



## TECH SERVICES DOCUMENT

(Rev 6/12/2008)  
Page 1 of 6



CAS #	Chemical Name	Zytron 100		Zytron 100XP		Zytron 200		Zytron 300		Zytron 400		Zytron 500	
		Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)
3607-78-1	1,1,1,3,3,3-Hexachloropropane					>480	ND						
71-55-6	1,1,1-Trichloroethane							>480	ND	>480	ND	>480	ND
107-06-2	1,2-Dichloroethane							>480	ND			>480	ND
78-87-5	1,2 Dichloropropane					73	3.2						
107-21-1	1,2-Dihydroxyethane	<480	ND	<480	ND	<480	ND	<480	ND	<480	ND	<480	ND
122-60-1	1,2-Epoxy-3-Phenoxy Propane					>480	ND					>480	ND
106-99-0	1,3 Butadiene							>480	ND			>480	ND
542-75-6	1,3 Dichloropropene					<6	126.6						
822-06-0	1,6-Diisocyanatohexane					>480	ND			>480	ND	>480	ND
108-38-3	1,3-Dimethylbenzene							>480	ND			>480	ND
71-36-3	1-Butanol							>480	ND	>480	ND	>480	ND
106-50-3	1,4-Diaminobenzene							>480	ND				
mixture	21%Sulfur Trioxide 79% Chlorosulfonic Acid					>480	ND					>480	ND
534-85-0	2-Aminodiphenylamine (2-ADP)							>480	ND				
141-43-5	2-Aminoethanol							>480	ND	>480	ND	>480	ND
7697-37-2	Aqua Fortis			>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
78-93-3	2-Butanone MEK							>480	ND	>480	ND	>480	ND
79-06-01	2-Propenamide					>480	ND			>480	ND	>480	ND
542-75-6	3-Chloroallyl Chloride					<6	126.6						
107-05-1	3-Chloropropene					7	18.5			>480	ND		
106-89-8	2-Chloropropylene Oxide							>480	ND			>480	ND
92-67-1	4-Aminodiphenyl					>480	ND	>480	ND			>480	ND
92-67-1	4-Phenylaniline					>480	ND	>480	ND			>480	ND
98-29-3	4-Tert-Butylcatechol									>480	ND		
100-43-6	4-Vinylpyridine					76	7.3						
64-19-7	Acetic Acid					>480	ND	89	1.93	>480	ND	>480	ND
108-24-7	Acetic Anhydride					>480	ND					>480	ND
67-64-1	Acetone					17	2.2	>480	ND	>480	ND	>480	ND
75-05-8	Acetonitrile					52	0.761	>480	ND	>480	ND	>480	ND
79-06-01	Acrylamide					>480	ND			>480	ND	>480	ND
107-13-1	Acrylonitrile					65	1.6	95	0.2			>480	ND
107-05-1	Allyl Chloride					7	18.5			>480	ND		
7784-24-9	Aluminium Potassium Sulfate 12 Hydrate							>480	ND			>480	ND
98-83-9	A-Methyl Styrene							>480	ND			>480	ND

WARNING: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and industry standards.

CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Kappler Protective Apparel & Fabrics • Technical Services Department • Post Office Box 218  
(Shipping: 70 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 •  
Fax 1-256-505-4151 • email: info@kappler.com

Eagle Instruments, Inc.

4355 International Boulevard ▲ Suite 100 ▲ Norcross, Georgia 30093 ▲ Telephone: 770-935-4124 ▲ Facsimile: 770-935-1624



## TECH SERVICES DOCUMENT

(Rev 6/12/2008)  
Page 2 of 6



CAS #	Chemical Name	Zytron 100		Zytron 100XP		Zytron 200		Zytron 300		Zytron 400		Zytron 500	
		Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)
7664-41-7	Ammonia Gas							39	0.16			>480	ND
7664-41-7	Ammonia Liquid									>480	ND		
62-53-3	Aniline					>480	ND	>480	ND	>480	ND	>480	ND
	Arctic Heating Fuel mixture					>480	ND						
110-86-1	Azabenzene					17	33.1	>480	ND			>480	ND
333-41-5	Basudin					>480	ND					>480	ND
7664-93-9	Battery Acid	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
71-43-2	Benzene					36	11	>480	ND			>480	ND
106-99-0	Biethylene							>480	ND			>480	ND
	Mixture Black Liquor	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
13319-75-0	Boron Trifluoride Dihydrate									>480	ND		
7726-95-6	Bromine											30	>.05
74-83-9	Bromomethane					59	60.9						
71-36-3	Butyl Alcohol							>480	ND	>480	ND	>480	ND
1634-04-4	Butyl Methyl Ether							>480	ND	>480	ND	>480	ND
108-95-2	Carbolic Acid					287	0.32	85	60.4	>480	ND	>480	ND
75-15-0	Carbon Bisulfide					2	4.43	>480	ND	>480	ND	>480	ND
75-15-0	Carbon Disulfide					2	4.43	>480	ND	>480	ND	>480	ND
75-44-5	Carbon Oxychloride							>480	ND				
1310-73-2	Caustic Soda	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
7782-50-5	Chlorine Gas							>480	ND			>480	ND
7782-50-5	Chlorine Liquid									>480	ND		
79-11-8	Chloroacetic Acid							>480	ND			>480	ND
108-90-7	Chlorobenzene					38	12.9						
74-87-3	Chloromethane							>480	ND			>480	<0.01
7790-94-5	Chlorosulfonic Acid					>480	ND	>480	ND	>480	ND	>480	ND
1333-82-0	Chromic Acid	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
	mixture Crude Oil Alaska North Slope					>480	ND						
98-82-8	Cumene							>480	ND			>480	ND
80-15-9	Cumene Hydroperoxide							>480	ND			>480	ND
107-13-1	Cyanoethylene					65	1.6	95	0.2			>480	ND
75-05-8	Cyanomethane					52	0.761	>480	ND	>480	ND	>480	ND
110-82-7	Cyclohexane							>480	ND			>480	ND

WARNING: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and industry standards.

CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Kappler Protective Apparel & Fabrics • Technical Services Department • Post Office Box 218  
(Shipping: 70 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 •  
Fax 1-256-505-4151 • email: info@kappler.com

Eagle Instruments, Inc.

4355 International Boulevard ▲ Suite 100 ▲ Norcross, Georgia 30093 ▲ Telephone: 770-935-4124 ▲ Facsimile: 770-935-1624



## TECH SERVICES DOCUMENT

(Rev 6/12/2008)  
Page 3 of 6



CAS #	Chemical Name	Zytron 100		Zytron 100XP		Zytron 200		Zytron 300		Zytron 400		Zytron 500	
		Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)
3173-53-3	Cyclohexyl Isocyanate					>480	ND					>480	ND
333-41-5	Diazanone 25%					>480	ND					>480	ND
75-78-5	Dichlorodimethylsilane					>480	ND					>480	ND
75-09-2	Dichloromethane					2	85.1	44	85.2	88	85.1	>480	ND
109-89-7	Diethylamine					21	235	>480	ND	>480	ND	>480	ND
109-99-9	Diethylene Oxide					3	463	>480	ND	>480	ND	>480	ND
110-91-8	Diethylene Oximide					145	1.27						
57-14-7	Dimazine											>480	ND
127-19-5	Dimethyl-Acetamide							>480	ND			>480	ND
124-40-3	Dimethylamine							>480	ND			>480	ND
75-78-5	Dimethyldichlorosilane					>480	ND					>480	ND
75-21-8	Dimethylene Oxide							81	0.046	305	1.08	>480	ND
100-37-8	Diethylethanolamine							>480	ND			>480	ND
68-12-2	Dimethylformamide					77	1.81	240	0.19	>480	ND	>480	ND
57-14-7	Dimethylhydrazine N,N-											>480	ND
67-64-1	Dimethyl Ketone					17	2.2	>480	ND	>480	ND	>480	ND
77-78-1	Dimethyl Sulfate							>480	ND			>480	ND
10544-72-6	Dinitrogen Tetroxide							>480	ND				
127-19-5	DMAC							>480	ND			>480	ND
39475-55-3	Dursban 7%					>480	ND					>480	ND
106-89-8	Epichlorohydrin							>480	ND			>480	ND
121-44-8	Ethanamine							>480	ND			>480	ND
64-19-7	Ethanoic Acid					>480	ND	89	1.93	>480	ND	>480	ND
108-24-7	Ethanoic Anhydride					>480	ND					<480	ND
64-17-5	Ethanol					>480	ND						
141-43-5	Ethanolamine							>480	ND	>480	ND	>480	ND
100-42-5	Ethenyl Benzene							>480	ND			>480	ND
141-78-6	Ethyl Acetate					14	6.11	>480	ND	>480	ND	>480	ND
64-17-5	Ethyl Alcohol					>480	ND						
541-41-3	Ethyl Chloroformate							>480	ND			>480	ND
141-78-6	Ethyl Ethanoate					14	6.11	>480	ND	>480	ND	>480	ND
107-06-2	Ethylene Dichloride							>480	ND			>480	ND
107-21-1	Ethylene Glycol	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
75-21-8	Ethylene Oxide							81	0.46	305	1.08	>480	ND
7705-8-0	Ferric Chloride							>480	ND			>480	ND

WARNING: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and industry standards.

CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Kappler Protective Apparel & Fabrics • Technical Services Department • Post Office Box 218  
(Shipping: 70 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 •  
Fax 1-256-505-4151 • e-mail: info@kappler.com

Eagle Instruments, Inc.

4355 International Boulevard ▲ Suite 100 ▲ Norcross, Georgia 30093 ▲ Telephone: 770-935-4124 ▲ Facsimile: 770-935-1624



## TECH SERVICES DOCUMENT

(Rev 6/12/2008)  
Page 4 of 6



CAS #	Chemical Name	Zytron 100		Zytron 100XP		Zytron 200		Zytron 300		Zytron 400		Zytron 500	
		Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)
74-90-8	Formonitrile							>480	ND	>480	ND		
50-00-0	Formaldehyde	>480	ND					>480	ND			>480	ND
8006-61-9	Gasoline							>480	ND	>480	ND	>480	ND
111-30-8	Gluteraldehyde	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
111-30-8	Glutaric Dialdehyde	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
Mixture	Green Liquor	>480	ND			>480	ND					>480	ND
110-82-7	Hexahydrobenzene							>480	ND				>480
822-06-0	Hexamethylene Diisocyanate					>480	ND			>480	ND	>480	ND
110-54-3	Hexane					7	0.35	>480	ND	>480	ND	>480	ND
10034-85-2	Hydriotic Acid					>480	ND					>480	ND
7647-01-0	Hydrochloric Acid							>480	ND			>480	ND
7664-39-3	Hydrofluoric Acid	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
7647-01-0	Hydrogen Chloride							>480	ND			>480	ND
74-90-8	Hydrogen Cyanide							>480	ND	>480	ND		
7664-39-3	Hydrogen Fluoride Liquid 99%											>480	ND
7722-84-1	Hydrogen Peroxide	>480	ND			>480	ND					>480	ND
7803-51-2	Hydrogen Phosphide							>480	ND				
7783 - 0 6--4	Hydrogen Sulfide							>480	ND				
2855-13-2	Isophorone Diamine ( IPDA )							>480	ND				
98-83-9	Isopropenyl Benzene							>480	ND			>480	ND
98-82-8	Isopropyl Benzene							>480	ND			>480	ND
121-75-5	Malathion 50%					>480	ND					>480	ND
67-56-1	Methanol					>480	ND	39	0.271	>480	ND	>480	ND
67-56-1	Methyl Alcohol					>480	ND	39	0.271	>480	ND	>480	ND
108-88-3	Methyl Benzene					6	355	>480	ND	>480	ND	>480	ND
74-83-9	Methyl Bromide					59	60.9						
74-87-3	Methyl Chloride							>480	ND			>480	<0.01
71-55-6	Methyl Chloroform							>480	ND	>480	ND	>480	ND
79-22-1	Methyl Chloroformate							>480	ND			>480	ND
78-93-3	Methyl Ethyl Ketone							>480	ND	>480	ND	>480	ND
872-50-4	Methyl Pyrrilidone							>480	ND			>480	ND
77-78-1	Methyl Sulfate							>480	ND			>480	ND

WARNING: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and industry standards.

CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Kappler Protective Apparel & Fabrics • Technical Services Department • Post Office Box 218  
(Shipping: 70 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 •  
Fax 1-256-505-4151 • e-mail: info@kappler.com

Eagle Instruments, Inc.

4355 International Boulevard ▲ Suite 100 ▲ Norcross, Georgia 30093 ▲ Telephone: 770-935-4124 ▲ Facsimile: 770-935-1624



## TECH SERVICES DOCUMENT

(Rev 6/12/2008)  
Page 5 of 6



CAS #	Chemical Name	Zytron 100		Zytron 100XP		Zytron 200		Zytron 300		Zytron 400		Zytron 500	
		Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)	Breakthrough Time (min)	Perm Rate (ug/cm2/min)
75-09-2	Methylene Dichloride					2	85.1	44	85.2	88	85.1	>480	ND
50-00-0	Methylene Oxide	>480	ND					>480	ND			>480	ND
79-11-8	Monochloroacetic Acid							>480	ND			>480	ND
75-01-04	Monochloroethylene					>480	ND	>480	ND			>480	ND
7790-94-5	Monochlorosulfuric Acid					>480	ND	>480	ND	>480	ND	>480	ND
110-91-8	Morpholine					145	1.27						
8006-61-9	Motor Fuel							>480	ND	>480	ND	>480	ND
7647-01-0	Muriatic Acid							>480	ND			>480	ND
108-38-3	M- Xylene							>480	ND			>480	ND
109-89-7	N-Ethylethanamine					21	235	>480	ND	>480	ND	>480	ND
110-54-3	N-Hexane					7	0.35	>480	ND	>480	ND	>480	ND
872-50-4	N-methyl-2pyrrolidone							>480	ND			>480	ND
68-12-2	N,N-Dimethylformamide					77	1.81	240	0.19	>480	ND	>480	ND
109-66-0	N-Pentane							>480	ND			>480	ND
7697-37-2	Nitric Acid			>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
98-95-3	Nitrobenzene					97	19.8	>480	ND	>480	ND	>480	ND
98-95-3	Nitrobenzol					97	19.8	>480	ND	>480	ND	>480	ND
10102-44-0	Nitrogen Dioxide											>480	ND
10102-44-0	Nitrogen Peroxide											>480	ND
10544-72-6	Nitrogen Tetroxide							>480	ND				
95-48-7	O-Cresol							>480	ND			>480	ND
121-75-5	O-dimethyl-phosphorodithioate					>480	ND					>480	ND
7664-38-2	Orthophosphoric Acid			>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
109-66-0	Pentane							>480	ND			>480	ND
127-18-4	Perchlorethylene					21	8.41	>480	ND	>480	ND	>480	ND
108-95-2	Phenol @43 C					287	0.32	85	60.4	>480	ND	>480	ND
108-90-7	Phenyl Chloride					38	12.9						
62-53-3	Phenylamine					>480	ND	>480	ND	>480	ND	>480	ND
122-60-1	Phenylglycidyl Ether					>480	ND					>480	ND
71-43-2	Phenyl Hydride					36	11	>480	ND			>480	ND
98-13-5	Phenyltrichlorosilane					>480	ND					>480	ND
75-44-5	Phosgene							>480	ND				
7803-51-2	Phosphine							>480	ND				

WARNING: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and industry standards.

CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Kappler Protective Apparel & Fabrics • Technical Services Department • Post Office Box 218  
(Shipping: 70 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 •  
Fax 1-256-505-4151 • e-mail: info@kappler.com

Eagle Instruments, Inc.

4355 International Boulevard ▲ Suite 100 ▲ Norcross, Georgia 30093 ▲ Telephone: 770-935-4124 ▲ Facsimile: 770-935-1624



## TECH SERVICES DOCUMENT

(Rev 6/12/2008)  
Page 6 of 6



CAS #	Chemical Name	Zytron 100		Zytron 100XP		Zytron 200		Zytron 300		Zytron 400		Zytron 500	
		Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)	Breakthrough Time (min)	Perm Rate (µg/cm2/min)
7664-38-2	Phosphoric Acid			>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
7719-12-2	Phosphorus Chloride											>480	ND
7719-12-2	Phosphorus Trichloride											>480	ND
151-50-8	Potassium Cyanide	>480	ND									>480	ND
106-50-3	p-Phenylenediamine { PPDA }							>480	ND				
78-87-5	Propylene Dichloride					73	3.2						
110-86-1	Pyridine					17	33.1	>480	ND			>480	ND
10026-04-7	Silicon Tetrachloride					80	1.3						
7775--09--9	Sodium Chlorate							>480	ND			>480	ND
7681-52-9	Sodium Chloride Oxide	>480	ND			>480	ND					>480	ND
10034-82-9	Sodium Chromate Tetrahydrate							>480	ND			>480	ND
143-33-9	Sodium Cyanide					>480	ND						
1310-73-2	Sodium Hydroxide	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
7681-52-9	Sodium Hypochlorite	>480	ND			>480	ND					>480	ND
143-33-9	Sodium salt of Hydrocyanic Acid					>480	ND						
mixture	Stoddard Solvent									>480	ND		
100-42-5	Styrene Monomer							>480	ND			>480	ND
10545-99-0	Sulfur Dichloride									40	4.94		
7446-09-5	Sulfur Dioxide							>480	ND			>480	ND
7664-93-9	Sulfuric Acid	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND	>480	ND
127-18-4	Tetrachloroethylene					21	8.41	>480	ND	>480	ND	>480	ND
7550-45-0	Tetrachlorotitanium							>480	ND				
109-99-9	Tetrahydrofuran					3	463	>480	ND	>480	ND	>480	ND
7550-45-0	Titanium Tetrachloride							>480	ND				
108-88-3	Toluene					6	355	>480	ND	>480	ND	>480	ND
10025-78-2	Trichlorosilane					30	58.9						
75-94-5	Trichlorovinylsilane					75	3.6						
121-44-8	Triethylamine							>480	ND			>480	ND
76-05-1	Trifluoroacetic Acid					>480	ND					>480	ND
13319-75-0	Trifluoroborane Dihydrate									>480	ND		
76-05-1	Trifluoroethanoic Acid					>480	ND					>480	ND
1330-78-5	Tritolyl Phosphate									>480	ND		
75-01-04	Vinyl Chloride					>480	ND	>480	ND			>480	ND
Mixture	White Liquor	>480	ND			>480	ND					>480	ND

WARNING: There are uses, environments and chemicals for which these garments and/or fabrics are unsuitable. It is the responsibility of the user to review available data and verify that the garment and/or fabric is appropriate for the intended use and meets all specified government and industry standards.

CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Kappler Protective Apparel & Fabrics • Technical Services Department • Post Office Box 218  
(Shipping: 70 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 •  
Fax 1-256-505-4151 • e-mail: info@kappler.com

**Eagle Instruments, Inc.**

4355 International Boulevard ▲ Suite 100 ▲ Norcross, Georgia 30093 ▲ Telephone: 770-935-4124 ▲ Facsimile: 770-935-1624