4	Methyl iodide	Iodomethane	260	261
64-17-5	Ethyl alcohol	Ethyl alcohol::Spiritus	310	311	74-89-5	Methyl amine		140	141
64-17-5	Spiritus	Ethyl alcohol::Spiritus	310	311					
64-18-6	Formic acid		100	102					
64-19-7	Acetic acid		100	102					
64-67-5	Diethyl sulfate	Sulfuric acid diethyl ester	500	507					
64-67-5	Sulfuric acid diethyl ester	Sulfuric acid diethyl ester	500	507					
67-56-1	Methanol		310	311					
67-63-0	Isopropanol	Isopropanol::Isopropyl alcohol	310	312					
67-63-0	Isopropyl alcohol	Isopropanol::Isopropyl alcohol	310	312					

74-90-8	Hydrogen cyanide		340	345
74-90-8	Hydrogen cyanide		370	370
74-90-8	Hydrogen cyanide		350	350
74-93-1	Methanethiol	Methanethiol	380	380
74-93-1	Methanethiol	Methanethiol	500	501
74-93-1	Methanethiol	Methanethiol	350	350
74-93-1	Methyl mercaptan	Methanethiol	500	501

APPENDIX
CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
74-93-1	Methyl mercaptan	Methanethiol	350	350	75-75-2	Methanesulphonic acid		500	504
74-93-1	Methyl mercaptan	Methanethiol	380	380	75-78-5	Dimethyl dichlorosilane		480	480
74-95-3	Methylene bromide		260	261	75-79-6	Methyl trichlorosilane		480	480
74-98-6	Propane		290	291	75-85-4	2-Methyl-2-Butanol	2-Methyl-2-Butanol::Amyl alcohol, tert-	310	313
75-00-3	Ethyl chloride		260	261	75-85-4	Amyl alcohol, tert-	2-Methyl-2-Butanol::Amyl alcohol, tert-	310	313
75-01-4	Chloro ethene	Chloro ethene	260	264	75-85-4	Pentanol, tert-	2-Methyl-2-Butanol::Amyl alcohol, tert-	310	313
75-01-4	Vinyl chloride	Chloro ethene	260	264	75-86-5	Acetone cyanohydrin	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313
75-04-7	Ethyl amine		140	141	75-86-5	Acetone cyanohydrin	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431
75-05-8	Acetonitrile	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	75-86-5	Cyanopropan-2-ol, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431
75-05-8	Cyanomethane	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	75-86-5	Cyanopropan-2-ol, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313
75-05-8	Ethane nitrile	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	75-86-5	Hydroxy 2-methylpropionitrile, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313
75-05-8	Ethyl nitrile	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	75-86-5	Hydroxy 2-methylpropionitrile, 2-	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431
75-05-8	Methyl cyanide	Cyanomethane::Ethane nitrile::Ethyl nitrile::Methyl cyanide	430	431	75-86-5	Hydroxy isobutyronitrile	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431
75-07-0	Acetaldehyde		120	121	75-86-5	Hydroxy isobutyronitrile	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	310	313
75-08-1	Ethane thiol	Ethane thiol	500	501	75-86-5	Hydroxy isobutyronitrile	Cyanopropan-2-ol, 2-::Hydroxy 2-methylpropionitrile, 2-::Hydroxy isobutyronitrile	430	431
75-08-1	Ethyl mercaptan	Ethane thiol	500	501	75-89-8	Trifluoro ethanol, 2,2,2-		310	315
75-09-2	Dichloro methane	Methylene chloride	260	261	75-91-2	Tert-Butyl Hydroperoxide	Tert-Butyl Hydroperoxide	300	300
75-09-2	Methylene chloride	Methylene chloride	260	261	75-91-2	Tert-Butyl Hydroperoxide	Tert-Butyl Hydroperoxide	300	302
75-15-0	Carbon disulfide		500	502	75-94-5	Trichlor vinylsilane		480	480
75-18-3	Dimethyl sulfide		500	502	76-03-9	Trichloro acetic acid		100	103
75-21-8	Epoxy ethane	Epoxy ethane	270	275	76-05-1	Trifluoro acetic acid		260	261
75-21-8	Ethylene oxide	Epoxy ethane	270	275	76-05-1	Trifluoro acetic acid		100	103
75-25-2	Bromoform		260	261	76-06-2	Chlor trinitromethan	Chloro picrin::Nitro chlormethan	260	261
75-31-0	Amino propane, 2-	Amino propane, 2-	140	141	76-06-2	Chloro picrin	Chloro picrin::Nitro chlormethan	260	261
75-31-0	Isopropyl amine	Amino propane, 2-	140	141	76-06-2	Nitro chlormethan	Chloro picrin::Nitro chlormethan	260	261
75-35-4	Dichloro ethylene, 1,1-	Dichloro ethylene, 1,1-	260	264	76-13-1	Trichloro 1,2,2-trifluoroethane, 1,1,2-		260	261
75-35-4	Vinylidene chloride	Dichloro ethylene, 1,1-	260	264	76-16-4	Hexafluoro ethane	Perfluoroethane	260	261
75-36-5	Acetic chloride	Acetic chloride::Ethanoyl chloride	110	111	76-16-4	Perfluoroethane	Perfluoroethane	260	261
75-36-5	Acetyl chloride	Acetic chloride::Ethanoyl chloride	110	111	77-78-1	Dimethyl sulfate	Sulfuric acid dimethyl ester	500	507
75-36-5	Ethanoyl chloride	Acetic chloride::Ethanoyl chloride	110	111	77-78-1	Sulfuric acid dimethyl ester	Sulfuric acid dimethyl ester	500	507
75-44-5	Phosgene		350	350	77-81-6	Tabun (GA), FINABEL 0.7.C		460	462
75-46-7	Trifluoro methane		260	261	77-81-6	Tabun (GA), MIL-STD-282		460	462
75-50-3	Trimethyl amine		140	143	77-92-9	Citric acid	Hydroxy 1,2,3-propanetricarboxylic acid, 2-	100	104
75-52-5	Nitro methane		440	441	77-92-9	Hydroxy 1,2,3-propanetricarboxylic acid, 2-	Hydroxy 1,2,3-propanetricarboxylic acid, 2-	100	104
75-55-8	Propylene imine		270	274	77-98-5	Tetraethyl ammonium hydroxide		550	550
75-56-9	Epoxy propane, 1,2-	Epoxy propane, 1,2-	270	275	77-98-5	Tetraethyl ammonium hydroxide		150	150
75-56-9	Propylene oxide, 1,2-	Epoxy propane, 1,2-	270	275	78-00-2	Tetraethyl lead		470	470
75-59-2	Tetramethyl ammonium hydroxide		550	550	78-10-4	Tetraethoxysilane		480	480
75-64-9	Amino 2-methylpropane, 2-	Amino 2-methylpropane, 2-::Trimethyl aminomethane	140	143	78-40-0	Triethyl Phosphate		460	462
75-64-9	Butyl amine, tert-	Amino 2-methylpropane, 2-::Trimethyl aminomethane	140	143	78-83-1	Isobutanol		310	311
75-64-9	Trimethyl aminomethane	Amino 2-methylpropane, 2-::Trimethyl aminomethane	140	143					
75-65-0	Butanol, tert-	Methyl propan-2-ol, 2-	310	313					
75-65-0	Methyl propan-2-ol, 2-	Methyl propan-2-ol, 2-	310	313					
75-73-0	Carbon tetrafluoride	Carbon tetrafluoride	260	261					
75-73-0	Tetrafluoromethane	Carbon tetrafluoride	260	261					

78-83-1	Isobutanol		310	312
78-87-5	Propylene dichloride		260	261
78-88-6	Dichloro propene, 2,3-		260	261
78-93-3	Butanone	Butanone::MEK	390	391
78-93-3	MEK	Butanone::MEK	390	391
78-93-3	Methyl ethyl ketone	Butanone::MEK	390	391

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CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class
78-94-4	But-3-en-2-one	But-3-en-2-one	390	391
78-94-4	Methyl vinyl ketone	But-3-en-2-one	390	391
78-95-5	Chloro acetone	Chloro propan-2-one, 1-	390	391
78-95-5	Chloro propan-2-one, 1-	Chloro propan-2-one, 1-	390	391
79-00-5	Ethane trichloride	Ethane trichloride	260	261
79-00-5	Trichloro ethane, 1,1,2-	Ethane trichloride	260	261
79-01-6	Ethylene trichloride	Ethylene trichloride	260	264
79-01-6	Trichloro ethylene	Ethylene trichloride	260	264
79-04-9	Chloro acetyl chloride		110	111
79-06-1	Acrylamide	Acrylicamide::Propenamamide	130	135
79-06-1	Acrylicamide	Acrylicamide::Propenamamide	130	135
79-06-1	Propenamamide	Acrylicamide::Propenamamide	130	135
79-09-4	Propanoic acid		100	102
79-10-7	Acroleic acid	Acroleic acid::Ethylene carboxylic acid:: Propene acid	100	102
79-10-7	Acrylic acid	Acroleic acid::Ethylene carboxylic acid:: Propene acid	100	102
79-10-7	Ethylene carboxylic acid	Acroleic acid::Ethylene carboxylic acid:: Propene acid	100	102
79-10-7	Propene acid	Acroleic acid::Ethylene carboxylic acid:: Propene acid	100	102
79-11-8	Chloro acetic acid		100	103
79-14-1	Glycolic acid	Hydroxy acetic acid	100	103
79-14-1	Hydroxy acetic acid	Hydroxy acetic acid	100	103
79-20-9	Methyl Acetate		220	222
79-21-0	Peracetic Acid	Peracetic Acid	300	302
79-21-0	Peracetic Acid		100	102
79-21-0	Peracetic Acid	Peracetic Acid	300	300
79-21-0	Peracetic Acid		300	302
79-22-1	Methyl chloro formate		110	113
79-34-5	Tetrachloro ethane, 1,1,2,2,-		260	261
79-36-7	Dichloro acetyl chloride		110	111
79-41-4	Methacrylic acid	Methyl propenoic acid, 2-	100	102
79-41-4	Methyl propenoic acid, 2-	Methyl propenoic acid, 2-	100	102
79-46-9	Nitro propane, 2-		440	441
79-95-8	Tetrachloro bisphenol-A, 2,2',6,6'-		310	316
79-95-8	Tetrachloro bisphenol-A, 2,2',6,6'-		260	263
80-62-6	Methyl 2-methyl-2-propenoate	Methyl 2-methyl-2-propenoate	220	223
80-62-6	Methyl methacrylate	Methyl 2-methyl-2-propenoate	220	223
84-74-2	Dibutyl 1,2-benzenedicarboxylate	Dibutyl 1,2-benzenedicarboxylate	220	226
84-74-2	Dibutyl phthalate	Dibutyl 1,2-benzenedicarboxylate	220	226
87-68-3	Hexachloro butadiene		260	264
87-86-5	Pentachlorophenol		310	316
88-12-0	Vinyl Pyrrolidinone		270	274
88-72-2	Nitro toluene, 2-		440	442
88-73-3	Chloro 2-nitrobenzene, 1-	Chloro 2-nitrobenzene, 1-	440	442
88-73-3	Chloro 2-nitrobenzene, 1-	Chloro 2-nitrobenzene, 1-	260	263
88-75-5	Hydroxy 2-nitrobenzene, 1-	Hydroxy 2-nitrobenzene, 1-	310	316
88-75-5	Hydroxy 2-nitrobenzene, 1-	Hydroxy 2-nitrobenzene, 1-	440	442

CAS Number	Chemical Name	Synonym	Class	Sub-Class
88-75-5	Nitro phenol, o-	Hydroxy 2-nitrobenzene, 1-	310	316
88-75-5	Nitro phenol, o-	Hydroxy 2-nitrobenzene, 1-	440	442
91-20-3	Naphthalene		290	293
91-66-7	Diethyl aniline crude		140	146
91-66-7	Diethyl aniline, N,N-		140	146
91-67-8	Diethyl m-toluidine, N,N-		140	145
92-67-1	Amino diphenyl, 4-		140	145
92-87-5	Benzidine	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	145
92-87-5	Benzidine	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	149
92-87-5	Biphenyl 4,4'-diamine, 1,1'-	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	145
92-87-5	Biphenyl 4,4'-diamine, 1,1'-	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	149
92-87-5	Diaminobiphenyl, 4,4'-	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	145
92-87-5	Diaminobiphenyl, 4,4'-	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	149
92-87-5	Diaminodiphenyl, p-	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	145
92-87-5	Diaminodiphenyl, p-	Biphenyl 4,4'-diamine, 1,1'-:: Diaminobiphenyl, 4,4'-::Diaminodiphenyl, p-	140	149
95-47-6	Xylene, o-		290	292
95-48-7	Cresol o-	Hydroxy toluene, o-	310	316
95-48-7	Hydroxy toluene, o-	Hydroxy toluene, o-	310	316
95-49-8	Chloro 1-methylbenzene, 2-	Chloro 1-methylbenzene, 2-	260	263
95-49-8	Chloro 1-methylbenzene, 2-	Chloro 1-methylbenzene, 2-	310	316
95-49-8	Chloro toluene, o-	Chloro 1-methylbenzene, 2-	310	316
95-49-8	Chloro toluene, o-	Chloro 1-methylbenzene, 2-	260	263
95-50-1	Dichlorobenzen, 1,2-		260	263
95-53-4	Methyl aniline, o-	Methyl aniline, o-	140	145
95-53-4	Toluidine, o-	Methyl aniline, o-	140	145
95-68-1	Xylidine, 2,4-		140	145
95-76-1	Amino 3,4-dichlorobenzene, 1-	Amino 3,4-dichlorobenzene, 1-	140	145
95-76-1	Amino 3,4-dichlorobenzene, 1-	Amino 3,4-dichlorobenzene, 1-	260	263
95-76-1	Dichloro aniline, 3,4-	Amino 3,4-dichlorobenzene, 1-	140	145
95-76-1	Dichloro aniline, 3,4-	Amino 3,4-dichlorobenzene, 1-	260	263
96-12-8	Dibromo -3-chloropropane, 1,2-		260	261
96-24-2	Chloro 1,2-propanediol, 3-		310	314
96-29-7	Butanone oxime, 2-	Butanone oxime, 2-	150	150
96-29-7	Methyl ethyl ketoxime	Butanone oxime, 2-	150	150
96-33-3	Methyl acrylate		220	223
96-64-0	Soman (GD), FINABEL 0.7.C		460	462
96-64-0	Soman (GD), MIL-STD-282		460	462
97-93-8	Triethyl aluminum		470	470
97-95-0	Ethyl Butanol		310	312
98-01-1	Furaldehvde. 2-	Furaldehvde. 2-	270	277

UNSC Hazard Class	UNSC Hazard Class	UNSC Hazard Class	UNSC Hazard Class
98-01-1	Furfural	Furaldehyde, 2-	270 277
98-07-7	Benzo trichloride		260 263
98-08-8	Triflouromethylbenzene		260 263
98-09-9	Benzene sulfone chloride	Benzene sulfone chloride	500 505
98-09-9	Benzene sulfonyl chloride	Benzene sulfone chloride	500 505

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CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class
98-13-5	Phenyl trichlorosilane	Phenyl trichlorosilane	480	480
98-13-5	Trichloro phenylsilane	Phenyl trichlorosilane	480	480
98-51-1	P-Tert Butyl Toluene		290	292
98-56-6	Chloro benzotrifluoride, 4-		260	263
98-82-8	Cumene	Isopropyl benzene::Phenyl propane, 2-	290	292
98-82-8	Isopropyl benzene	Isopropyl benzene::Phenyl propane, 2-	290	292
98-82-8	Phenyl propane, 2-	Isopropyl benzene::Phenyl propane, 2-	290	292
98-85-1	Phenyl ethanol, 1-		310	318
98-88-4	Benzene carbonyl chloride	Benzene carbonyl chloride	110	112
98-88-4	Benzoyl chloride	Benzene carbonyl chloride	110	112
98-95-3	Nitro benzene		440	441
99-63-8	Isophthaloyldichloride		110	112
99-99-0	Nitro toluene, p-		440	442
100-00-5	Nitro chlorobenzene, p-		440	442
100-00-5	Nitro chlorobenzene, p-		260	263
100-41-4	Ethyl benzene	Phenyl ethane	290	292
100-41-4	Phenyl ethane	Phenyl ethane	290	292
100-42-5	Phenethylene	Phenethylene::Vinyl benzol	290	292
100-42-5	Styrene	Phenethylene::Vinyl benzol	290	292
100-42-5	Vinyl benzol	Phenethylene::Vinyl benzol	290	292
100-43-6	Vinyl pyridine, 4-		270	271
100-44-7	Benzyl chloride	Chloro toluene, alpha-	260	266
100-44-7	Chloro toluene, alpha-	Chloro toluene, alpha-	260	266
100-47-0	Benzo nitrile	Cyanobenzene::Phenyl cyanide	430	432
100-47-0	Cyanobenzene	Cyanobenzene::Phenyl cyanide	430	432
100-47-0	Phenyl cyanide	Cyanobenzene::Phenyl cyanide	430	432
100-51-6	Benzyl alcohol	Hydroxy toluene	310	312
100-51-6	Hydroxy toluene	Hydroxy toluene	310	312
100-52-7	Benzaldehyde	Benzaldehyde	120	122
101-14-4	Dichloro -4,4'-methylenedianiline, 2,2'-	Dichloro -4,4'-methylenedianiline, 2,2'-	140	149
101-14-4	Methylene bis(2-Chloroaniline), 4,4'-	Dichloro -4,4'-methylenedianiline, 2,2'-	140	149
101-68-8	Diphenyl methane diisocyanate, 4,4'-	Methylene diphenyl diisocyanate, 4,4'-	210	212
101-68-8	Methylene diphenyl diisocyanate, 4,4'-	Methylene diphenyl diisocyanate, 4,4'-	210	212
101-77-9	Diaminodiphenylmethane, 4,4'-	Diaminodiphenylmethane, 4,4'-	140	149
101-77-9	Diaminodiphenylmethane, 4,4'-	Diaminodiphenylmethane, 4,4'-	140	145
101-77-9	Methylene dianiline	Diaminodiphenylmethane, 4,4'-	140	149
101-77-9	Methylene dianiline	Diaminodiphenylmethane, 4,4'-	140	145
102-69-2	Tripropyl amine		140	143
102-71-6	Triethanolamine		140	143
102-82-9	Tributyl amine		140	148
102-82-9	Tributyl amine		140	143
103-67-3	Benzyl methylamine, N-	Methyl benzylamine, N-	290	292
103-67-3	Benzyl methylamine, N-	Methyl benzylamine, N-	140	146
103-67-3	Methyl benzylamine, N-	Methyl benzylamine, N-	140	146
103-67-3	Methyl benzylamine, N-	Methyl benzylamine, N-	290	292

CAS Number	Chemical Name	Synonym	Class	Sub-Class
104-49-4	Paraphenylene diisocyanate (PPDI) crude		210	212
105-39-5	Chloroacetic ethylester		220	222
105-44-2	Methyl Isobutyl Ketoxime		150	150
106-46-7	Dichlorbenzen, 1,4-		260	263
106-47-8	Chloro aniline, p-	Chloro benzenamine, 4-	140	145
106-47-8	Chloro benzenamine, 4-	Chloro benzenamine, 4-	140	145
106-48-9	Chloro phenol, p-	Hydroxy chlorobenzene	310	316
106-48-9	Chloro phenol, p-	Hydroxy chlorobenzene	260	263
106-48-9	Hydroxy chlorobenzene	Hydroxy chlorobenzene	260	263
106-48-9	Hydroxy chlorobenzene	Hydroxy chlorobenzene	310	316
106-89-8	Chloro 2,3-epoxy propane, 1-	Chloro 2,3-epoxy propane, 1-	260	261
106-89-8	Chloro 2,3-epoxy propane, 1-	Chloro 2,3-epoxy propane, 1-	270	275
106-89-8	Epichlorohydrin	Chloro 2,3-epoxy propane, 1-	260	261
106-89-8	Epichlorohydrin	Chloro 2,3-epoxy propane, 1-	270	275
106-93-4	Dibromoethane, 1,2-	Dibromoethane, 1,2-	260	261
106-93-4	Ethylene dibromide	Dibromoethane, 1,2-	260	261
106-94-5	Propyl bromide, n-		260	261
106-99-0	Butadiene, 1,3-	Vinyl ethylene	290	296
106-99-0	Vinyl ethylene	Vinyl ethylene	290	296
107-02-8	Acrolein	Prop-2-en-1-al	120	121
107-02-8	Prop-2-en-1-al	Prop-2-en-1-al	120	121
107-05-1	Allyl chloride	Chloro allylene::Chloro prene, 3-	260	265
107-05-1	Chloro allylene	Chloro allylene::Chloro prene, 3-	260	265
107-05-1	Chloro prene, 3-	Chloro allylene::Chloro prene, 3-	260	265
107-06-2	Dichlorethane, 1,2.-	Ethylene dichloride	260	261
107-06-2	Ethylene dichloride	Ethylene dichloride	260	261
107-07-3	Chloro ethanol, 2-	Ethylene chlorohydrin::Glycol chlorohydrin	260	261
107-07-3	Chloro ethanol, 2-	Ethylene chlorohydrin::Glycol chlorohydrin	310	315
107-07-3	Ethylene chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	260	261
107-07-3	Ethylene chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	310	315
107-07-3	Glycol chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	310	315
107-07-3	Glycol chlorohydrin	Ethylene chlorohydrin::Glycol chlorohydrin	260	261
107-10-8	Propyl amine, n-		140	141
107-13-1	Acrylonitrile	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
107-13-1	Cyanoethylene	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
107-13-1	Propenenitrile, 2-	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
107-13-1	Propenoic acid nitrile	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
107-13-1	Vinyl cyanide	Cyanoethylene::Propenenitrile, 2-:: Propenoic acid nitrile::Vinyl cyanide	430	431
107-15-3	Diaminoethane, 1,2-	Diaminoethane, 1,2-	140	148
107-15-3	Ethylene diamine	Diaminoethane, 1,2-	140	148
107-18-6	Allyl alcohol	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311
107-18-6	Hydroxy propene	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311

107-18-6	Propen 1-ol, 2-	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311
107-18-6	Vinyl carbinol	Hydroxy propene::Propen 1-ol, 2-::Vinyl carbinol	310	311
107-19-7	Prop-2-yn-1-ol	Prop-2-yn-1-ol	310	311

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CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
107-19-7	Propargyl alcohol	Prop-2-yn-1-ol	310	311	109-43-3	Dibutyl sebacate		220	224
107-21-1	Ethane 1,2-diol	Ethane 1,2-diol::Glycol alcohol	310	314	109-52-4	Pentanoic acid		290	291
107-21-1	Ethylene glycol	Ethane 1,2-diol::Glycol alcohol	310	314	109-55-7	1,3-Propanediamine, N,N'-Dimethyl		140	148
107-21-1	Glycol alcohol	Ethane 1,2-diol::Glycol alcohol	310	314	109-60-4	Propyl Acetate		220	222
107-30-2	Chloro methyl methyl ether	Methoxy chloromethane	240	241	109-61-5	Propylchloroformate		260	260
107-30-2	Methoxy chloromethane	Methoxy chloromethane	240	241	109-61-5	Propylchloroformate		220	221
107-31-3	Methyl formate		220	221	109-61-5	Propylchloroformate		110	113
107-44-8	Sarin (GB), MIL-STD-282		460	462	109-63-7	Boron fluoride ethyl ether	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590
107-87-9	Methyl Propyl Ketone		390	391	109-63-7	Boron trifluoride diethyl etherate	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590
107-92-6	Butyric Acid		100	102	109-63-7	Boron trifluoride etherate	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590
108-05-4	Acetic acid ethenyl ester	Acetic acid ethenyl ester	220	222	109-63-7	Boron trifluoride etherate	Boron fluoride ethyl ether::Boron trifluoride diethyl etherate	590	590
108-05-4	Vinyl acetate	Acetic acid ethenyl ester	220	222	109-66-0	Pentane		290	291
108-10-1	Hexone	Isobutyl methyl ketone::Methyl pentan-2-one, 4-	390	391	109-73-9	Butyl amine		140	141
108-10-1	Isobutyl methyl ketone	Isobutyl methyl ketone::Methyl pentan-2-one, 4-	390	391	109-86-4	Ethylene glycol monomethyl ether	Ethylene glycol monomethyl ether	240	245
108-10-1	Methyl pentan-2-one, 4-	Isobutyl methyl ketone::Methyl pentan-2-one, 4-	390	391	109-86-4	Ethylene glycol monomethyl ether	Ethylene glycol monomethyl ether	310	311
108-21-4	Isopropyl Acetate		220	222	109-86-4	Methoxy ethanol, 2	Ethylene glycol monomethyl ether	240	245
108-24-7	Acetic anhydride		160	161	109-86-4	Methoxy ethanol, 2	Ethylene glycol monomethyl ether	240	245
108-31-6	Maleic anhydride		160	161	109-89-7	Diethyl amine	Ethyl ethanamine, N-	140	142
108-44-1	Toluidine, m-		140	145	109-89-7	Ethyl ethanamine, N-	Ethyl ethanamine, N-	140	142
108-59-8	Dimethylmalonate	Dimethylmalonate	220	220	109-99-9	Tetrahydrofuran		270	277
108-59-8	Dimethylmalonate	Dimethylmalonate	220	224	110-00-9	Furan		270	277
108-77-0	Cyanide chloride	Trichloro 1,3,5-triazine, 2,4,6-	260	263	110-18-9	Tetramethylethylene diamine (TMEDA)		140	148
108-77-0	Cyanide chloride	Trichloro 1,3,5-triazine, 2,4,6-	270	274	110-49-6	Acetic acid 2 methoxy ethyl ester	Acetic acid 2 methoxy ethyl ester::Ethylene glycol monomethyl ether acetate	240	245
108-77-0	Trichloro 1,3,5-triazine, 2,4,6-	Trichloro 1,3,5-triazine, 2,4,6-	260	263	110-49-6	Ethylene glycol monomethyl ether acetate	Acetic acid 2 methoxy ethyl ester::Ethylene glycol monomethyl ether acetate	240	245
108-77-0	Trichloro 1,3,5-triazine, 2,4,6-	Trichloro 1,3,5-triazine, 2,4,6-	270	274	110-49-6	Methoxy ethylacetate, 2-	Acetic acid 2 methoxy ethyl ester::Ethylene glycol monomethyl ether acetate	240	245
108-83-8	Di Isobutyl Ketone	Dimethyl-4-Heptanone, 2,6-	390	391	110-54-3	Hexane, n-		290	291
108-83-8	Dimethyl-4-Heptanone, 2,6-	Dimethyl-4-Heptanone, 2,6-	390	391	110-80-5	Cellosolve acetate	Cellosolve acetate::Ethyl Cellosolve®::Ethylene glycol monoethyl ether	240	245
108-88-3	Methyl benzol	Methyl benzol	290	292	110-80-5	Ethoxy ethanol, 2-	Cellosolve acetate::Ethyl Cellosolve®::Ethylene glycol monoethyl ether	240	245
108-88-3	Toluene	Methyl benzol	290	292	110-80-5	Ethyl Cellosolve®	Cellosolve acetate::Ethyl Cellosolve®::Ethylene glycol monoethyl ether	240	245
108-90-7	Chloro benzene	Phenyl chloride	260	263	110-80-5	Ethylene glycol monoethyl ether	Cellosolve acetate::Ethyl Cellosolve®::Ethylene glycol monoethyl ether	240	245
108-90-7	Phenyl chloride	Phenyl chloride	260	263	110-82-7	Cyclo hexane		290	291
108-93-0	Cyclohexanol	Hexalin	310	312	110-86-1	Pyridine		270	271
108-93-0	Hexalin	Hexalin	310	312	110-91-8	Diethylene imide oxide	Diethylene imide oxide	270	278
108-94-1	Cyclo hexanone	Hexanone::Pimelic ketone	390	391	110-91-8	Diethylene imide oxide	Diethylene imide oxide	270	274
108-94-1	Hexanone	Hexanone::Pimelic ketone	390	391	110-91-8	Morpholine	Diethylene imide oxide	270	274
108-94-1	Pimelic ketone	Hexanone::Pimelic ketone	390	391	110-91-8	Morpholine	Diethylene imide oxide	270	278
108-95-2	Phenol		310	316	111-15-9	Acetic acid 2 ethoxy ethyl ester	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol monoethyl ether acetate	240	245
108-98-5	Benzene thiol	Benzene thiol	500	501	111-15-9	Ethoxy ethylacetat	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol monoethyl ether acetate	240	245
108-98-5	Phenyl mercaptan	Benzene thiol	500	501	111-15-9	Ethyl glycol acetate	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol monoethyl ether acetate	240	245
108-99-6	Methyl pyridine, 3-	Methyl pyridine, 3-	270	271					
108-99-6	Picoline, 3-	Methyl pyridine, 3-	270	271					
109-02-4	N-Methylmorpholine (NMM)		270	274					
109-02-4	N-Methylmorpholine (NMM)		270	278					
109-06-8	Methyl pyridine, 2-	Methyl pyridine, 2-	270	271					
109-06-8	Picoline, 2-	Methyl pyridine, 2-	270	271					

		ethyl ether acetate		
111-15-9	Ethylene glycol mono ethyl ether acetate	Acetic acid 2 ethoxy ethyl ester::Ethyl glycol acetate::Ethylene glycol mono ethyl ether acetate	240	245
111-30-8	Glutaral	Glutaral::Pentanedial, 1,5-	120	121
111-30-8	Glutaraldehyde	Glutaral::Pentanedial, 1,5-	120	121
111-30-8	Pentanedial, 1,5-	Glutaral::Pentanedial, 1,5-	120	121
111-40-0	Diethylene triamine		140	148
111-41-1	Amino ethylethanolamine		140	148
111-41-1	Amino ethylethanolamine		140	142

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CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
111-41-1	Amino ethylethanolamine		310	311	123-39-7	Methyl formamide, N-		130	132
111-42-2	Diethanolamine		140	142	123-42-2	Diacetone Alcohol		390	391
111-44-4	Dichloro ethyl ether		240	241	123-51-3	Isoamyl alcohol	Methyl butan-1-ol, 3-	310	312
111-44-4	Dichloro ethyl ether		260	261	123-51-3	Methyl butan-1-ol, 3-	Methyl butan-1-ol, 3-	310	312
111-46-6	Diethylene Glycol		310	314	123-72-8	Butanal, n-	Butyraldehyde, n-	120	121
111-65-9	Octane, n-		290	291	123-72-8	Butyraldehyde, n-	Butyraldehyde, n-	120	121
111-69-3	Adipic acid dinitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	123-73-9	Butenal, 2-	Butenal, 2-::Ethane diol dipropoate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
111-69-3	Adipic acid nitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	123-73-9	Croton aldehyde	Butenal, 2-::Ethane diol dipropoate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
111-69-3	Adiponitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	123-73-9	Ethane diol dipropoate, 1,2-	Butenal, 2-::Ethane diol dipropoate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
111-69-3	Adipyl dinitrile	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	123-73-9	Methyl acrolein	Butenal, 2-::Ethane diol dipropoate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
111-69-3	Dicyanobutane, 1,4-	Adipic acid dinitrile::Adipic acid nitrile::Adipyl dinitrile::Dicyanobutane, 1,4-	430	431	123-73-9	Propylene aldehyde	Butenal, 2-::Ethane diol dipropoate, 1,2-::Methyl acrolein::Propylene aldehyde	120	121
111-76-2	Butoxy ethanol, 2-	Ethylene glycol monobutyl ether	240	245	123-75-1	Azolidine	Azolidine	270	274
111-76-2	Ethylene glycol monobutyl ether	Ethylene glycol monobutyl ether	240	245	123-75-1	Pyrrolidine	Azolidine	270	274
111-77-3	Diethylene Glycol Monomethyl Ether		240	245	123-86-4	Butyl acetate, n-		220	222
111-87-5	Octanol, n-		310	311	123-91-1	Dioxane, 1,4-		270	278
111-90-0	2-(2-Ethoxyethoxy) ethanol		240	245	123-92-2	Iso Amyl Acetate		220	222
112-07-2	Butyl Cellosolve Acetate		240	245	124-09-4	Hexamethylene diamine		140	148
112-24-3	Triethylenetetramine		140	148	124-40-3	Dimethyl amine		140	142
112-24-3	Triethylenetetramine		140	141	124-41-4	Sodium methylate		550	550
112-25-4	Ethylene Glycol Monoethyl Ether		240	245	124-63-0	Methanesulfonyl chloride		500	505
112-34-5	2-(2-Butoxyethoxy) ethanol	Diethylene glycol monobutyl ether	310	311	126-73-8	Skydrol 500 B-4		460	462
112-34-5	2-(2-Butoxyethoxy) ethanol	Diethylene glycol monobutyl ether	240	245	127-08-2	Potassium acetate		340	340
112-34-5	Diethylene glycol monobutyl ether	Diethylene glycol monobutyl ether	310	311	127-09-3	Sodium acetate		550	550
112-34-5	Diethylene glycol monobutyl ether	Diethylene glycol monobutyl ether	240	245	127-18-4	Ethylene tetrachloride	Ethylene tetrachloride	260	264
112-35-6	Methoxytriglycol		240	245	127-18-4	Tetrachloro ethylene, 1,1,2,2-	Ethylene tetrachloride	260	264
112-50-5	Ethoxytriglycol		240	245	127-19-5	Dimethyl acetamide, N,N-		130	132
112-57-2	Tetraethylene pentamine		140	148	140-29-4	Benzyl cyanide	Phenyl acetonitrile	430	432
112-57-2	Tetraethylene pentamine		140	141	140-29-4	Phenyl acetonitrile	Phenyl acetonitrile	430	432
112-59-4	Hexyl Carbitol Solvent		240	245	140-31-8	Amino ethylpiperazine		140	141
112-80-1	Oleic Acid		100	102	140-31-8	Amino ethylpiperazine		140	148
115-10-6	Dimethyl ether		240	241	140-31-8	Amino ethylpiperazine		270	274
115-20-8	Trichloro ethanol, 2,2,2-		310	315	140-88-5	Acrylic acid ethyl ester	Acrylic acid ethyl ester	220	223
117-81-7	DEHP	DEHP	220	226	140-88-5	Ethyl acrylate	Acrylic acid ethyl ester	220	223
117-81-7	Diethyl hexyl phthalate	DEHP	220	226	141-32-2	Acrylic acid n-butyl ester	Acrylic acid n-butyl ester::Propenoic acid butyl ester, 2-	220	223
119-36-8	Methyl salicylate		220	226	141-32-2	Butyl acrylate, n-	Acrylic acid n-butyl ester::Propenoic acid butyl ester, 2-	220	223
120-12-7	Anthracene	Anthracin	290	293	141-32-2	Propenoic acid butyl ester, 2-	Acrylic acid n-butyl ester::Propenoic acid butyl ester, 2-	220	223
120-12-7	Anthracin	Anthracin	290	293	141-43-5	Amino ethanol, 2-	Amino ethanol, 2-	310	311
120-82-1	Trichloro benzene, 1,2,4-		260	263	141-43-5	Amino ethanol, 2-	Amino ethanol, 2-	140	141
121-44-8	Diethyl ethanamine, N,N-	Diethyl ethanamine, N,N-	140	143	141-43-5	Ethanol amine	Amino ethanol, 2-	310	311
121-44-8	Triethyl amine	Diethyl ethanamine, N,N-	140	143	141-43-5	Ethanol amine	Amino ethanol, 2-	140	141
121-45-9	Trimethyl phosphite		460	462	141-78-6	Acetic acid ethyl ester	Acetic acid ethyl ester	220	222
121-69-7	Dimethyl aniline, N,N-	Dimethyl phenylamine, N,N-	140	146	141-78-6	Ethyl acetate	Acetic acid ethyl ester	220	222
121-69-7	Dimethyl phenylamine, N,N-	Dimethyl phenylamine, N,N-	140	146	142-82-5	Heptane		290	291
121-75-5	Malathion		460	462	142-96-1	Butyl ether, n-		240	241
122-60-1	Phenyl glycidyl ether		270	275	143-22-6	Butoxytriglycol		240	245

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CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
143-33-9	Sodium cyanide		340	345	592-34-7	Butylchloroformate		110	113
144-62-7	Ethane dioic acid	Ethane dioic acid	100	104	592-34-7	Butylchloroformate		220	221
144-62-7	Oxalic acid	Ethane dioic acid	100	104	592-34-7	Butylchloroformate		260	260
149-57-5	Ethyl hexanoic acid		100	102	592-41-6	Hexene		290	294
151-50-8	Potassium cyanide		340	345	593-53-3	Methyl fluoride		260	261
151-56-4	Aziridine	Aziridine	270	274	593-74-8	Dimethyl mercury in decane		470	470
151-56-4	Ethylene imine	Aziridine	270	274	594-27-4	Tetramethyl tin		470	470
154-93-8	Carmustine		990	991	594-45-6	Ethansulphonic acid		500	504
288-47-1	Thiazol, 1,3-		270	274	616-47-7	Methyl imidazole, 1-		270	274
302-01-2	Hydrazine		280	280	624-48-6	Dimethyl maleate		220	224
328-84-7	Benzene, Dichloro-4-Trifluoro		260	263	624-49-7	Dimethyl fumarate		220	224
353-42-4	Boron trifluoride dimethyl etherate		590	590	624-83-9	Methyl isocyanate		210	211
382-10-5	Hexafluoro isobutylene	Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	260	261	628-63-7	Acetic acid pentyl ester	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222
382-10-5	Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	Trifluoro 2-(trifluoromethyl)propene, 3,3,3-	260	261	628-63-7	Amyl acetate, n-	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222
420-04-2	Cyanamide		130	132	628-63-7	Amyl ester acetic acid	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222
460-00-4	Bromo 4-fluorobenzene, 1-	Bromo 4-fluorobenzene, 1-	260	263	628-63-7	Pentyl acetate	Acetic acid pentyl ester::Amyl ester acetic acid::Pentyl acetate	220	222
460-00-4	Bromo fluorobenzene, 4-	Bromo 4-fluorobenzene, 1-	260	263	628-76-2	Dichloropentane		260	261
461-82-5	Anilin, 4-Trifluoromethoxy-		140	145	630-08-0	Carbon monoxide		350	350
462-06-6	Fluorobenzene		260	263	755-95-3	Diiodo-1,1,2,2-tetrafluorobutane, 1,4-		260	261
501-53-1	Benzyl chloro formate		110	113	756-79-6	Dimethyl Methyl Phosphonate		460	462
503-38-8	Diphosgene		110	113	811-97-2	Norflurane	Norflurane	260	261
503-38-8	Diphosgene		220	221	811-97-2	Tetrafluoroethane, 1,1,1,2-	Norflurane	260	261
503-38-8	Diphosgene		260	260	814-68-6	Acryloyl Chloride		110	111
504-29-0	Amino pyridine, 2-		270	271	818-61-1	Ethylene glycol acrylate		220	223
505-60-2	Sulfur Mustard (HD), FINABEL 0.7.C		500	502	822-06-0	Hexamethylene diisocyanate		210	211
505-60-2	Sulfur Mustard (HD), MIL-STD-282		500	502	872-50-4	Methyl 2-pyrrolidon, N-		130	132
512-56-1	Trimethyl phosphate		460	462	920-37-6	Chloro acrylonitrile, 2-		430	431
534-07-6	Dichloro -2-propanone, 1,3-	Dichloro -2-propanone, 1,3-	260	261	920-37-6	Chloro acrylonitrile, 2-		260	264
534-07-6	Dichloro -2-propanone, 1,3-	Dichloro -2-propanone, 1,3-	390	391	921-03-9	Trichloro acetone, 1,1,3-		390	391
534-07-6	Dichloro acetone, 1,3-	Dichloro -2-propanone, 1,3-	390	391	921-03-9	Trichloro acetone, 1,1,3-		260	261
534-07-6	Dichloro acetone, 1,3-	Dichloro -2-propanone, 1,3-	260	261	927-68-4	Bromoethyl Acetate, 2-		260	261
534-52-1	Dinitro-o-cresol, 4,6-	Dinitro-o-cresol, 4,6-	310	316	927-68-4	Bromoethyl Acetate, 2-		220	222
534-52-1	Dinitro-o-cresol, 4,6-	Dinitro-o-cresol, 4,6-	440	442	999-97-3	Hexamethyl disilazane	Hexamethyl disilazane, 1,1,1,3,3,3-	480	480
534-52-1	Dinitrocresol	Dinitro-o-cresol, 4,6-	440	442	999-97-3	Hexamethyl disilazane, 1,1,1,3,3,3-	Hexamethyl disilazane, 1,1,1,3,3,3-	480	480
534-52-1	Dinitrocresol	Dinitro-o-cresol, 4,6-	310	316	1003-09-4	Brom thiophene, 2-		500	509
541-25-3	Lewisite (L), FINABEL 0.7.C		470	470	1118-46-3	Butyl stannium trichloride	Butyl stannium trichloride	470	470
541-25-3	Lewisite (L), MIL-STD-282		470	470	1118-46-3	Tin chloride, mono-n-butyl	Butyl stannium trichloride	470	470
541-41-3	Ethylchloroformate		260	260	1310-58-3	Potassium hydroxide		380	380
541-41-3	Ethylchloroformate		220	221	1310-65-2	Lithium hydroxide		380	380
541-41-3	Ethylchloroformate		110	113	1310-73-2	Caustic soda	Caustic soda	380	380
541-73-1	Dichlorbenzen, 1,3-		260	263	1310-73-2	Sodium hydroxide	Caustic soda	380	380
542-75-6	Dichloro propene, 1,3-		260	261	1313-82-2	Disodium sulfide		340	340
563-80-4	Methyl Isopropyl Ketone		390	391	1319-77-3	Cresols, mixed isomers	Cresylic acid::Methyl phenols	310	316
584-08-7	Potassium carbonate		340	340	1319-77-3	Cresylic acid	Cresylic acid::Methyl phenols	310	316
584-84-9	Toluene diisocyanate, 2,4-		210	212	1319-77-3	Methyl phenols	Cresylic acid::Methyl phenols	310	316

APPENDIX
CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
1321-74-0	Divinyl Benzene		290	292	3536-96-7	Vinyl magnesium chloride		470	470
1330-20-7	Xylene, mixed isomers		290	292	3778-73-2	Ifosamide		990	991
1333-82-0	Chromic acid (CrO3)		370	370	4109-96-0	Dichloro silane		480	480
1333-82-0	Chromic acid (H2SO4 x CrO3)		370	370	4553-62-2	Methyl 1,5-pentantenedinitrile, 2-		430	431
1336-21-6	Ammonium hydroxide	Caustic ammonia	380	380	4635-87-4	Pentene nitrile, 3-		430	431
1336-21-6	Caustic ammonia	Caustic ammonia	380	380	5216-25-1	Chloro benzotrichloride, 4-		260	263
1338-23-4	Methyl Ethyl Ketone Peroxide	Methyl Ethyl Ketone Peroxide	300	302	5329-14-6	Amido sulfonic acid	Amido sulfonic acid::Sulfamidic acid	500	509
1338-23-4	Methyl Ethyl Ketone Peroxide	Methyl Ethyl Ketone Peroxide	300	300	5329-14-6	Amido sulfonic acid	Amido sulfonic acid::Sulfamidic acid	370	370
1341-49-7	Ammonium bifluoride	Ammonium hydrogendifluoride	340	340	5329-14-6	Sulfamic acid	Amido sulfonic acid::Sulfamidic acid	370	370
1341-49-7	Ammonium bifluoride	Ammonium hydrogendifluoride	350	350	5329-14-6	Sulfamic acid	Amido sulfonic acid::Sulfamidic acid	500	509
1341-49-7	Ammonium hydrogendifluoride	Ammonium hydrogendifluoride	350	350	5329-14-6	Sulfamidic acid	Amido sulfonic acid::Sulfamidic acid	370	370
1341-49-7	Ammonium hydrogendifluoride	Ammonium hydrogendifluoride	340	340	5329-14-6	Sulfamidic acid	Amido sulfonic acid::Sulfamidic acid	500	509
1461-22-9	Tin chloride, tri-n-butyl		470	470	5394-63-8	Diketene Acetone		270	278
1493-13-6	Trifluoro methansulfonic acid		500	504	5394-63-8	Diketene Acetone		390	391
1552-12-1	Cyclo octadiene		290	296	5989-27-5	Limonene d-	Methyl 4-isopropenyl-1-cyclohexene, 1-	290	296
1569-01-3	Propoxypropanol		240	245	5989-27-5	Methyl 4-isopropenyl-1-cyclohexene, 1-	Methyl 4-isopropenyl-1-cyclohexene, 1-	290	296
1634-04-4	Methoxy 2-methylpropane, 2-	Methoxy 2-methylpropane, 2-	240	241	6092-54-2	Hexyl chloro formate, 2-		220	221
1634-04-4	Methyl tert-butyl ether	Methoxy 2-methylpropane, 2-	240	241	6303-21-5	Hypophosphorus acid	Phosphinic acid	370	370
1658-42-0	Methyl -2-pyridyl acetate		220	222	6303-21-5	Phosphinic acid	Phosphinic acid	370	370
1675-54-3	Bis (4-(2,3-epoxypropoxy)phenyl)propane	Bis (4-(2,3-epoxypropoxy)phenyl)propane::Isopropylidenediphenol diglycidyl ether, 4,4'-	270	275	6834-92-0	Sodium silicate		340	340
1675-54-3	Bis phenol A diglycidyl ether	Bis (4-(2,3-epoxypropoxy)phenyl)propane::Isopropylidenediphenol diglycidyl ether, 4,4'-	270	275	6881-94-3	Diethylene Glycol Monopropyl Ether		240	245
1675-54-3	Isopropylidenediphenol diglycidyl ether, 4,4'-	Bis (4-(2,3-epoxypropoxy)phenyl)propane::Isopropylidenediphenol diglycidyl ether, 4,4'-	270	275	7087-68-5	Diisopropylethylamine (DIPEA)		140	141
1717-00-6	Refrigerant 141B		260	261	7439-97-6	Mercury		330	330
1761-71-3	Methylen Isocyclohexylamine, 4,4-		140	148	7446-09-5	Sulfur dioxide		360	365
1885-14-9	Phenyl chlor formiate		220	221	7446-09-5	Sulfur dioxide		350	350
2062-98-8	Perfluoro 2-propoxy propionyl fluoride		240	241	7446-11-9	Sulfur trioxide		360	365
2062-98-8	Perfluoro 2-propoxy propionyl fluoride		110	111	7447-41-8	Lithium chloride		340	340
2062-98-8	Perfluoro 2-propoxy propionyl fluoride		260	261	7452-59-7	Octyl chlor formiate		110	113
2068-78-2	Vincristine sulfate		990	991	7452-59-7	Octyl chlor formiate		220	221
2551-62-4	Sulfur hexafluoride		500	509	7487-94-7	Mercuric II chloride		340	340
2551-62-4	Sulfur hexafluoride		350	350	7550-45-0	Titan(IV) chloride	Titan(IV) chloride	360	360
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	500	500	7550-45-0	Titanium tetrachloride	Titan(IV) chloride	360	360
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	500	509	7553-56-2	Iodine		330	330
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	270	274	7601-90-3	Perchloric acid		370	370
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	270	270	7631-90-5	Sodium bisulphite		500	507
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	390	390	7632-51-1	Vanadium tetrachloride		360	360
2634-33-5	Benzisothiazol, 1,2-	Benzisothiazol, 1,2-	390	391	7637-07-2	Boron trifluoride		360	360
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	500	500	7637-07-2	Boron trifluoride		350	350
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	500	509	7647-01-0	Hydrochloric acid		370	370
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	390	391	7647-01-0	Hydrogen chloride		370	370
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	270	270	7647-01-0	Hydrogen chloride		350	350
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	270	274	7647-14-5	Sodium chloride		990	991
2682-20-4	2-Methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one	390	390	7647-18-9	Antimony pentachloride	Pentachloroantimony	360	360
2807-30-9	Propyl Cellosolve, n-		240	245	7647-18-9	Pentachloroantimony	Pentachloroantimony	360	360
3173-53-3	Cyclo hexyl isocanyte		210	211	7664-38-2	Phosphoric acid		370	370

APPENDIX
CHEMICAL INDEX - Chemical Abstract System (CAS) Number - Chemical Names and Synonyms

CAS Number	Chemical Name	Synonym	Class	Sub-Class	CAS Number	Chemical Name	Synonym	Class	Sub-Class
7664-39-3	Hydrofluoric acid		350	350	8006-64-2	Turpentine		290	296
7664-39-3	Hydrofluoric acid		370	370	8006-64-2	Turpentine		290	294
7664-39-3	Hydrogen fluoride		350	350	8007-56-5	Aqua regia	Aqua regia	370	370
7664-39-3	Hydrogen fluoride		370	370	8007-56-5	Nitrohydrochloric Acid	Aqua regia	370	370
7664-41-7	Ammonia	30081410	350	350	8008-20-6	Kerosene		290	291
7664-41-7	Ammonia	30081410	380	380	8012-95-1	Mineral oil		290	291
7664-41-7	Ammonia		350	350	8014-95-7	Oleum	Sulfuric acid fuming	370	370
7664-41-7	Ammonia		380	380	8014-95-7	Sulfuric acid fuming	Sulfuric acid fuming	370	370
7664-93-9	Sulfuric acid		370	370	8030-30-6	VM & P Naphtha		290	291
7681-49-4	Sodium fluoride		340	340	8032-32-4	Naphtha		290	292
7681-52-9	Sodium hypochlorite		340	340	8052-41-3	Low boiling point naphtha - unspecified	Low boiling point naphtha - unspecified	290	291
7681-57-4	Sodium metabisulphite		340	340	8052-41-3	Stoddard solvent	Low boiling point naphtha - unspecified	290	291
7697-37-2	Nitric acid		370	370	9016-87-9	Polymethylene polyphenyle isocyanate (p-MDI)		210	212
7705-08-0	Ferric (III) chloride		340	340	10024-97-2	Nitrous oxide		350	350
7719-09-7	Thionyl chloride		360	360	10025-67-9	Disulphur dichloride	Disulphur dichloride	500	502
7719-12-2	Phosphorus trichloride		360	360	10025-67-9	Sulfur monochloride	Disulphur dichloride	500	502
7722-64-7	Potassium permanganate		340	340	10025-78-2	Trichloro silane		480	480
7722-84-1	Hydrogen peroxide		300	301	10025-87-3	Phosphorus oxychloride		360	360
7726-95-6	Bromine		330	330	10026-04-7	Silicon tetrachloride		480	480
7758-94-3	Ferric (II) chloride		340	340	10026-04-7	Silicon tetrachloride		360	360
7782-41-4	Fluorine		350	350	10034-85-2	Hydriodic acid		370	370
7782-50-5	Chlorine		350	350	10035-10-6	Hydrobromic acid		370	370
7782-50-5	Chlorine		330	330	10035-10-6	Hydrogen bromide		350	350
7783-06-4	Hydrogen sulfide		500	502	10035-10-6	Hydrogen bromide		370	370
7783-06-4	Hydrogen sulfide		350	350	10102-43-9	Nitric oxide		350	350
7783-07-5	Hydrogen selenide		350	350	10102-44-0	Nitrogen Dioxide (liquid)	Nitrogen Dioxide (liquid)	350	350
7783-54-2	Nitrogen trifluoride		350	350	10102-44-0	Nitrogen dioxide		350	350
7783-82-6	Tungsten hexafluoride		350	350	10112-91-1	Calomel	Calomel	340	340
7784-34-1	Arsenic (III) chloride	Arsenic trichloride	340	340	10112-91-1	Mercuric I chloride	Calomel	340	340
7784-34-1	Arsenic trichloride	Arsenic trichloride	340	340	10217-52-4	Hydrazine hydrate		280	280
7784-42-1	Arsine		350	350	10294-34-5	Boron trichloride		360	360
7789-00-6	Potassium chromate		340	340	10294-34-5	Boron trichloride		350	350
7789-21-1	Fluorosulfonic acid		370	370	10544-72-6	Nitrogen tetroxide		350	350
7790-91-2	Chlorine trifluoride		350	350	10545-99-0	Chlorine sulfide	Sulphur dichloride	500	502
7790-94-5	Chlorosulfonic acid		370	370	10545-99-0	Sulphur dichloride	Sulphur dichloride	500	502
7790-94-5	Chlorosulfonic acid		500	504	11097-69-1	PCB 1254		260	263
7790-94-5	Chlorsulfonic acid		500	504	12125-01-8	Ammonium fluoride		340	340
7790-94-5	Chlorsulfonic acid		370	370	12125-02-9	Ammonium chloride		340	340
7803-51-2	Phosphine		350	350	13284-42-9	Pentene nitrile, 2-		430	431
7803-62-5	Silane		480	480	13360-57-1	Diamino sulfo chloride		260	261
8001-58-9	Creosote		310	316	13463-39-3	Nickel carbonyl	Tetracarbonylnickel	470	470
8002-05-9	Crude oil, California	Mineral oil	290	294	13463-39-3	Tetracarbonylnickel	Tetracarbonylnickel	470	470
8002-05-9	Crude oil, California	Mineral oil	290	291	13831-31-7	Acetoxyacetyl Chloride		110	111
8002-05-9	Mineral oil	Mineral oil	290	291	15520-10-2	Dytek® A		140	148
8002-05-9	Mineral oil	Mineral oil	290	294	15663-27-1	Cisplatin		990	991

