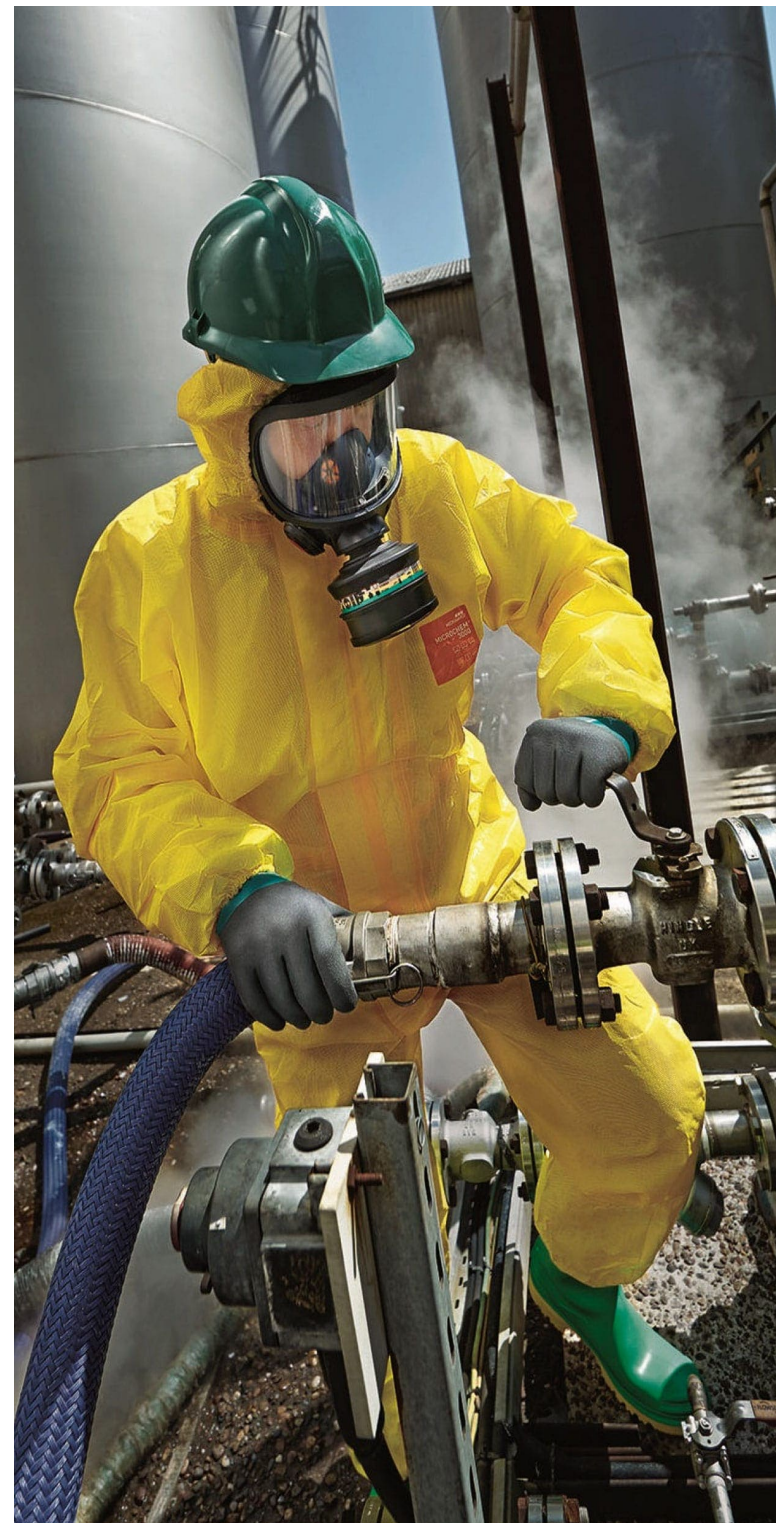


DELTA Zofingen AG

AnsellGUARDIAN® Chemical Report

August 28, 2025



Haftungsausschluss

In diesem Bericht finden Sie Informationen über die Barriereleistung, die persönliche Schutzausrüstungen (PSA) gegen von Ihnen gewählte Chemikalien erbringen. Diese Informationen sind dazu gedacht, dem Arbeitsschutzbeauftragten in Ihrer Organisation fundiertere Entscheidungen darüber zu ermöglichen, welche PSA von Ansell den besten Schutz für die vorgesehenen Arbeitsbedingungen bietet. Außerdem werden sie Ihnen bei der Durchführung einer Risikobewertung für Ihre Organisation helfen.

Wir möchten nachdrücklich darauf hinweisen, dass die Permeationszeiten nicht mit sicheren Tragezeiten gleichzusetzen sind. Die sichere Tragezeit ist abhängig vom ordnungsgemäßen Anziehen der PSA, der Umgebungstemperatur, der Toxizität der Chemikalie, sowie einer Reihe anderer Faktoren. Zuständig für die Durchführung einer Risikobewertung, vor der Auswahl der für die jeweilige Arbeit geeigneten PSA, ist der Beauftragte für Arbeits- und Gesundheitsschutz Ihres Unternehmens. Falls Sie einen Aspekt ausführlicher besprechen möchten, setzen Sie sich mit uns in Verbindung. Die Schätzungen der Barrierschutzeigenschaften von Handschuhen und PSA basieren auf Extrapolationen von Labortestergebnissen, sowie Informationen über die Zusammensetzung der Chemikalien. Synergieeffekte durch ein Mischen von Chemikalien sind hier nicht berücksichtigt.

Schätzwerte können sich ändern, wenn neu durchgeführte Tests bessere Grundlagen für Extrapolationen bieten. Aus diesen Gründen erfüllen die in diesem Bericht enthaltenen Informationen ausschließlich eine beratende Funktion und Ansell schließt aus diesem Grund eine Haftung, sowie eine Gewährleistung der hier getroffenen Aussagen in vollem Umfang aus.

Legende für Handschutz

Permeationsdurchbruchzeiten		
<10		Nicht empfohlen
10-30		Spritzschutz
30-60		Spritzschutz
60-120		Mittlerer Schutz
120-240		Mittlerer Schutz
240-480		Guter Schutz
>480		Guter Schutz

Die normalisierte Permeationsdurchbruchzeit ist die Zeit (in Minuten), die die betreffende Chemikalie benötigt, um das Material mit einer Rate von
1,0 µg /cm²/min (nach EN ISO 374) oder
0,1 µg /cm²/min (nach ASTM 739) zu durchdringen.

PS = Physischer Zustand: A = Sprühdose,
G = Gas, L = Flüssigkeit , P = Paste,
S = Feststoff

Permeationsdurchbruchzeiten

Die in diesem Chart angegebenen Permeationsdurchbruchzeiten wurden gemäß der Norm EN ISO 374 evaluiert. Farbige Zellen mit Zahlen und dem Symbol  entsprechen experimentell ermittelten Daten eines akkreditierten Labors. Der Rest der Zellen entspricht Schätzungen
Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	100	I	10-30'	10-30'	10-30'	10-30'	10-30'	10-30'	120-240'	10-30'	<10'	>480'
108-65-6	1-Methoxy-2-Propylacetat	100	I	<10'	<10'	<10'	<10'	<10'	<10'	10-30'	<10'	<10'	203' 
67-64-1	Aceton	100	I	<10'	1' 	<10'	<1' 	<10'	<1' 	3' 	<1' 	2' 	7' 
75-05-8	Acetonitril	100	I	<10'	<10'	<5' 	<5' 	<10'	<1' 	5' 	<10'	<10'	14' 
107-13-1	Acrylnitril	100	I	<10'	<10'	<10'	<10'	<10'	<10'	3' 	<10'	<10'	8' 
79-10-7	Acrylsäure	100	I	<10'	<10'	<5' 	30-60'	<10'	<10'	30-60'	<10'	10-30'	35' 
107-18-6	Allylalcohol	100	I	<10'	<10'	<10'	<10'	<10'	<10'	30-60'	<10'	<10'	30-60'
64-18-6	Ameisensäure	98	I	<10'	<10'	<10'	60-120'	<10'	<10'	20' 	<10'	60-120'	46' 
7664-41-7	Ammoniak	100	g	<10'	10-30'	13' 	<10' 	10-30'	<10'	>480' 	<10'	<10'	>480' 
1336-21-6	Ammoniumhydroxid	25	I	8' 	26' 	29' 	9' 	10-30'	<10'	51' 	14' 	<10'	416' 
71-43-2	Benzol	100	I	<10'	<10'	<10'	<10'	<10'	<10'	5' 	<10'	<1' 	26' 
98-88-4	benzoyl chloride	100	I	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	10-30'

Permeationsdurchbruchzeiten

Die in diesem Chart angegebenen Permeationsdurchbruchzeiten wurden gemäß der Norm EN ISO 374 evaluiert. Farbige Zellen mit Zahlen und dem Symbol **c** entsprechen experimentell ermittelten Daten eines akkreditierten Labors. Der Rest der Zellen entspricht Schätzungen
Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
80-05-7	Bisphenol A	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
590-92-1	Brompropansäure	100	s	240-480'	240-480'	240-480'	120-240'	240-480'	240-480'	>480'	240-480'	120-240'	>480'
123-86-4	Butylacetat	100	l	<10'	3' c	<10'	<10'	<10'	<1' c	10-30'	<10'	<1' c	44' c
111-76-2	Butylglycol	100	l	10-30'	10-30'	10-30'	30-60'	30-60'	10-30'	60-120'	10-30'	30-60'	240-480'
67-66-3	Chloroform	100	l	<10'	<10'	<10'	<5' c	<10'	<10'	3' c	<1' c	<1' c	<10'
64742-47-8	Destillat (Erdöl), mit Wasserstoff behandelte leichte chemische Eigenschaft	100	l	>480'	>480'	>480'	10-30'	>480'	>480'	>480'	30-60'	<10'	>480'
84-74-2	Dibutylphthalate	100	l	60-120'	120-240'	120-240'	10-30'	120-240'	60-120'	240-480'	60-120'	10-30'	>480'
68334-30-5	Diesel LS	100	l	>480'	>480'	>480' c	10-30'	>480'	>480'	>480'	30-60'	<10'	>480'
109-89-7	Diethylamin	100	l	<10'	3' c	1' c	2' c	<10'	<1' c	6' c	<10'	<10'	26' c
110-85-0	Diethylenediamine	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
68-12-2	Dimethylformamid	100	l	<10'	<10'	<5' c	2' c	<10'	<10'	9' c	<10'	<10'	20' c

Permeationsdurchbruchzeiten

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Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
67-68-5	Dimethylsulfoxide	100	I	<10'	<10'	5' 	10' 	10-30'	10' 	93' 	6' 	18' 	300' 
64-19-7	Essigsäure	100	I	<5' 	8' 	7' 	17' 	<10'	<10'	30' 	5' 	<10'	103' 
141-43-5	Ethanolamin	100	I	60-120'	>480' 	60-120'	60-120'	>480' 	60-120'	120-240'	60-120'	60-120'	>480'
64-17-5	Ethyl alcohol	50	I	30-60'	30-60'	30-60'	30-60'	240-480'	30-60'	>480'	49' 	30-60'	>480'
64-17-5	Ethyl alcohol	96	I	<10'	10-30'	<10'	<10'	10-30'	<10'	120-240'	<10'	10-30'	240-480'
110-80-5	Ethyl Glycol	100	I	<10'	<10'	5' 	30-60'	10-30'	<10'	30-60'	<10'	30-60'	120-240'
141-78-6	Ethylacetat	100	I	<10'	<10'	1' 	1' 	<10'	<1' 	5' 	<10'	<1' 	18' 
64-17-5	Ethylalkohol	100	I	<10'	26' 	<10'	<10'	25' 	5' 	130' 	4' 	26' 	240-480'
107-21-1	Ethylenglykol	100	I	>480'	>480'	>480'	240-480'	>480' 	>480'	>480' 	>480'	120-240'	>480'
111-15-9	Ethylglykolethylacetat	100	I	<10'	<10'	<10'	<10'	<10'	<10'	30-60'	<10'	<10'	60-120'
7664-39-3	Fluorwasserstoffsäure (aq., 48-51%)	49	I	<10'	<10'	<5' 	29' 	10-30'	<10'	93' 	<10'	10-30'	120-240'
50-00-0	Formaldehyd	37	I	>480' 	>480' 	>480' 	>480' 	>480' 	395' 	>480' 	>480' 	>480' 	>480' 

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
96-48-0	Gamma-Butyrolaceton	100	I	<10'	<10'	<10'	10-30'	<10'	<10'	<10'	<10'	10-30'	30-60'
8006-61-9	Gasoline	100	I	30-60'	60-120'	84' 	<10'	60-120'	<10'	120-240'	0' 	<10'	>480' 
111-30-8	Glutaraldehyde, 50%	50	I	>480'	>480' 	>480' 	>480'	>480'	>480' 	>480'	>480' 	>480' 	>480'
142-82-5	Heptan	100	I	>480' 	>480' 	>480' 	<5' 	>480' 	>480' 	>480' 	38' 	<5' 	>480' 
999-97-3	Hexamethyldisilazan	100	I	60-120'	60-120'	60-120'	<10'	120-240'	60-120'	>480' 	60-120'	<10'	>480'
540-84-1	Isooctane	100	I	>480'	>480'	>480' 	10-30'	>480'	>480'	>480'	60-120'	10-30'	>480'
78-59-1	Isophoron	100	I	10-30'	10-30'	10-30'	10-30'	10-30'	10-30'	60-120'	10-30'	<10'	249' 
67-63-0	Isopropanol	100	I	42' 	175' 	117' 	70' 	>480' 	85' 	380' 	25' 	60-120'	>480' 
67-63-0	Isopropanol	70	I	30-60'	120-240'	178' 	60-120'	>480' 	>480' 	240-480'	56' 	120-240'	>480'
75-15-0	Kohlenstoffdisulfid	100	I	<10'	<10'	<5' 	<10'	<10'	<10'	1' 	<10'	<10'	12' 
8007-45-2	Kohlenteeröl	100	I	240-480'	240-480'	240-480'	30-60'	240-480'	240-480'	>480'	240-480'	10-30'	>480'
80-62-6	Methacrylsäuremethylester (>99,0%)	100	I	<10'	<10'	2' 	<10'	<10'	<10'	<10'	<10'	<10'	29' 

Permeationsdurchbruchzeiten

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Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
67-56-1	Methyl alcohol	100	I	<10'	4' 	1' 	9' 	10-30'	<1' 	22' 	<1' 	<1' 	75' 
1634-04-4	Methyl tert-Butyl Ether	100	I	10-30'	67' 	14' 	<10'	30-60'	10-30'	60-120'	10-30'	<10'	>480' 
96-33-3	Methylacrylat	100	I	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	10-30'
74-89-5	Methylamine, 40% aqueous solution	40	I	<10'	<10'	<10'	<10'	<10'	<10'	10-30'	<10'	<10'	120-240'
75-09-2	Methylenchlorid	100	I	<10'	<10'	<10'	<10'	<10'	<10'	2' 	<10'	<10'	4' 
78-93-3	Methylethylketon	100	I	<10'	<10'	<5' 	<10'	<10'	<1' 	3' 	<10'	<10'	11' 
108-10-1	Methylisobutylketon	100	I	<10'	<10'	1' 	<10'	<10'	<10'	<10'	<10'	<10'	60' 
8012-95-1	Mineralöl	100	I	>480'	>480'	>480'	10-30'	>480'	>480'	>480'	30-60'	<10'	>480'
71-36-3	n-Butanol	100	I	39' 	30-60'	56' 	240-480'	120-240'	30-60'	>480' 	37' 	240-480'	>480'
110-54-3	n-Hexan	100	I	450' 	>480' 	>480' 	<5' 	>480'	240-480'	>480' 	21' 	<10'	>480'
872-50-4	N-Methyl-2-Pyrrolidon	100	I	<10'	<10'	<1' 	<10'	<10'	<10'	7' 	<10'	<10'	27' 
71-23-8	n-Propanol	100	I	10-30'	21' 	21' 	30-60'	60-120'	10-30'	200' 	12' 	30-60'	>480'

Permeationsdurchbruchzeiten

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Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
109-60-4	n-Propylacetat	100	I	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	10-30'
1120-21-4	n-Undecan	100	I	>480'	>480'	>480'	10-30'	>480'	>480'	>480'	30-60'	<10'	>480'
8030-30-6	Naphta	100	I	240-480'	240-480'	240-480'	<10'	240-480'	240-480'	>480'	10-30'	<10'	>480'
64742-82-1	Naphta (Erdöl, hydrosulfuriert, schwer)	100	I	60-120'	60-120'	60-120'	<10'	60-120'	60-120'	60-120'	10-30'	<10'	240-480'
64742-49-0	Naphtha (Erdöl, mit Wasserstoff behandelt, leicht)	100	I	>480'	>480'	>480'	<10'	>480'	>480'	>480'	30-60'	<10'	>480'
1310-73-2	Natriumhydroxid	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
7681-52-9	Natriumhypochlorit (aq., 14.5 %)	15	I	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480' c	>480'	>480'
98-95-3	Nitrobenzol	100	I	<10'	<10'	<10'	<10'	10-30'	<10'	30-60'	<10'	<10'	148' c
111-87-5	Octylalkohol	100	I	30-60'	>480' c	60-120'	120-240'	120-240'	60-120'	>480'	60-120'	120-240'	>480'
144-62-7	Oxalic acid, saturated solution	10	I	>480'	>480'	>480'	>480'	>480' c	>480'	>480'	>480'	>480'	>480'
79-21-0	Peressigsäure	39	I	<10'	<10'	<10'	30-60'	<10'	<10'	30' c	15' c	30-60'	60-120'
108-95-2	Phenol, aqueous solution	90	I	<10'	<10'	<10'	<10'	<10'	<10'	10-30'	<10'	<10'	78' c

Permeationsdurchbruchzeiten

Die in diesem Chart angegebenen Permeationsdurchbruchzeiten wurden gemäß der Norm EN ISO 374 evaluiert. Farbige Zellen mit Zahlen und dem Symbol **c** entsprechen experimentell ermittelten Daten eines akkreditierten Labors. Der Rest der Zellen entspricht Schätzungen
Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
108-90-7	Phenyl chloride	100	I	<10'	<10'	<10'	<10'	<10'	<10'	2' c	<10'	<10'	10-30'
7664-38-2	Phosphorsäure	85	I	>480'	>480'	>480' c	>480' c	>480'	>480'	>480' c	>480'	>480'	>480' c
107-12-0	Propionitril	100	I	<10'	<10'	<10'	<10'	<10'	<10'	10-30'	<10'	<10'	14' c
57-55-6	Propylenglykol	100	I	>480'	>480' c	>480'	240-480'	>480'	>480'	>480' c	>480' c	120-240'	>480' c
107-98-2	Propylenglykol-1-Methylether	100	I	6' c	10-30'	14' c	30-60'	4' c	10-30'	60-120'	10-30'	10-30'	296' c
110-86-1	Pyridin	100	I	<10'	<10'	<10'	<1' c	<10'	<10'	<10'	<10'	<10'	13' c
7697-37-2	Salpetersäure	65	I	<10'	6' c	<10'	30-60'	<10'	<10'	30' c	9' c	30-60'	60-120'
7697-37-2	Salpetersäure	70	I	<5' c	<10'	<5' c	29' c	<10'	<1' c	39' c	<10'	15' c	41' c
7647-01-0	Salzsäure	37	I	75' c	30-60'	51' c	101' c	184' c	60' c	>480' c	103' c	45' c	>480' c
7664-93-9	Schwefelsäure	99	I	<10'	<10'	<10'	7' c	<10'	<10'	30-60'	<10'	<10'	60-120'
7664-93-9	Schwefelsäure	50	I	>480' c	>480'	>480' c	>480'	>480'	>480' c	>480'	>480' c	>480' c	>480'
7664-93-9	Schwefelsäure	96	I	<10'	14' c	10-30'	10-30'	10' c	10' c	49' c	11' c	9' c	94' c

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
1310-73-2	Sodium Hydroxide	50	I	>480'	>480'	>480' c	>480' c	>480'	>480'	>480'	>480'	>480'	>480' c
8052-41-3	Stoddard-Lösungsmittel	100	I	60-120'	120-240'	120-240'	<10'	>480' c	120-240'	60-120'	10-30'	<10'	>480'
100-42-5	Styren	100	I	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	22' c
64742-88-7	Terpentinersatz	100	I	>480'	>480'	>480'	10-30'	>480'	>480'	>480'	30-60'	<10'	>480'
127-18-4	Tetrachlorethylen	100	I	<5' c	<10'	8' c	<5' c	10-30'	<10'	60-120'	<10'	<10'	305' c
56-23-5	Tetrachlorkohlenstoff	100	I	<10'	<10'	<10'	<10'	10-30'	10-30'	39' c	<10'	<10'	240-480'
109-99-9	Tetrahydrofuran	100	I	<10'	<10'	<5' c	<10'	<10'	<10'	3' c	<10'	<10'	11' c
7719-09-7	Thionylchlorid	100	I	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10' c
108-88-3	Toluol	100	I	<10'	<10'	1' c	<1' c	<10'	<1' c	6' c	<10'	<10'	34' c
79-01-6	Trichlorethylen	100	I	<10'	<10'	<10'	<10'	<10'	<10'	4' c	<10'	<10'	10-30'
1330-78-5	Tricresylphosphat (isomerische Mixtur)	100	I	120-240'	120-240'	120-240'	120-240'	120-240'	120-240'	240-480'	120-240'	60-120'	>480'
102-71-6	Triethanamin	100	I	>480'	>480' c	>480'	60-120'	>480' c	>480'	>480'	>480'	60-120'	>480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Nitrile	Neoprene	Nitrile	Nitrile	Nitrile /Neoprene	Nitrile	Neoprene	Nitrile
Dicke (mm/mil)				0.11 mm 4.3 mil	0.125 mm 4.9 mil	0.11 mm 4.3 mil	0.13 mm 5.1 mil	0.12 mm 4.7 mil	0.12 mm 4.7 mil	0.20 mm 7.9 mil	0.13 mm 5.1 mil	0.10 mm 3.9 mil	0.42 mm 16.5 mil
Marke				TouchNTuff®	TouchNTuff®	TouchNTuff®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	MICROFLEX®	AlphaTec® Solvex®
Produktgruppe				92- 665.675.670	92-600.605 . 93-300.700	92-500	25-101.201	94-242	MidKnight 93- 852.MK- 296.93-252	93-260.360	93-243.244	Neogard 73- 847.C52	37-900
CAS	Chemischer Name	%	PS										
121-44-8	Triethylamin	100	I	66' c	>480' c	155' c	<5' c	30-60'	6' c	>480' c	16' c	<10'	>480' c
7722-84-1	Wasserstoffperoxid	30	I	158' c	72' c	120' c	>480' c	217' c	>480' c	446' c	126' c	241' c	>480' c
1330-20-7	Xylen (isomerische Mixtur)	100	I	<5' c	<10'	<5' c	<5' c	<10'	<10'	12' c	<10'	<10'	57' c
108-93-0	Zyklohexanol	100	I	60-120'	120-240'	120-240'	10-30'	>480' c	120-240'	>480' c	120-240'	10-30'	>480'
108-94-1	Zyklohexanon	100	I	<10'	<10'	<5' c	<10'	<10'	<10'	10' c	<10'	<10'	58' c

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	100	I	>480'	240-480'	<10'	10-30'	<10'	60-120'	<10'	>480'	120-240'	60-120'
108-65-6	1-Methoxy-2-Propylacetat	100	I	120-240'	132' 	10-30'	10-30'	<10'	10-30'	<10'	60-120'	60-120'	30-60'
67-64-1	Aceton	100	I	9' 	7' 	10-30'	30-60'	<10'	<5' 	<10'	2' 	6' 	5' 
75-05-8	Acetonitril	100	I	5' 	5' 	10-30'	60-120'	<10'	<5' 	<10'	<10'	5' 	5' 
107-13-1	Acrylnitril	100	I	<10'	<10'	10-30'	10-30'	<10'	<10'	<10'	<10'	6' 	<10'
79-10-7	Acrylsäure	100	I	30-60'	10' 	30-60'	60-120'	10-30'	<5' 	10-30'	30-60'	10-30'	30-60'
107-18-6	Allylalcohol	100	I	59' 	51' 	10-30'	10-30'	<10'	10-30'	<10'	60-120'	30-60'	10-30'
64-18-6	Ameisensäure	98	I	30-60'	22' 	30-60'	120-240'	10-30'	10-30'	10-30'	10-30'	10-30'	10-30'
7664-41-7	Ammoniak	100	g	240-480'	120-240'	10-30'	10-30'	<10'	10-30'	<10'	120-240'	30-60'	30-60'
1336-21-6	Ammoniumhydroxid	25	I	348' 	232' 	49' 	30-60'	10-30'	24' 	10-30'	158' 	288' 	42' 
71-43-2	Benzol	100	I	10-30'	23' 	<10'	<10'	<10'	<5' 	<10'	<10'	8' 	6' 
98-88-4	benzoyl chloride	100	I	10-30'	<10'	<10'	10-30'	<10'	<10'	<10'	<10'	<10'	<10'
80-05-7	Bisphenol A	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
590-92-1	Brompropansäure	100	s	>480'	>480'	>480'	>480'	240-480'	>480'	240-480'	>480'	>480'	>480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
123-86-4	Butylacetat	100	I	30-60'	29' c	<10'	10-30'	<10'	<5' c	<10'	8' c	27' c	<10'
111-76-2	Butylglycol	100	I	240-480'	240-480'	120-240'	240-480'	10-30'	60-120'	10-30'	240-480'	120-240'	60-120'
67-66-3	Chloroform	100	I	<10'	<10'	<10'	10-30'	<10'	<10'	<10'	<10'	<10'	1' c
64742-47-8	Destillat (Erdöl), mit Wasserstoff behandelte leichte chemische Eigenschaft	100	I	>480'	>480'	10-30'	30-60'	<10'	>480'	<10'	>480'	>480'	>480'
84-74-2	Dibutylphthalate	100	I	>480'	>480'	120-240'	240-480'	30-60'	240-480'	30-60'	>480'	>480'	>480'
68334-30-5	Diesel LS	100	I	>480'	>480' c	10-30'	30-60'	<10'	>480'	<10'	>480'	>480'	>480'
109-89-7	Diethylamin	100	I	26' c	17' c	<10'	10-30'	<10'	<5' c	<10'	10-30'	28' c	5' c
110-85-0	Diethylenediamine	100	s	>480'	>480' c	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
68-12-2	Dimethylformamid	100	I	10-30'	<5' c	60-120'	120-240'	<10'	<5' c	<10'	10-30'	18' c	<10'
67-68-5	Dimethylsulfoxide	100	I	240-480'	120-240'	240-480'	240-480'	30-60'	10-30'	30-60'	120-240'	120-240'	30-60'
64-19-7	Essigsäure	100	I	56' c	102' c	52' c	60-120'	10-30'	9' c	10-30'	80' c	42' c	83' c
141-43-5	Ethanolamin	100	I	>480'	>480'	>480'	>480'	240-480'	240-480'	240-480'	>480'	>480'	240-480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
64-17-5	Ethyl alcohol	50	I	>480'	>480'	120-240'	>480'	120-240'	60-120'	120-240'	240-480'	>480' 	240-480'
64-17-5	Ethyl alcohol	96	I	240-480'	240-480'	30-60'	>480'	60-120'	<10'	30-60'	60-120'	120-240'	60-120'
110-80-5	Ethyl Glycol	100	I	120-240'	120-240'	60-120'	120-240'	10-30'	30-60'	10-30'	120-240'	60-120'	30-60'
141-78-6	Ethylacetat	100	I	10-30'	18' 	10-30'	10-30'	<10'	<5' 	<10'	10-30'	15' 	8' 
64-17-5	Ethylalkohol	100	I	240-480'	240-480'	30-60'	>480'	60-120'	<10'	30-60'	60-120'	120-240'	65' 
107-21-1	Ethylenglykol	100	I	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
111-15-9	Ethylglykolethylacetat	100	I	60-120'	60-120'	10-30'	30-60'	<10'	10-30'	<10'	60-120'	30-60'	10-30'
7664-39-3	Fluorwasserstoffsäure (aq., 48-51%)	49	I	120-240'	179' 	>480'	>480'	120-240'	9' 	120-240'	120-240'	48' 	10-30'
50-00-0	Formaldehyd	37	I	>480' 	>480' 	>480'	>480' 	>480' 	>480' 	>480' 	>480' 	>480' 	>480' 
96-48-0	Gamma-Butyrolaceton	100	I	30-60'	10-30'	>480'	>480'	60-120'	<10'	60-120'	10-30'	10-30'	<10'
8006-61-9	Gasoline	100	I	>480' 	134' 	<10'	<10'	<10'	60-120'	<10'	120-240'	120-240'	120-240'
111-30-8	Glutaraldehyde, 50%	50	I	>480'	>480' 	>480'	>480'	240-480'	>480'	240-480'	>480'	>480'	>480'
142-82-5	Heptan	100	I	>480' 	>480' 	<10'	10-30'	<10'	>480' 	<10'	157' 	>480' 	75' 
999-97-3	Hexamethyldisilazan	100	I	>480'	>480'	30-60'	60-120'	10-30'	120-240'	10-30'	>480'	240-480'	240-480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
540-84-1	Isooctane	100	I	>480'	>480' c	10-30'	30-60'	<10'	>480' c	<10'	>480'	>480' c	>480'
78-59-1	Isophoron	100	I	240-480'	120-240'	30-60'	60-120'	10-30'	30-60'	10-30'	120-240'	120-240'	60-120'
67-63-0	Isopropanol	100	I	>480' c	>480' c	60-120'	>480'	120-240'	96' c	120-240'	>480'	>480' c	183' c
67-63-0	Isopropanol	70	I	>480'	>480'	120-240'	>480'	240-480'	120-240'	240-480'	>480'	>480'	240-480'
75-15-0	Kohlenstoffdisulfid	100	I	<10'	12' c	<10'	<10'	<10'	<10'	<10'	<10'	<10'	6' c
8007-45-2	Kohlenteeröl	100	I	>480'	>480'	10-30'	30-60'	<10'	>480'	<10'	>480'	>480'	>480'
80-62-6	Methacrylsäuremethylester (>99,0%)	100	I	10-30'	19' c	10-30'	10-30'	<10'	<10'	<10'	10-30'	<10'	<10'
67-56-1	Methyl alcohol	100	I	61' c	28' c	47' c	>480' c	56' c	6' c	39' c	54' c	56' c	20' c
1634-04-4	Methyl tert-Butyl Ether	100	I	>480'	240-480'	10-30'	30-60'	<10'	30-60'	<10'	>480'	120-240'	60-120'
96-33-3	Methylacrylat	100	I	10-30'	<10'	<10'	10-30'	<10'	<10'	<10'	10-30'	<10'	<10'
74-89-5	Methylamine, 40% aqueous solution	40	I	120-240'	60-120'	<10'	<10'	<10'	<10'	<10'	60-120'	30-60'	10-30'
75-09-2	Methylenchlorid	100	I	3' c	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	2' c
78-93-3	Methylethylketon	100	I	10-30'	5' c	10-30'	30-60'	<10'	<5' c	<10'	<10'	7' c	6' c
108-10-1	Methylisobutylketon	100	I	25' c	27' c	10-30'	10-30'	<10'	<10'	<10'	10-30'	<10'	<10'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
8012-95-1	Mineralöl	100	I	>480'	>480'	10-30'	30-60'	<10'	>480'	<10'	>480'	>480'	>480'
71-36-3	n-Butanol	100	I	>480'	>480'	120-240'	240-480'	30-60'	120-240'	30-60'	120-240'	>480'	240-480'
110-54-3	n-Hexan	100	I	>480' c	>480' c	<10'	10-30'	<10'	>480' c	<10'	120-240'	>480' c	34' c
872-50-4	N-Methyl-2-Pyrrolidon	100	I	20' c	10-30'	120-240'	240-480'	<10'	<10'	<10'	10-30'	10-30'	<10'
71-23-8	n-Propanol	100	I	>480'	>480'	120-240'	>480'	60-120'	30-60'	60-120'	60-120'	240-480'	120-240'
109-60-4	n-Propylacetat	100	I	26' c	20' c	<10'	10-30'	<10'	<10'	<10'	<10'	10-30'	<10'
1120-21-4	n-Undecan	100	I	>480'	>480'	10-30'	30-60'	<10'	>480'	<10'	240-480'	>480'	>480'
8030-30-6	Naphta	100	I	>480'	84' c	<10'	10-30'	<10'	>480'	<10'	>480'	>480'	>480'
64742-82-1	Naphta (Erdöl, hydrosulfuriert, schwer)	100	I	240-480'	120-240'	10-30'	30-60'	<10'	60-120'	<10'	120-240'	120-240'	60-120'
64742-49-0	Naphtha (Erdöl, mit Wasserstoff behandelt, leicht)	100	I	>480'	>480'	<10'	10-30'	<10'	>480'	<10'	>480'	>480'	>480'
1310-73-2	Natriumhydroxid	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
7681-52-9	Natriumhypochlorit (aq., 14.5 %)	15	I	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
98-95-3	Nitrobenzol	100	I	120-240'	105' c	10-30'	30-60'	<10'	10-30'	<10'	60-120'	60-120'	120-240'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
111-87-5	Octylalkohol	100	I	>480'	>480'	120-240'	240-480'	30-60'	120-240'	30-60'	240-480'	>480'	240-480'
144-62-7	Oxalic acid, saturated solution	10	I	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
79-21-0	Peressigsäure	39	I	60-120'	60-120'	60-120'	60-120'	30-60'	20' 	30-60'	60-120'	30-60'	30-60'
108-95-2	Phenol, aqueous solution	90	I	60-120'	64' 	240-480'	240-480'	10-30'	<10'	10-30'	30-60'	78' 	104' 
108-90-7	Phenyl chloride	100	I	10-30'	<10'	<10'	10-30'	<10'	<10'	<10'	<10'	<10'	<10'
7664-38-2	Phosphorsäure	85	I	>480'	>480'	>480'	>480'	>480'	>480' 	>480'	>480'	>480' 	>480'
107-12-0	Propionitril	100	I	10-30'	10-30'	10-30'	60-120'	<10'	<10'	<10'	<10'	<10'	<10'
57-55-6	Propylenglykol	100	I	>480'	>480' 	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
107-98-2	Propylenglykol-1-Methylether	100	I	256' 	236' 	30-60'	60-120'	10-30'	10-30'	10-30'	120-240'	60-120'	10-30'
110-86-1	Pyridin	100	I	14' 	10' 	10-30'	10-30'	<10'	<10'	<10'	10-30'	<10'	<10'
7697-37-2	Salpetersäure	65	I	60-120'	62' 	>480' 	>480' 	391' 	10-30'	436' 	68' 	73' 	156' 
7697-37-2	Salpetersäure	70	I	31' 	26' 	240-480'	>480'	240-480'	<5' 	240-480'	30-60'	53' 	60-120'
7647-01-0	Salzsäure	37	I	>480' 	>480' 	240-480'	>480'	60-120'	166' 	60-120'	>480'	>480' 	340' 
7664-93-9	Schwefelsäure	99	I	60-120'	30-60'	240-480'	60-120'	120-240'	<10'	120-240'	10-30'	10-30'	10-30'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
7664-93-9	Schwefelsäure	50	I	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480' c
7664-93-9	Schwefelsäure	96	I	102' c	52' c	347' c	210' c	142' c	13' c	214' c	34' c	34' c	57' c
1310-73-2	Sodium Hydroxide	50	I	>480'	>480' c	>480'	>480'	>480'	>480'	>480'	>480'	>480' c	>480' c
8052-41-3	Stoddard-Lösungsmittel	100	I	>480'	240-480'	10-30'	30-60'	<10'	60-120'	<10'	>480'	240-480'	120-240'
100-42-5	Styren	100	I	10-30'	24' c	10-30'	10-30'	<10'	<5' c	<10'	10-30'	19' c	<10'
64742-88-7	Terpentinersatz	100	I	>480'	>480'	10-30'	30-60'	<10'	>480'	<10'	>480'	>480'	>480'
127-18-4	Tetrachlorethylen	100	I	240-480'	136' c	10-30'	10-30'	<10'	12' c	<10'	120-240'	133' c	60-120'
56-23-5	Tetrachlorkohlenstoff	100	I	240-480'	120-240'	<10'	<10'	<10'	10-30'	<10'	120-240'	60-120'	24' c
109-99-9	Tetrahydrofuran	100	I	10' c	6' c	<10'	<10'	<10'	<10'	<10'	<10'	<10'	6' c
7719-09-7	Thionylchlorid	100	I	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'	<10'
108-88-3	Toluol	100	I	28' c	23' c	<10'	<10'	<10'	<5' c	<10' c	2' c	19' c	5' c
79-01-6	Trichlorethylen	100	I	10-30'	10-30'	<10'	<10'	<10'	<10'	<10'	10-30'	<10'	4' c
1330-78-5	Tricresylphosphat (isomerische Mixtur)	100	I	>480'	>480'	240-480'	240-480'	60-120'	240-480'	60-120'	>480'	>480'	240-480'
102-71-6	Triethanamin	100	I	>480'	>480'	>480'	>480'	120-240'	>480'	120-240'	>480'	>480'	>480'

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Material				Nitrile	Nitrile	Natural Rubber	Natural Rubber	Natural Rubber	Nitrile	Natural Rubber	Nitrile	Nitrile	Nitrile
Dicke (mm/mil)				0.42 mm 16.5 mil	0.38 mm 15 mil	0.73 mm 28.7 mil	1.5 mm 59.1 mil	N.A.	0.22 mm 8.7 mil	N.A.	N.A.	N.A.	N.A.
Marke				AlphaTec® Solvex®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-695	37-675	87-208	87-108	87-029	79-700	62-201	58-735.835	58-530.535	58-201
CAS	Chemischer Name	%	PS										
121-44-8	Triethylamin	100	I	>480'	>480' c	10-30'	30-60'	<10'	100' c	<10'	>480'	240-480'	>480'
7722-84-1	Wasserstoffperoxid	30	I	>480' c	>480' c	>480' c	>480' c	>480' c	140' c	>480' c	471' c	>480' c	>480' c
1330-20-7	Xylen (isomerische Mixtur)	100	I	44' c	49' c	<10'	10-30'	<10'	<5' c	<10'	10-30'	24' c	13' c
108-93-0	Zyklohexanol	100	I	>480'	>480' c	30-60'	60-120'	10-30'	240-480'	10-30'	>480'	240-480'	240-480'
108-94-1	Zyklohexanon	100	I	53' c	42' c	10-30'	30-60'	<10'	6' c	<10'	30-60'	24' c	26' c

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	100	I	>480' 	240-480'	10-30'	60-120'	<10'	120-240'	240-480'	10-30'	240-480'
108-65-6	1-Methoxy-2-Propylacetat	100	I	120-240'	120-240'	>480'	30-60'	>480'	10-30'	>480'	30-60'	>480'
67-64-1	Aceton	100	I	<10'	5' 	>480' 	<5' 	>480' 	9' 	101' 	5' 	>480' 
75-05-8	Acetonitril	100	I	20' 	12' 	>480' 	3' 	>480' 	21' 	330' 	35' 	>480' 
107-13-1	Acrylnitril	100	I	<10'	<10'	60-120'	<10'	240-480'	12' 	>480' 	<10'	>480' 
79-10-7	Acrylsäure	100	I	120-240'	10-30'	136' 	35' 	>480'	64' 	10-30'	30-60'	>480'
107-18-6	Allylalkohol	100	I	120-240'	30-60'	>480'	10-30'	>480'	30-60'	<10'	60-120'	>480'
64-18-6	Ameisensäure	98	I	30-60'	30-60'	>480'	10-30'	240-480'	>480' 	<10'	120-240'	240-480'
7664-41-7	Ammoniak	100	g	240-480'	120-240'	240-480'	30-60'	>480'	30-60'	11' 	<10'	
1336-21-6	Ammoniumhydroxid	25	I	>480'	>480' 	>480' 	31' 	>480'	84' 	<10'	98' 	15' 
71-43-2	Benzol	100	I	32' 	30' 	>480' 	<10'	<10'	5' 	>480'	22' 	>480' 
98-88-4	benzoyl chloride	100	I	10-30'	10-30'	10-30'	<10'	<10'	<10'	>480'	<10'	240-480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
80-05-7	Bisphenol A	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
590-92-1	Brompropansäure	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
123-86-4	Butylacetat	100	l	60-120'	30-60'	>480' c	3' c	30-60'	9' c	>480' c	10-30'	>480' c
111-76-2	Butylglycol	100	l	240-480'	240-480'	>480'	60-120'	>480'	60-120'	120-240'	60-120'	>480'
67-66-3	Chloroform	100	l	<10'	3' c	30' c	<10'	<10'	<10'	>480'	<10'	32' c
64742-47-8	Destillat (Erdöl), mit Wasserstoff behandelte leichte chemische Eigenschaft	100	l	>480'	>480'	>480'	>480'	10-30'	60-120'	>480'	>480'	>480'
84-74-2	Dibutylphthalate	100	l	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
68334-30-5	Diesel LS	100	l	>480'	>480'	>480'	>480' c	30-60'	30-60'	>480'	>480'	>480'
109-89-7	Diethylamin	100	l	55' c	21' c	>480' c	<5' c	<10'	9' c	9' c	30' c	>480' c
110-85-0	Diethylenediamine	100	s	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'	>480'
68-12-2	Dimethylformamid	100	l	43' c	10-30'	222' c	<10'	>480'	58' c	13' c	62' c	>480' c

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
67-68-5	Dimethylsulfoxide	100	I	240-480'	120-240'	>480'	30-60'	>480'	>480'	<10'	10-30'	>480'
64-19-7	Essigsäure	100	I	190' 	87' 	>480' 	27' 	>480'	156' 	<10'	139' 	228' 
141-43-5	Ethanolamin	100	I	>480'	>480'	>480'	240-480'	>480'	60-120'	240-480'	>480'	>480'
64-17-5	Ethyl alcohol	50	I	>480'	>480'	>480'	240-480'	>480'	>480'	<10'	240-480'	>480'
64-17-5	Ethyl alcohol	96	I	>480'	>480'	>480'	60-120'	>480'	240-480'	10-30'	60-120'	>480'
110-80-5	Ethyl Glycol	100	I	240-480'	120-240'	>480'	30-60'	>480'	30-60'	68' 	30-60'	>480'
141-78-6	Ethylacetat	100	I	18' 	33' 	>480' 	<5' 	77' 	10' 	>480' 	<10'	>480' 
64-17-5	Ethylalkohol	100	I	>480'	>480' 	>480' 	60-120'	>480'	350' 	10-30'	107' 	>480' 
107-21-1	Ethylenglykol	100	I	>480'	>480'	>480'	>480'	>480'	>480'	120-240'	>480'	>480'
111-15-9	Ethylglykolethylacetat	100	I	129' 	60-120'	>480'	10-30'	>480'	31' 	>480'	30-60'	>480'
7664-39-3	Fluorwasserstoffsäure (aq., 48-51%)	49	I	120-240'	120-240'	>480'	10-30'	>480'	>480' 	<10'	240-480'	>480'
50-00-0	Formaldehyd	37	I	>480' 	>480' 	>480' 	>480' 	>480'	>480' 	<10'	>480' 	>480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
96-48-0	Gamma-Butyrolacetone	100	I	30-60'	10-30'	>480'	<10'	>480'	60-120'	120-240'	10-30'	>480'
8006-61-9	Gasoline	100	I	240-480'	>480'	>480'	120-240'	10-30'	10-30'	>480'	60-120'	>480' c
111-30-8	Glutaraldehyde, 50%	50	I	>480'	>480'	>480'	>480'	>480'	>480' c	<10' c	>480'	>480' c
142-82-5	Heptan	100	I	>480' c	>480' c	>480' c	>480' c	<10'	27' c	>480' c	200' c	>480' c
999-97-3	Hexamethyldisilazan	100	I	>480'	>480'	10-30'	240-480'	240-480'	60-120'	>480'	60-120'	>480'
540-84-1	Isooctane	100	I	>480'	>480'	>480'	>480' c	10-30'	73' c	>480'	240-480'	>480'
78-59-1	Isophoron	100	I	240-480'	240-480'	>480'	85' c	>480'	30-60'	>480' c	<10'	>480'
67-63-0	Isopropanol	100	I	>480'	>480' c	>480' c	>480' c	>480'	334' c	72' c	155' c	>480'
67-63-0	Isopropanol	70	I	>480'	>480'	>480'	>480'	>480'	240-480'	<10'	120-240'	>480'
75-15-0	Kohlenstoffdisulfid	100	I	<5' c	0' c	>480' c	<5' c	<10'	<5' c	>480' c	<10'	>480' c
8007-45-2	Kohlenteeröl	100	I	>480'	>480'	>480'	>480'	>480'	240-480'	>480'	120-240'	>480' c
80-62-6	Methacrylsäuremethylester (>99,0%)	100	I	30-60'	10-30'	10-30'	<10'	30-60'	10' c	>480'	<10'	>480' c

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
67-56-1	Methyl alcohol	100	I	94' 	49' 	>480' 	4' 	>480' 	52' 	5' 	150' 	170' 
1634-04-4	Methyl tert-Butyl Ether	100	I	>480'	240-480'	>480'	60-120'	10-30'	10-30'	>480'	10-30'	>480'
96-33-3	Methylacrylat	100	I	10-30'	10-30'	10-30'	<10'	60-120'	10-30'	120-240'	<10'	>480'
74-89-5	Methylamine, 40% aqueous solution	40	I	240-480'	60-120'	>480'	10-30'	>480'	60-120'	<10'	120-240'	>480'
75-09-2	Methylenchlorid	100	I	<10'	2' 	23' 	<10'	<10'	4' 	>480' 	15' 	>480' 
78-93-3	Methylethylketon	100	I	10-30'	23' 	>480' 	1' 	136' 	17' 	120-240'	20' 	>480' 
108-10-1	Methylisobutylketon	100	I	30-60'	33' 	>480' 	<10'	60-120'	13' 	240-480'	10-30'	>480' 
8012-95-1	Mineralöl	100	I	>480'	>480'	>480'	>480'	10-30'	60-120'	>480'	>480'	>480'
71-36-3	n-Butanol	100	I	>480'	>480'	>480'	240-480'	>480'	>480'	60-120'	280' 	>480'
110-54-3	n-Hexan	100	I	>480' 	>480' 	>480'	>480' 	<10'	27' 	>480' 	57' 	>480' 
872-50-4	N-Methyl-2-Pyrrolidon	100	I	30-60'	10-30'	366' 	<10'	>480'	30-60'	<10'	<10'	240-480'
71-23-8	n-Propanol	100	I	>480'	>480'	>480'	120-240'	>480'	240-480'	68' 	60-120'	>480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
109-60-4	n-Propylacetat	100	I	30-60'	33' c	>480'	<10'	30-60'	10-30'	120-240'	10-30'	>480'
1120-21-4	n-Undecan	100	I	>480'	>480'	>480'	>480'	10-30'	60-120'	>480'	>480'	>480'
8030-30-6	Naphta	100	I	>480'	>480'	>480'	>480'	<10'	10-30'	>480'	120-240'	>480'
64742-82-1	Naphta (Erdöl, hydrosulfuriert, schwer)	100	I	240-480'	240-480'	>480'	60-120'	<10'	30-60'	>480'	60-120'	>480'
64742-49-0	Naphtha (Erdöl, mit Wasserstoff behandelt, leicht)	100	I	>480'	>480'	>480'	>480'	<10'	10-30'	>480'	120-240'	>480'
1310-73-2	Natriumhydroxid	100	s	>480'	>480' c	>480'	>480'	>480'	>480'	>480'	>480'	>480'
7681-52-9	Natriumhypochlorit (aq., 14.5 %)	15	I	>480'	>480'	>480'	>480'	>480'	>480'	<10'	>480' c	>480'
98-95-3	Nitrobenzol	100	I	305' c	60-120'	>480' c	30-60'	>480'	30-60'	>480' c	10-30'	>480' c
111-87-5	Octylalkohol	100	I	>480'	>480'	>480'	240-480'	>480'	>480'	>480'	240-480'	>480'
144-62-7	Oxalic acid, saturated solution	10	I	>480'	>480'	>480'	>480'	>480'	>480'	<10'	>480'	>480'
79-21-0	Peressigsäure	39	I	120-240'	60-120'	>480'	30-60'	>480'	300' c	<10'	60-120'	>480'
108-95-2	Phenol, aqueous solution	90	I	60-120'	60-120'	>480'	10-30'	>480'	120-240'	240-480'	60-120'	>480'

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
108-90-7	Phenyl chloride	100	I	10-30'	10-30'	>480'	<10'	<10'	10-30'	>480'	<10'	>480'
7664-38-2	Phosphorsäure	85	I	>480'	>480'	>480' c	>480'	>480'	>480' c	<10' c	>480' c	>480' c
107-12-0	Propionitril	100	I	30-60'	10-30'	>480'	<10'	>480'	30-60'	>480'	30-60'	>480' c
57-55-6	Propylenglykol	100	I	>480'	>480'	>480'	>480'	>480'	>480'	120-240'	>480'	>480'
107-98-2	Propylenglykol-1-Methylether	100	I	240-480'	120-240'	>480'	13' c	>480'	60-120'	60-120'	30-60'	>480'
110-86-1	Pyridin	100	I	10-30'	10-30'	323' c	<10'	60-120'	12' c	8' c	<10'	>480' c
7697-37-2	Salpetersäure	65	I	120-240'	88' c	>480' c	10-30'	305' c	>480'	<10'	261' c	>480' c
7697-37-2	Salpetersäure	70	I	60-120'	30-60'	>480'	8' c	>480'	>480' c	<10'	60-120'	>480'
7647-01-0	Salzsäure	37	I	>480' c	>480' c	>480' c	>480'	>480'	>480' c	<10' c	>480' c	>480' c
7664-93-9	Schwefelsäure	99	I	120-240'	60-120'	120-240'	<10'	120-240'	60-120'	<10'	120-240'	>480'
7664-93-9	Schwefelsäure	50	I	>480'	>480' c	>480' c	>480'	>480'	>480'	<10'	>480' c	>480'
7664-93-9	Schwefelsäure	96	I	165' c	137' c	156' c	9' c	240-480'	142' c	<5' c	233' c	>480' c

Permeationsdurchbruchzeiten

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Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
1310-73-2	Sodium Hydroxide	50	I	>480' c	>480'	>480' c	>480' c	>480'	>480' c	<5' c	>480'	>480' c
8052-41-3	Stoddard-Lösungsmittel	100	I	>480'	240-480'	>480'	120-240'	<10'	30-60'	>480'	120-240'	>480'
100-42-5	Styren	100	I	31' c	10-30'	>480' c	8' c	10-30'	9' c	>480' c	10-30'	>480' c
64742-88-7	Terpentinersatz	100	I	>480'	>480'	>480'	>480'	10-30'	48' c	>480'	>480'	>480'
127-18-4	Tetrachlorethylen	100	I	397' c	240-480'	>480'	70' c	<10'	9' c	>480'	30-60'	>480' c
56-23-5	Tetrachlorkohlenstoff	100	I	120-240'	394' c	>480' c	30-60'	10-30'	<10'	>480'	30-60'	>480'
109-99-9	Tetrahydrofuran	100	I	10-30'	5' c	>480' c	<10'	<10'	6' c	52' c	<10'	>480' c
7719-09-7	Thionylchlorid	100	I	<10'	<10'	<6' c	<10'	60-120'	<10'	120-240'	<10'	10-30'
108-88-3	Toluol	100	I	54' c	20' c	>480' c	<5' c	<10'	7' c	>480' c	34' c	>480' c
79-01-6	Trichlorethylen	100	I	10-30'	12' c	>480' c	<2' c	<10'	5' c	>480'	<10'	>480' c
1330-78-5	Tricresylphosphat (isomerische Mixtur)	100	I	>480'	>480'	>480'	240-480'	>480'	>480'	>480'	>480'	>480'
102-71-6	Triethanamin	100	I	>480' c	>480'	>480'	>480'	>480'	>480'	>480'	>480'	240-480'

Permeationsdurchbruchzeiten

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Bei Fragen zu chemischen Tests wenden Sie sich bitte an anselltesting@ansell.com.

Material				Nitrile	Nitrile	Neoprene /Laminate film	Nitrile	Butyl	Neoprene /Natural Rubber	PVA	PVC/Nitrile	LLDPE
Dicke (mm/mil)				0.56 mm 22 mil	0.38 mm 15 mil	N.A.	N.A.	0.35 mm 14 mil	0.7 mm 27.6 mil	N.A.	N.A.	0.062 mm 2.5 mil
Marke				AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®
Produktgruppe				37-185.165 /58-008	58-001	53-002.003	39-122.124	38-001	29-500	15-554	04-004.005	02-100
CAS	Chemischer Name	%	PS									
121-44-8	Triethylamin	100	I	>480'	>480'	>480'	>480' c	120-240'	23' c	>480' c	60-120'	>480' c
7722-84-1	Wasserstoffperoxid	30	I	368' c	>480' c	>480' c	>480' c	>480' c	>480' c	<10'	>480' c	>480'
1330-20-7	Xylen (isomerische Mixtur)	100	I	98' c	35' c	>480' c	22' c	10-30'	8' c	>480' c	30-60'	>480' c
108-93-0	Zyklohexanol	100	I	>480'	>480'	>480'	240-480'	>480'	60-120'	240-480'	240-480'	>480'
108-94-1	Zyklohexanon	100	I	113' c	73' c	>480' c	27' c	>480'	39' c	>480'	30-60'	>480' c

Remarks

108-10-1,67-64-1,78-93-3

From a permeation breakthrough time perspective, Viton /Butyl gloves may offer medium to good protection against ketones. However these gloves will delaminate. Therefore caution should be taken and the practical performance of the gloves should be evaluated in the application.

76-13-1,98-88-4,999-97-3

The permeation breakthrough time of 53-002.003 gloves against these chemicals will be updated once the comprehensive testing to support the performance of these gloves is completed.

7664-41-7

The highest available concentration of ammonium hydroxide (ammonia in water) is between 35-37%. Above this, the ammonia very rapidly comes out of solution as a gas and so is not storable. We have added the highest concentration we have test data for this chemical (35%). This is known as a concentrated solution and it is possible a 50% solution is actually a 17-18% solution of ammonium hydroxide (50% of a 35% solution).

Because this chemicals permeation profile changes largely on concentration, we have also added lower concentrations of this chemical. If this is not correct or specialist handling conditions are used, please contact a member of the Chemical Guardian team, who will be happy to assess this further.

Acetone

What is Acetone?

Acetone, or 2- propanone, is the simplest and smallest ketone that can be found naturally in the environment and can also be produced by industries. It is a colorless, highly volatile, and flammable liquid with a characteristic sweet, mint-like odor.

Pictogram



Signal word

Danger

What are the associated health risks of exposure to Acetone?

Acetone can affect you when inhaled and may be absorbed through the skin. Short term exposure can irritate the eyes, respiratory tract, and skin. Exposure to high concentrations can cause dizziness, lightheadedness, and unconsciousness. Repeated skin exposure to acetone can cause dryness, irritation, and skin cracking with redness. The effects of long-term acetone exposure have been mostly studied in animals, and include kidney, liver, and nerve damage, birth defects and male infertility

Where is Acetone used?

Acetone is used in the manufacture of many chemicals (e.g., acetic acid, chloroform) to produce plastics, fibers, paints, coatings, drugs and cleaning products. Acetone finds also wide applications in various industries as an organic solvent. Its complete miscibility (can mix at any concentration) with water and its miscibility with numerous other solvents permits its use with them, thereby increasing their individual efficiency. Low-grade acetone is commonly found in academic laboratory settings as a

glassware rinsing agent for removing residue and other contaminants. Acetone is also found commercially as the primary component in cleaning agents such as nail polish as well as superglue and removers. Because it is an excellent solvent, acetone *wipes* remove many substances other methods struggle with, therefore are suitable for *aerospace*, automotive and other *industrial* applications.

Role of PPE

Personal protective equipment must always be the last line of protection and wherever possible, proper safe handling practices must be used to limit or eliminate the amount of direct contact with hazardous chemicals.

A good permeation barrier to a chemical does not guarantee safety, therefore careful selection must be made when choosing appropriate PPE. The PPE can only be selected after a full risk assessment is conducted by Health and Safety Manager to identify all hazards in the workplace.

What kind of protection is needed for Acetone?

Since acetone is a polar molecule, non-polar gloves such as butyl (e.g., AlphaTec® 38-514, 38-520 and 38-560) provide good protection against pure acetone. AlphaTec® 02-100 also protects against it, however it cannot provide mechanical protection. The AlphaTec® 4000 material is suggested for body protection if a good permeation barrier is needed but the AlphaTec® 3000 material also offers a short term permeation barrier. For those applications, where the exposure is very limited (e.g., acetone wipes where acetone evaporates rapidly), Microflex® 93-260 and NPG-888 could be used for splash protection and dexterity, and penetration barriers such as the AlphaTec® 2000 may be considered. Thick natural latex gloves could also be used for splash protection, but not for prolonged contact.

Please contact AnsellGuardian® Chemical team if more information is desired.

Which gloves can I use to protect against liquefied gases?

Protection against gases

Gases are usually inert and will evaporate quickly into the air. Therefore, a glove is not a relevant way of protection in itself in many of cases. However, for some of the most aggressive gases, a complete protection suit would have to be considered to protect the person from possible toxic fumes.

Protection against liquefied gases

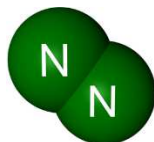
A gas can become a liquid when exposed at very low temperatures or when stored into pressurized bottles.



Liquid Nitrogen

Examples:

1. Liquid nitrogen is an inert gas which is often used and stored in flasks in its liquid form. However, to obtain liquid nitrogen, the gas has to be cooled at temperatures around -196°C .



The risk of contact with liquid nitrogen is not the chemical itself, but the extreme cold – this can cause severe cold burns to the skin. First of all, no glove material will withstand immersion in liquid nitrogen. The coating of any glove will crack and break, leaving the hands unexposed to the extreme cold.

2. Liquid ammonia is a refrigerant – when it is released (depressurized), it reverts back to the gas and absorbs heat from anything in the vicinity, including plumbing and people, chilling them towards its boiling point of 28 degrees below zero Fahrenheit (-33.5°C). Any anhydrous ammonia released into the environment will therefore emerge as a very cold gas. Therefore the ideal glove for handling anhydrous ammonia should protect against cold gases.

3. Liquefied Natural Gas is commonly shipped as a liquefied gas under pressure. When the pressure is released, it will boil, and it has a reported boiling point of 160 degrees below zero Fahrenheit (-107°C). Any propane released into the environment will therefore emerge as an extremely cold gas.

The risk of contact with liquefied gases does not come from the chemicals themselves, but from the extreme cold – this can cause severe cold burns to the skin. Therefore, a cold protective glove has to be considered, since a “normal” non-cold protective glove will not withstand immersion in liquefied gases (indeed, the coating of this glove will crack and break, leaving the hands unexposed to the extreme cold).

Which gloves can I use to protect against liquefied gases?

Generally, we recommend the following cold protective gloves for splashes of liquefied gases and for handling recipients containing the liquid:

Scorpio® Hi Lo	09-022
Scorpio®	19-024, 19-026
Polar Grip®	23-700

Please note that the above gloves are approved for EN511 (gloves to protect against cold). This European Standard contains a test at –50°C and the glove passes when the coating will not crack at that temperature. Contact temperature for the above references is recommended down to –25/–30°C only, and lower temperatures are not tested.

For any application which requires direct contact or with a higher risk level, we recommend the usage of cryogenic gloves. These are gloves specifically designed for contact cold at temperatures of –120°C and below.

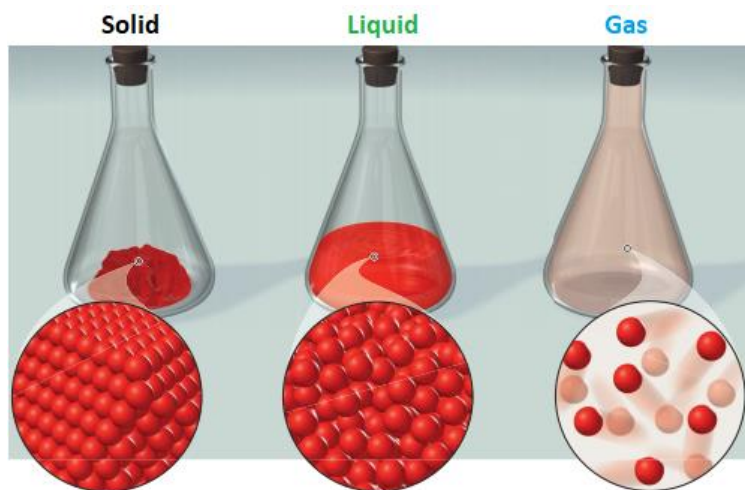
Recommendations made in this note are based on extrapolations from laboratory test results and information regarding the composition of chemicals and may not adequately represent specific conditions of end use. Synergistic effects of mixing chemicals have not been accounted for. For these reasons, and because Ansell has no detailed knowledge of or control over the conditions of end use, any recommendation must be advisory only and Ansell fully disclaims any liability including warranties related to any statement contained herein.

Chemical gases

What are gases and their characteristics ?

Gasses are one of the three fundamental states of matter, at regular room temperature and atmospheric pressure, the others being liquids and solids. The biggest and most noticeable difference between these states of matter is *the shape and volume*.

1. Gasses have **no fixed shape or volume**, so they will completely fill whatever container they are in. This is because the atoms are spaced much further apart in gasses than liquids or solids, as shown in the picture.



2. Gases are **compressible**. They are commonly stored in compressed cylinders until needed.
3. Gases can be **colourless**

4. Some gasses are **odourless**, and others have **distinctive odours** though the odour limit can be above or below the toxic limit.
5. Gases **form mixtures**. They can be mixed with other matters like solid or liquid forming aerosols.

Information on the physical state of a chemical can be found in **Section 9 of (M)SDS** (Material) Safety Data Sheet. Also, note the boiling point (b.p.) which is the temperature at which a chemical can change its state from a liquid to a gas. For example, hydrogen fluoride (HF) has a b.p of 19.5 °C (67.1 °F).

Where are gases used?

Gases are used in many kinds of applications such as medical, industrial and/or transport.

What are the associated health risks of exposure to gases?

There are very few common hazards associated with gasses because they will all chemically behave differently. However, there are some key factors to consider:

1. Is the gas toxic or not? Even if a gas is not toxic, a gastight material may still need to be considered depending on how it is handled. If it is toxic or corrosive on skin contact, a gastight material must always be considered.
2. Is the gas under standard conditions, or is it pressurized, or liquified? Then, an appropriate thermal protecting glove must be considered.
3. Is it diluted in water or a solution? Then, a material that can protect against such solution must be used.

Chemical gases

Further examples to elaborate:

1) **Air** is composed of different gases: oxygen, nitrogen, carbon dioxide, etc. Air is not toxic for human beings (they absolutely need oxygen to live), meaning that **no PPE** should be used in this case.

2) **Mustard gas** is classified as a chemical warfare agent and used in military applications. It is a blistering agent and toxic by inhalation. In this precise case, a glove does not provide an appropriate mean of protection when it is used alone. Instead, a full body protection suit with an isolating breathing device on it should be used to protect the user from this chemical.

3) **Hydrogen fluoride (HF)** is a very toxic chemical (see Hydrofluoric acid/Hydrogen fluoride FAQ). It can induce gangrene and even death. When pure (100% concentration), HF is a gas. If gaseous HF is used, then a whole suit of protection with an isolating breathing device on it should be used to completely avoid any contact and inhalation of this toxic chemical.

4) **Propane** corresponds to a gaseous compound often stored in pressurized bottles. This condition of storage, which increases the pressure, transforms propane into a liquid, which is called “liquefied gas”. When this liquefied gas comes out of the pressurized bottles, the main risk will be the possible **cold burns** produced to the end-user’s hands.

5) **Chlorine** is a gas in under normal use conditions – therefore, a glove doesn’t represent a relevant way of protection against it when used alone. However, in the day-to-day life, many people use the term “chlorine” as a very generic word to describe the liquid solution usually used to disinfect swimming-pools.

What kind of hand protection is needed for gases?

Gloves alone do not provide appropriate protection against a pure gaseous compound. A glove can’t prevent complete contact with the gas or protect against gas inhalation.

What kind of body protection is needed using gases?

For body protection materials, Ansell offers permeation data and estimates against gasses. AlphaTec® 4000 and up as well as AlphaTec® Light are usually tested against gasses. Although, AlphaTec® 3000 material and below or AlphaTec® Splash materials are not tested typically against gasses, there are instances when limited amounts of data are included when appropriate.

Our data is based on the fabric and not the model selected, therefore a fabric that may have excellent permeation times may not be suitable for a certain application. The decision for what PPE is required should be done by the onsite Health and Safety team with a good knowledge of conditions and a full health and safety report.

Only **Type 1** gastight suits are pressure tested to ensure they do not let gasses pass through the suit and we would always suggest considering one where protection from gasses is needed. Our gastight suits include the **AlphaTec® 6000, Light, Super, VPS, VPS Flash** and **EVO**.

Other models such as **PAPR** and **AIRline** may limit the amount of gas reaching the user. These models use positive pressure inside the suit which may stop gasses entering. Another model, namely **APOLLO**, which is an encapsulating designed model looking like a gastight, may also limit the amount of gasses

Chemical gases

reaching the user. However, it may not prevent all gasses reaching the user as this model is not designed as gastight suit, does not undergo pressure testing and is not certified as gastight.

Traditional model **coveralls** may **not be suitable** for protection from gasses. This is because gasses can enter the suit through neck, hand and foot openings and through the non-gastight zipper. They may be considered for small amounts of (non-hazardous) vapors as this may reduce the amounts of gas reaching the user but not sufficiently for large amounts of vapors and gasses. The decision to use a non-gastight suit for protection against gasses and vapors must be thoroughly considered.

Hydrogen fluoride/Hydrofluoric acid

What is Hydrofluoric acid/Hydrogen Fluoride?

Hydrogen fluoride (CAS# 7664-39-3) is an extremely dangerous, corrosive chemical and a contact poison, making it extremely hazardous even at low concentrations. It can exist as a colorless gas or as a fuming liquid, or it can be dissolved in water. When it is dissolved in water, it is called hydrofluoric acid.

What are the associated health risks of exposure to Hydrofluoric acid/Hydrogen Fluoride?

Hydrofluoric acid is readily absorbed by human tissues. However, it often shows no immediate noticeable effects because it reacts with the nerve endings at the point of contact. After this chemical has entered the tissue, it can enter the bloodstream and bones where it reacts with the calcium causing, among other things, **bone damage**, **gangrene**, **severe burns** and **death**.



In what forms can Hydrofluoric/Hydrogen Fluoride be found?

Hydrogen Fluoride Pure form; A gas at room temperature but it is often handled below 19.5 °C (67 °F); it is a liquid below this point. A colourless liquid or gas with an irritating odour.

Hydrofluoric acid Hydrogen Fluoride dissolved in water, can be up to 99% Hydrogen fluoride. A colourless liquid that at lower concentrations may be indistinguishable from water.

Where is Hydrofluoric acid/Hydrogen Fluoride used?

Hydrofluoric acid/Hydrogen fluoride is widely used in different industrial applications. It is utilized in different concentrations to produce refrigerants, herbicides, pharmaceuticals, gasoline, stainless steel kitchen products, aluminum, plastics, and electrical components.

In laboratories applications and industrial settings, hydrofluoric acid can be used for etching glass and enamel, removing rust, and cleaning brass and crystal. It also is used in manufacturing silicon semiconductor chips and as a catalyst in oil refineries to make high-octane gasoline as well as power nuclear reactors.

Role of PPE

Personal protective equipment must always be a last line of protection and wherever possible, proper safe handling practices must be used to limit or eliminate the amount of direct contact with hazardous chemicals.

A good permeation barrier to a chemical does not guarantee safety and careful selection must be made when choosing appropriate safety clothing. Appropriate PPE can only be selected after a full risk assessment to identify the hazards and decide what appropriate type of clothing that has been deemed necessary.

What kind of hand protection is needed for Hydrofluoric acid?

Hydrogen fluoride/Hydrofluoric acid

Depending on the concentration, an appropriate Hand protection can be used. Generally, the thick **butyl/Viotn, butyl** gloves provide good level of protection whereas **LLDPE** materials provide medium protection level. Even though the very low concentration of hydrofluoric acid can be **fatal**, other hand protection gloves materials could be considered when the end-user handles different concentrations.

What kind of body protection is needed using Hydrogen fluoride?

Barrier Information

The below suits may not be appropriate for all situations and may or may not provide a full permeation barrier. For a full list of breakthrough times please request a Chemical Guardian report.

Hydrogen Fluoride, Gas

As a gaseous hazard, a gas-tight suit may be considered, this would include the AlphaTec® 6000 and the AlphaTec® Super and up.

Under certain situations a risk assessment may find a gas-tight suit is not necessary, in which case the AlphaTec® 4000 and 5000 have both been tested against this gas, with the AlphaTec® 5000 having particularly good permeation times.

Hydrogen Fluoride, Liquid

Hydrogen Fluoride is a liquid when below 19.5 °C (67 °F), however it is often handled much colder than this. As our body protection range is not designed to offer any thermal protection, additional thermal protective clothing may have to be worn under the garment to prevent frostbite.

Several materials in our body protection range have been tested against Hydrogen fluoride liquid. The AlphaTec® 4000 may be suitable for lower levels of exposure while the AlphaTec® 5000 shows a good permeation barrier. For gas-tight suit options the AlphaTec® 6000 would be expected to offer a medium to good permeation barrier. AlphaTec® VPS, Flash and EVO would all be expected to show medium to good permeation barriers.

Hydrofluoric acid

The barrier offered by Ansell body protection suits will vary depending on the concentration of the Hydrofluoric acid handled. For general barriers, we would expect the AlphaTec® 3000 to show a barrier to concentrations of Hydrofluoric acid below 50 % and a medium barrier up to 75 %. We would expect the AlphaTec® 4000 to show a good barrier to concentrations of Hydrofluoric acid up to 75% and a medium barrier above this. We would expect the AlphaTec® 5000 to offer a good barrier at any concentration of Hydrofluoric acid.

In gas-tight suits category, we would expect a good barrier from the AlphaTec® 6000 at any concentration of Hydrofluoric acid and a good barrier from the AlphaTec® VPS, FLASH and EVO.

Although most of our non-gastight chemical protective suits offer at least some protection to this chemical, the AlphaTec® 4000 and 5000 may be considered for their greater mechanical strength.

Please contact Ansell Guardian Chemical Technical team if more information is desired.

What gloves work with Phenol?

Phenol/Physical Form:

Phenol is a solid at room temperature. However, pure liquid phenol (or molten phenol) exists from around 40.5 °C and above. Solid phenol is Colorless to light-pink, crystalline solid with a sweet, acrid odor. Phenol solution, [aqueous] is a white crystalline mass dissolved in an aqueous solution. Solution may be colorless to slightly pink in color with a distinctive phenol odor; sharp burning taste. Phenol, liquid is a colorless liquid when pure, otherwise pink or red.

Risks:

Phenol is a Mutagen. It is very toxic; Ingestion of 1 gm is lethal to humans. Lethal amounts may be absorbed through skin. Due to this hazardous nature, phenol is not allowed to test in every lab above the 10% concentration. The labs must be qualified to test this chemical above 10%.

Gloves Recommendations:

Room temperature:

100% Solid phenol at room temperature:

All gloves will work including disposables, but keep in mind due to the hazardous nature always be mindful about disposables (check for pinholes in the gloves).

10% phenol: at room temperature

At this concentration and room temperature we recommend the following gloves:

Solvex® 37-900, 37-695 or 37-186, AlphaTec® 58-335,58-435,58-330,58-530,58-535, Barrier® 02-100 or any of the neoprene gloves (Disposal gloves can also be used, but we recommend these for splash protection).*

85% phenol at room temperature:

At this concentration and room temperature we recommend the following gloves:

Barrier® 02-100, Neoprene® 29-865, Scorpio® 08-352 and 08-354, Bicolour 87-900, Chemi-Pro® 87-224 and Neotop® 29-500.*

At elevated temperatures:

Liquefied Phenol at 45C

At this temperature Butyl gloves *Chemtek™ 38-514 and Viton/Butyl gloves Chemtek™ 38-628* can be used for full protection.

30% liquefied phenol at 70C

At this temperature, liquefied phenol is very hazardous and we can use thick *Viton/Butyl gloves Chemtek™ 38-628*. This also doesn't provide full protection for longer times, this needs to be changed as soon as you see any hint of degradation.

Scorpio® 08-354, Solvex® 37-675, PVA® 15-554 and Barrier® 02-100 can be used for splash protection and need to be changed as soon as there is contact of chemical.

50% liquefied phenol at 70C

At this temperature, liquefied phenol is very hazardous and we can use thick *Viton/Butyl gloves Chemtek™ 38-628*. This also doesn't provide full protection for longer times, this needs to be changed as soon as you see any hint of degradation.

Chemtek™ 38-514 can be used for splash protection and needs to be changed as soon as there is contact of chemical.

Liquefied phenol at 70C

At this temperature, liquefied phenol is very hazardous and we can use thick *Viton/Butyl gloves Chemtek™ 38-628*. This also doesn't provide full protection for longer times, this needs to be changed as soon as you see any hint of degradation.

What gloves work with Phenol?

The following gloves have been tested at third party labs as per both ASTM F739 and EN 374 standard:

	Barrier®		PVA®		Chemtek™		Chemtek™		Solvex®		Scorpio®		Duzmor®		Microflex®	
	02-100		15-554		38-514		38-628		37-675		08-354		87-600		93-260	
Permeation Breakthrough time (min)	ASTM	EN	ASTM	EN	ASTM	EN	ASTM	EN	ASTM	EN	ASTM	EN	ASTM	EN	ASTM	EN
100% phenol at 70C	<6	<6			15	25	101	170								
50% phenol at 70C	<6	<6			22	38	77	173			15	21				
30% phenol at 70C	8	19			24	37	77	295	<6	<6	14	23	<6	<6	<6	<6
100% phenol at 45C	44	55	44	51	>480	>480	>480	>480	12	13	45	72	<6	7	<6	<6

Information provided may comprise of experimental data, or estimations based on extrapolations from experimental data. This information is intended to enable the Health and Safety professional at your organization to be able to make more informed decisions about which Ansell products will offer the greatest protection in the intended circumstances, and assist with carrying out a risk assessment for your organization.

We wish to highlight that the permeation times do not equate to safe wear time. Safe wear time may vary depending on whether the PPE is donned correctly, the temperature of the surroundings, the toxicity of the chemical, and a number of other factors. It is the responsibility of your organization's Health and Safety professional to undertake a risk assessment before choosing the appropriate PPE for the task at hand. If you would like to discuss any aspect in more detail, please contact us.

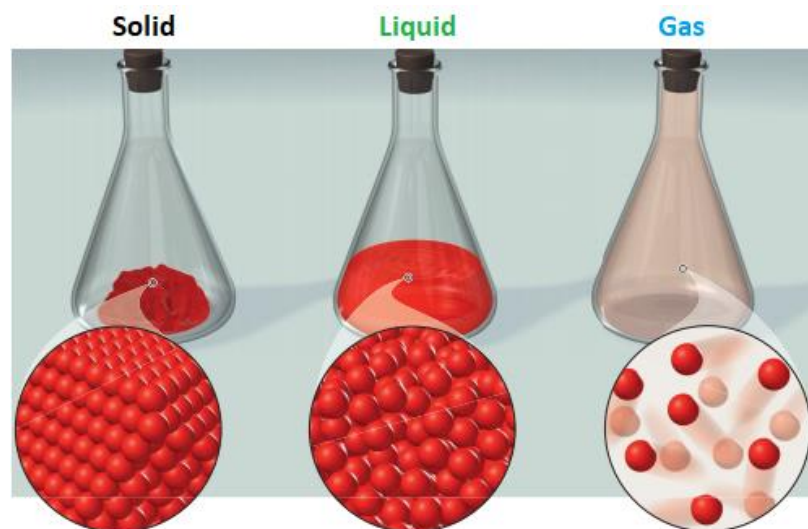
Estimations of the barrier properties of gloves and PPE are based on extrapolations from laboratory test results and information regarding the composition of the chemicals. Synergistic effects of mixing chemicals have not been accounted for. Estimations are subject to change if new testing is carried out providing better grounds for extrapolations. For these reasons, any information provided must be advisory only and Ansell fully disclaims any liability including warranties related to any statement contained herein.

Chemical solids

What are solid chemicals and their characteristics?

Solids are one of the three fundamental states of matter possible at standard room temperature and pressure, the others being liquids and gasses. The biggest and most noticeable difference between these states of matter is the shape and volume

1. Solids have a **fixed shape and volume** making their forms difficult to change.



2. Solids **cannot** be easily **compressed**
3. Solids have different classes such as metals, minerals, ceramics, glass ceramics, or advanced materials like nanoparticles and biomaterials.
4. Solids can come as powders, crystals, pellets, shards, dust, or other particles.

Typically, **section 9** of an (M)SDS provides information on the **physical state** of the chemical at room temperature (usually 23 °C /73 °F). This Section can also indicate the melting point of the chemical. Some chemicals melt at extremely high temperatures (i.e. sodium chloride, commonly known as salt, melts at 801°C(1474°F) whereas other chemicals melt just above room temperature (e.g. gallium melts at just 30 °C (86 °F).

Where are solid chemicals used?

Solids are commonly used in many industries and can't be narrowed down to a set list of uses. Just looking around there are likely hundreds of uses for solids in any given location. Some common general uses (but by no means comprehensive) of solids are for transporting chemicals which are then diluted for use, or for applications where physical properties are needed rather than chemical e.g. insulation, support, electrical insulation etc. or a variety of other materials e.g. polymers, ceramics, glass, nanomaterials etc.

What are the associated health risks of exposure to solid chemicals?

This depends on the chemical itself, each kind of chemical substance having different and possible health risks. For instance, **Quartz dust** can cause Silicosis, lung cancer and pulmonary. Another example is **Nanoparticles** such as **Titanium Oxide** (TiO₂) which is produced and used in varying particle sizes. When the particle size is very small (e.g. **Nanoparticles**), low doses of TiO₂ can affect mucosa, the brain, the heart and other internal organs. This can lead to an increased risk of developing diseases or tumors.

What kind of hand protection is needed for Solid chemicals?

Chemical solids

Majority of dry solid materials, either at or near room temperature, can be handled by Ansell chemical-resistant gloves. However, keep in mind the following:

1. There are some solid chemicals that can eventually permeate into the glove polymer and degrade its physical properties (i.e. Nanoparticles). Even though the outside of the glove is thoroughly cleaned, solid material may remain outside or inside of the glove. Unfortunately, there is no practical way to stop the diffusion of solid chemicals by cleaning the surface of barrier material.
2. If the solid is in fine powder form, one may need to have some type of facial protection (e.g., from inhalation) besides hand protection
3. If the solid is chemically reactive (e.g., reacts with oxygen or moisture from air), appropriate precautions must be taken during its handling.
4. If solid chemicals are mixed with other chemicals that are either in liquid or solid form, it is important to remember that synergistic effects of mixture may impact glove performance. While a glove offers a good protection against a specific single chemical, the same glove may perform poorly when that chemical is mixed with another one.

If solids cannot permeate, then what is the problem?

Although solids are not usually a permeation hazard, they can penetrate protective clothing through holes, zips, seams or other openings in the materials. Solids can be toxic, corrosive and harmful. For example, sodium hydroxide or phosphoric acid, which are both solids when pure. Against the fabrics, one would almost always expect a full permeation barrier against solids. This is because, as stated earlier, the molecules in solids are not free to

permeate (they are fixed in a rigid structure). Exceptions are when the solids sublime (turn straight from a solid to a gas) or release a lot of vapors, in which case it is the gas that is permeating and not technically the solid. Some solids can take up moisture from the atmosphere to become more liquid and then cause a permeation hazard (e.g. Potassium hydroxide).

Unlike liquids or gasses, the major factor when trying to protect from solids is the particle size rather than what the chemical is. Solids will behave similarly when **penetrating** a material. However, their particle size will determine what size hole or imperfection they can use to bypass the protective barrier. Remember, the difference between **penetration** and **permeation** is that **penetration** is the chemical avoiding the barrier by moving through a hole, opening or imperfection. This happens on a relatively large scale (usually visual). **Permeation** is where the chemical can pass through the barrier at a molecular level and doesn't need there to be any holes. It is based on the chemical properties of the chemicals and the barrier.

What kind of body protection is needed for solid chemicals?

Many of Ansell suits are EN ISO 13982-1 "type 5" certified suits. This means they have undergone and passed tests to measure how much solid dust particulates can penetrate a whole suit while worn. Any of our suits that have been certified as EN Type 5 will possess the following symbol.

