ACTIVEAIR AUTOFLOW SUIT
CHEMPROTEX™ 300

RESPIREX™

Description

The ActiveAir AutoFlow suit is a single-use **Type 3** (liquid-tight), one-piece suit with a **reusable**, **removable air system** that provides the highest level of protection against particulate and liquid chemical hazards.

Manufactured from our high-performance **Chemprotex™ 300** chemical barrier fabric, the suit is designed for use with breathable air supplied from an external compressed air source providing positive pressure

A range of foot and glove options are available allowing the suit to be tailored to the requirements of the chosen application.

Applications

Pharma-ceutical

Chemical Industry

Certification

TYPE 3 | EN 14605:2005+A1:2009
Liquid-Tight Chemical Protective Clothing

TYPE 4 | EN 14605:2005+A1:2009
Spray-Tight Chemical Protective Clothing

TYPE 5 | EN 13982-1:2004+A1:2010
Particulate Protective Clothing

TYPE 6 | EN 13034:2005+A1:2009
Limited Spray-Tight Chemical Protective Clothing

EN 1149-5:2018
Antistatic Protective Clothing

CLASS 4A | EN 14594:2018
Respiratory protective devices

Regulation (EU) 2016/425
Personal Protective Equipment

Material Performance

EN 14126:2003
Protective clothing against infective agents

ATEX Zones

Tested in accordance with EN IEC 60079-32-2:2015 and CEN/CLC/TR 16832:2015 for use in the following ATEX environments:

Dust Ex atmospheres: **ZONES 20, 21 & 22**
Gas Ex atmospheres: **ZONES 0, 1 & 2**

Assuming connected airline is earthed
Suits with a push-fit cuff are not suitable for ATEX environments

Product Documentation

The Declaration of Conformity and user instructions can all be downloaded from the product page on the Respirex website, links are in the downloads tab.

There are also videos on donning procedure and on how to use the Permasure app.

: www.respirex.com : +44 (0)1737 778600

Key Features

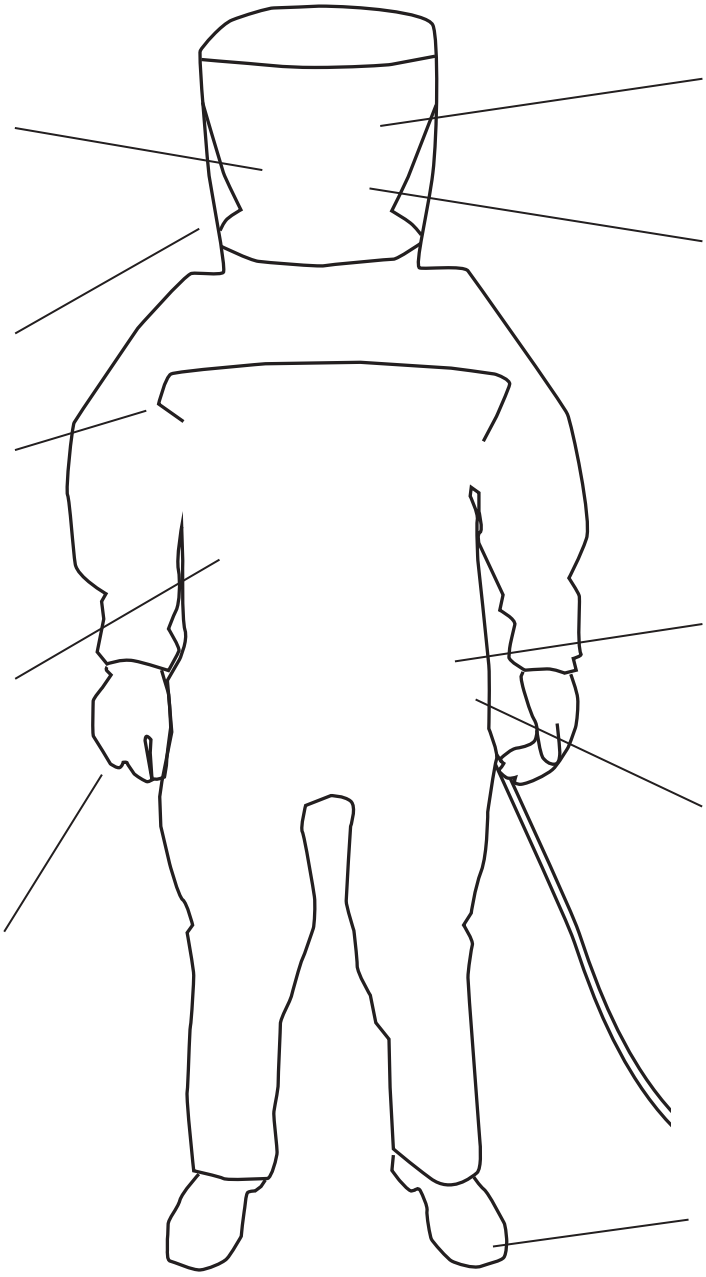
0.75mm PVC **visor** for clear undistorted vision

Breathing air and cooling airflow; air is delivered into the hood and passes through a permeable neck seal to the body

Front entry design with zip across chest and two protective cover flaps with double sided tape

Four rear mounted **exhalation valves** to maintain a comfortable working pressure inside the suit

Choice of **Kemblok™ chemical glove** welded to the sleeve, **Push fit cuff** for customers glove choice or attached **anti-static butyl gloves** (see below).



Noise level within the suit hood **<80dB**

Airflow: **180-400 ltr/min**

Ten year shelf-life

Internal belt loops for use with a waist mounted **AutoFlow 2-9 regulator** and belt, which is easily removable for re-use

Short **air-line 'trunk'** in the rear of the suit to feed through the air supply hose - this is then taped or cable tied tight around the hose

Choice of **Sock feet** for use with external boots or **Integral overshoe** for shoes worn inside the suit (see below)

Glove/Sleeve Options

Kemblok™ Glove

A permanently attached Kemblok™ chemical barrier glove with conductive strip on the palm and an elasticated outer sleeve, designed to be used with outer antistatic gloves providing mechanical protection

Attached Butyl Glove

A permanently attached antistatic butyl glove

Push-fit Cuff

A liquid-tight cuff system that allows appropriate gloves to be quickly and easily fitted to the suit. **Note:** Suits with push-fit cuffs are not suitable for ATEX environments.

Foot Options

Antistatic Sock Foot

A sock style foot with an outer splash-guard leg designed to be used with boots worn on the outside of the suit (e.g. Hazmax chemical safety boots)

Antistatic Integral Overshoe

A larger boot style foot with an elasticated ankle and slip resistant sole, designed to be used with shoes or boots worn inside the suit.

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Accessories

AutoFlow 2-9 Regulator

A belt mounted breathing air regulator for use with the ActiveAir AutoFlow Range of suits and hoods. The AutoFlow 2-9 regulator operates from a working inlet pressure between 2 and 9 bar (29 to 130 psi) and maintains a consistent, comfortable airflow into the suit or hood, while minimising noise. The regulator includes a low-flow warning whistle, to alert the wearer if the inlet pressure drops below the Manufacturers Minimum Design Flow (MMDF) and is mounted to removeable decontaminatable belt.

The air flowing into the garment must conform to EN 12021:2014 Annex A. In the event that partial contamination may exist in the factory ring main from which the suit draws its air supply, a Respirex in-line filter unit should be fitted to the air system; this will prevent the ingression of contamination down to 5 microns in size from entering the garment.

HAZMAX™ ESD Boots

A chemically-protective electrostatically dissipative safety boot with an integral steel toe cap and mid sole, vulcanized rubber sole for superior slip resistance and kick off lug for hands free removal.

Solestar ESD Boots

A high performance PVC Electro-Static Discharge safety boot, conforming to the latest European standards it incorporates a steel toecap and midsole together with an oil resistant non-marking sole.

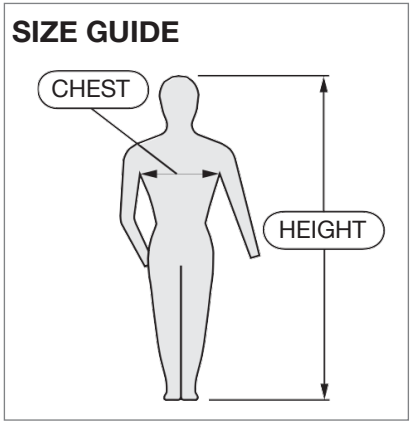
Part Numbers

	Small	Medium	Large	X-Large	XX-Large
Suits with Integral overshoe for shoes worn inside the suit					
Kemblok Glove	AFS0004/132S	AFS0004/132M	AFS0004/132L	AFS0004/132XL	AFS0004/132XXL
Butyl Glove	AFS0005/132S	AFS0005/132M	AFS0005/132L	AFS0005/132XL	AFS0005/132XXL
Push-Fit Cuff	AFS0006/132S	AFS0006/132M	AFS0006/132L	AFS0006/132XL	AFS0006/132XXL
Suits with Sock foot and outer leg for boots worn outside the suit					
Kemblok Glove	**AFS0001/132S**	**AFS0001/132M**	**AFS0001/132L**	**AFS0001/132XL**	**AFS0001/132XXL**
Butyl Glove	AFS0002/132S	AFS0002/132M	AFS0002/132L	AFS0002/132XL	AFS0002/132XXL
Push-Fit Cuff	AFS0003/132S	AFS0003/132M	AFS0003/132L	AFS0003/132XL	AFS0003/132XXL

Models shown in bold are stock options, other models are avialble to special order on request.

Sizing Chart

Size	Chest (cm)	Height (cm)
Small	88-96	164-170
Medium	96-104	170-176
Large	104-112	176-182
X-Large	112-124	182-188
XX-Large	124-136	188-194



Specifications

ActiveAir Autoflow Suit	Suit	AF 2-9 Regulator
Pack Size (max)	8x58x36 cm	TBC
Pack Weight (max)	3.6 kg	TBC
Carton Qty	10	1
Outer Carton Size	84x62x40 cm	TBC
Outer Carton Weight (max)	36 kg	TBC
Commodity Code	39262000	TBC

Specifications are based on an XL sized suit without optional accessories and are for guidance only

Material Properties

Property	Test Method	Property value of Chemprotex™ 300	Class
Abrasion Resistance	EN ISO 12974-2	2,000 cycles	6
Flex Cracking Resistance (visual assessment)	EN ISO 7854:1997 Method B	1,000 cycles - Pass 2,500 cycles - Fail	1
Puncture Resistance	EN 863:1995	13.6 Newtons	2
Trapezoidal Tear Resistance	EN ISO 9073-4:1997	Length 76.3 Newtons, Width 53.1 Newtons	3
Tensile strength	EN ISO 13934-1:1999	Length 159.1 Newtons, Width 92.5 Newtons	2
Resistance to ignition	EN 13274-4:2001 Method 3 (single burner test)	No part ignited or continued to burn on removal from the flame	Pass
Resistance to blocking	EN 25978:1993	Slight blocking	2
Seam Strength	EN ISO 13935-2:1999	166.8 Newtons	4
Surface resistance**	EN 1149-1:2006	Face $<3.6 \times 10^8$ Ω, Reverse $<3.4 \times 10^7$ Ω	-

* Chemprotex™ 300 meets the resistance to ignition requirements of EN 14325:2018 but is not flame resistant. PPE manufactured from Chemprotex™ 300 should not be worn in potentially flammable or explosive environments.

** Anti-static properties are not claimed for all PPE manufactured from Chemprotex™ 300. Please refer to the specific user instructions supplied with each product for detailed performance information. Regardless of the anti-static properties of any suit materials, it is the responsibility of the end-user to ensure that their working practices (e.g. grounding) achieve dissipation of any static charges which may build up on the suit during use.

Resistance to Penetration by Infective Agents

The material has passed the requirements of EN14126:2003 for protective clothing against infective agents. It is therefore suitable to provide protection against blood, blood-borne pathogens, body fluids, biologically contaminated aerosols and both wet and dry microbial penetration.

Requirement	Test Method	Level of Performance	EN14126:2003 Class
Resistance to wet microbial penetration	ISO 22610:2006	> 75 min	6
Resistance to penetration by blood and body fluids using synthetic blood	ISO 16603:2004	Pass	N/A
Resistance to penetration by blood-borne pathogens using bacteriophage Phi-X174	ISO 16604:2004	20 kPa	6
Resistance to penetration by biologically contaminated aerosols	ISO/DIS 22611:2003	Log > 5	3
Resistance to dry microbial penetration	ISO 22612:2005	<1 Log cfu	3

Chemical Warfare Agent Protection

Agent	Breakthrough time (hours)	Temperature (°C)
Mustard agent (HD)	>48	37
Sarin (GB)	>48	37
Soman (GD)	>48	37
VX	>48	37

The Chemprotex™ 300 material has been tested for resistance to permeation by chemical warfare agents in accordance with FINABEL O.7.C methods at the respected TNO laboratories. Both the material and seams were found to offer an extremely high level of protection against the following agents:

Chemical Permeation & Permasure®

The ActiveAir Autoflow suit is compatible with the **Permasure** toxicity modelling app, available for Android and IOS devices. Permasure calculates safe working times for a database of over 4,000 common industrial and toxic chemicals, basing its calculations of the actual working conditions at the time. For full details visit **www.respirex.com/permasure**

All chemical permeation tests are carried out under laboratory conditions by independent accredited laboratories in accordance with EN 374-3 unless otherwise stated.

Chemical Name	State	CAS Number	Actual (min.)	ASTM (min.)	EN374-3 (min.)	EN Class	SSPR µg/(min.cm²)	MDPR µg/(min.cm²)	Observation
acetaldehyde	L	75-07-0	>480	>480	>480	6	<0.05	0.05	No degradation
acetic acid (30%)	L	64-19-7	>480	>480	>480	6	<0.001	0.001	No degradation
acetic acid (glacial)	L	64-19-7	>480	>480	>480	6	<0.001	0.001	No degradation
acetic anhydride	L	108-24-7	>480	>480	>480	6	<0.001	0.001	No degradation
acetone	L	67-64-1	>480	>480	>480	6	<0.02	0.02	No degradation
acetonitrile	L	75-05-8	>480	>480	>480	6	<0.05	0.05	No degradation
acetophenone	L	98-86-2	>480	>480	>480	6	<0.05	0.05	No degradation
acrylamide (50%)	L	79-06-1	>480	>480	>480	6	<0.10	0.10	No degradation
acrylic acid	L	79-10-7	>480	>480	>480	6	<0.005	0.005	Discolouration
acrylonitrile	L	107-13-1	>480	>480	>480	6	<0.05	0.05	No degradation
allyl alcohol	L	107-18-6	>480	>480	>480	6	<0.05	0.05	No degradation
ammonia	G	7664-41-7	32	49	>480	6	0.17	0.005	No degradation
ammonium hydroxide (35% NH_3 in water)	L	1336-21-6	>480	>480	>480	6	<0.001	0.001	No degradation
amyl acetate-n	L	628-63-7	>480	>480	>480	6	<0.02	0.02	No degradation
aniline	L	62-53-3	>480	>480	>480	6	<0.05	0.05	No degradation
aviation fuel	L	-	>480	>480	>480	6	<0.05	0.05	No degradation
benzene	L	71-43-2	28	35	58	2	3.0	0.05	No degradation
benzonitrile	L	100-47-0	>480	>480	>480	6	<0.05	0.05	No degradation
benzoyl chloride	L	98-88-4	>480	>480	>480	6	<0.05	0.05	No degradation
benzyl alcohol	L	100-51-6	>480	>480	>480	6	<0.05	0.05	No degradation
benzyl chloride	L	100-44-7	>480	>480	>480	6	<0.05	0.05	No degradation
bromine	L	7726-95-6	imm	7	8	0	high	0.001	Discolouration
butadiene 1,3	G	106-99-0	>480	>480	>480	6	<0.02	0.02	No degradation
butane	G	106-97-8	>480	>480	>480	6	<0.05	0.05	No degradation
butanol n-	L	71-36-3	>480	>480	>480	6	<0.05	0.05	No degradation
Butyl aldehyde	L	123-72-8	>480	>480	>480	6	<0.05	0.05	No degradation
Butyl ether n-	L	142-96-1	>480	>480	>480	6	<0.05	0.05	No degradation
carbon disulphide	L	75-15-0	>480	>480	>480	6	<0.05	0.05	No degradation
chlorine	G	7782-50-5	>480	>480	>480	6	<0.001	0.001	No degradation
chloroacetic acid (68%)	L	79-11-8	>480	>480	>480	6	<0.001	0.001	No degradation
chlorobenzene	L	108-90-7	120	145	291	5	1.5 (max)	0.05	No degradation
chloroethanol 2-	L	107-07-3	>480	>480	>480	6	<0.02	0.02	No degradation
chloroform	L	67-66-3	3	6	9	0	22.5	0.01	No degradation
cresol m-	L	108-39-4	>480	>480	>480	6	<0.05	0.05	No degradation
cyclohexane	L	110-82-7	>480	>480	>480	6	<0.05	0.05	No degradation
cyclohexanone	L	108-94-1	7	13	>480	6	0.23	0.05	No degradation
dichlorodimethylsilane	L	75-78-5	>480	>480	>480	6	<0.001	0.001	Slight blistering
dichloromethane	L	75-09-2	>480	>480	>480	6	<0.05	0.05	No degradation
diesel fuel	L	-	>480	>480	>480	6	<0.10	0.10	No degradation
diethylamine	L	109-89-7	7	8	11	1	2.1	0.05	Slight swelling
di(2-ethylhexyl)phthalate	L	117-81-7	nt	nt	>480	6	nm	1.0	No degradation
dimethylacetamide N,N	L	127-19-5	223	>480	>480	6	0.08	0.05	No degradation
dimethylformamide N,N	L	68-12-2	>480	>480	>480	6	<0.01	0.01	No degradation
dimethyl sulphate	L	77-78-1	>480	>480	>480	6	<0.02	0.02	No degradation
dimethyl sulphide	L	75-18-3	7	12	29	1	2.6	0.05	No degradation
dimethyl sulphoxide	L	67-68-5	>480	>480	>480	6	<0.02	0.02	No degradation
dioxane 1,4-	L	123-91-1	26	>480	>480	6	0.05	0.01	No degradation

Chemical Name	State	CAS Number	Actual (min.)	ASTM (min.)	EN374-3 (min.)	EN Class	SSPR µg/(min.cm²)	MDPR µg/(min.cm²)	Observation
epichlorohydrin	L	106-89-8	>480	>480	>480	6	<0.05	0.05	No degradation
ethanol	L	64-17-5	>480	>480	>480	6	<0.02	0.02	No degradation
ethanolamine	L	141-43-5	>480	>480	>480	6	<0.001	0.001	No degradation
ethyl acetate	L	141-78-6	>480	>480	>480	6	<0.01	0.01	No degradation
ethyl cellosolve acetate	L	111-15-9	>480	>480	>480	6	<0.01	0.01	No degradation
ethylene diamine	L	107-15-3	>480	>480	>480	6	<0.001	0.001	No degradation
ethylene dibromide	L	106-93-4	>480	>480	>480	6	<0.05	0.05	No degradation
ethylene glycol	L	107-21-1	>480	>480	>480	6	<0.05	0.05	No degradation
ethylene oxide	G	75-21-8	>480	>480	>480	6	<0.05	0.05	No degradation
formaldehyde (37%)	L	50-00-0	>480	>480	>480	6	<0.001	0.001	No degradation
formic acid (96%)	L	64-18-6	>480	>480	>480	6	<0.001	0.001	Discolouration
furaldehyde 2-	L	98-01-1	7	16	>480	6	0.50	0.02	No degradation
glutaraldehyde (5%)	L	111-30-8	>480	>480	>480	6	<0.10	0.10	No degradation
heptane	L	142-82-5	>480	>480	>480	6	<0.02	0.02	No degradation
hexane	L	110-54-3	>480	>480	>480	6	<0.05	0.05	No degradation
hydrazine monohydrate	L	7803-57-8	>480	>480	>480	6	<0.001	0.001	No degradation
hydrochloric acid (37%)	L	7647-01-0	>480	>480	>480	6	<0.001	0.001	No degradation
hydrofluoric acid (48%)	L	7664-39-3	>480	>480	>480	6	<0.02	0.02	No degradation
hydrofluoric acid (73%)	L	7664-39-3	30	267	>480	6	0.18	0.01	No degradation
hydrogen chloride	G	7647-01-0	>480	>480	>480	6	<0.001	0.001	No degradation
hydrogen fluoride (anhydrous gas)	G	7664-39-3	132	244	304	5	nm	0.01	Degraded and discoloured
hydrogen fluoride (anhydrous liquid)	L	7664-39-3	52	125	228	4	1.5	0.01	Degraded and discoloured
hydrogen peroxide (30%)	L	7722-84-1	>480	>480	>480	6	<0.001	0.001	No degradation
kerosene	L	8008-20-8	>480	>480	>480	6	<0.05	0.05	No degradation
mercuric chloride (sat. solution)	L	7487-94-7	>480	>480	>480	6	<0.001	0.001	No degradation
methacrylic acid	L	79-41-4	>480	>480	>480	6	<0.001	0.001	No degradation
methanol	L	67-56-1	46	57	>480	6	0.54	0.02	No degradation
methyl acrylate	L	96-33-3	118	231	>480	6	0.15	0.02	No degradation
methyl-t-Butyl-ether	L	1634-04-4	145	248	>480	6	0.16	0.05	No degradation
methyl chloride	G	74-87-3	>480	>480	>480	6	<0.05	0.05	No degradation
methyl ethyl ketone	L	78-93-3	>480	>480	>480	6	<0.05	0.05	No degradation
methyl mercaptan	G	74-93-1	>480	>480	>480	6	<0.001	0.001	No degradation
methyl methacrylate	L	80-62-6	58	97	>480	6	0.42	0.02	No degradation
methyl vinyl ketone	L	78-94-4	>480	>480	>480	6	<0.05	0.05	No degradation
Methyl -2-pyrrolidone n-	L	872-50-4	6	12	>480	6	0.74	0.05	No degradation
methylene bromide	L	74-95-3	28	39	>480	6	0.45	0.05	No degradation
nicotine	L	54-11-5	nt	nt	>480	6	nm	0.10	No degradation
nitric acid (70%)	L	7697-37-2	>480	>480	>480	6	<0.001	0.001	No degradation
nitric acid (>90% fuming)	L	7697-37-2	>480	>480	>480	6	<0.01	0.01	Discolouration
nitrobenzene	L	98-95-3	>480	>480	>480	6	<0.05	0.05	No degradation
nitromethane (96%)	L	75-52-5	>480	>480	>480	6	<0.05	0.05	No degradation
oleum (15% free SO3)	L	8014-95-7	>480	>480	>480	6	<0.001	0.001	No degradation
perchloric acid	L	7601-90-3	>480	>480	>480	6	<0.001	0.001	No degradation
petrol, leaded	L	-	>480	>480	>480	6	<0.10	0.10	No degradation
petrol, unleaded	L	8006-61-9	>480	>480	>480	6	<0.05	0.05	No degradation
phenol (85%)	L	108-95-2	>480	>480	>480	6	<0.05	0.05	No degradation
phosphoric acid (85%)	L	7664-38-2	>480	>480	>480	6	<0.001	0.001	No degradation
phosphorus oxytrichloride	L	10025-87-3	373	437	440	5	5.7 (max)	0.001	No degradation
potassium chromate (sat. solution)	L	7789-00-6	>480	>480	>480	6	<0.05	0.05	No degradation
propan-2-ol	L	67-63-0	>480	>480	>480	6	<0.05	0.05	No degradation
propylene oxide 1,2-	L	75-56-9	75	91	>480	6	0.55 (max)	0.05	No degradation
pyridine	L	110-86-1	19	22	>480	6	0.50 (max)	0.05	No degradation
'Roundup' weedkiller	L	-	>480	>480	>480	6	<0.001	0.001	No degradation
sodium cyanide (45%)	L	143-33-9	>480	>480	>480	6	<0.001	0.001	No degradation
sodium hydroxide (40%)	L	1310-73-2	>480	>480	>480	6	<0.001	0.001	No degradation

Chemical Name	State	CAS Number	Actual (min.)	ASTM (min.)	EN374-3 (min.)	EN Class	SSPR µg/cm²/min	MDPR µg/cm²/min	Observation
sodium hypochlorite (12% chlorine)	L	7681-52-9	>480	>480	>480	6	<0.001	0.001	No degradation
styrene	L	100-42-5	157	208	>480	6	0.51 (max)	0.05	No degradation
sulphur dioxide	G	7446-09-5	>480	>480	>480	6	<0.001	0.001	No degradation
sulphuric acid (50%)	L	7664-93-9	>480	>480	>480	6	<0.001	0.001	No degradation
sulphuric acid (95-98%)	L	7664-93-9	>480	>480	>480	6	<0.001	0.001	No degradation
tetrachloroethylene	L	127-18-4	>480	>480	>480	6	<0.05	0.05	No degradation
tetrahydrofuran	L	109-99-9	23	27	41	2	4.1	0.05	No degradation
toluene	L	108-88-3	39	79	173	4	2.0	0.04	No degradation
toluene 2,4-diisocyanate	L	584-84-9	>480	>480	>480	6	<0.10	0.10	No degradation
toluidine o-	L	95-53-4	>480	>480	>480	6	<0.05	0.05	No degradation
trichloroacetic acid (80%)	L	650-51-1	>480	>480	>480	6	<0.001	0.001	No degradation
trichlorobenzene 1,2,4-	L	120-82-1	>480	>480	>480	6	<0.05	0.05	No degradation
trichloroethylene	L	79-01-6	12	14	21	1	12.1	0.05	No degradation
trifluoroacetic acid	L	76-05-1	>480	>480	>480	6	<0.001	0.001	No degradation
triethylamine	L	121-44-8	59	71	168	4	1.7	0.05	No degradation
vinyl acetate	L	108-05-4	>480	>480	>480	6	<0.05	0.05	No degradation
xylene (iso-mix)	L	1330-20-7	377	399	>480	6	0.35 (max)	0.05	No degradation

Key:

State	L-Liquid, G-Gas	**>**	Larger than
CAS Number	Chemical abstracts service registry number	**<**	Smaller than
ASTM (min.)	Normalized breakthrough time at a rate of 0.1 µg per cm² per minute, in minutes.	**imm**	Immediate (< 10 min)
EN374-3 (min.)	Normalized breakthrough time at a rate of 1.0 µg per cm² per minute, in minutes.	**nm**	Not measured
EN Class	Performance classification according to EN 14325	**nt**	Not tested
SSPR µg/cm²/min	Steady state permeation rate in µg per cm² per minute	**max**	Maximum Permeation Rate (SSPR not reached)
MDPR µg/cm²/min	Minimum detectable permeation rate in µg per cm² per minute		

RESPIREX™

Living + Breathing Personal Protection

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