

RJS STANDARD RESPIRATOR SUIT

CHEMPROTEX™ 300



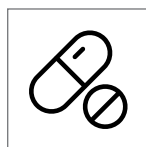
RESPIREX™

Description

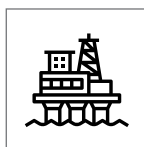
The Respirex RJS Powered Respirator Suit is a one piece **liquid-tight** chemical protective suit designed for industrial chemical and particulate hazard protection. The suit incorporates permanently attached Kemblok™ chemical barrier gloves with oversleeves and a sock foot with splash guard outer legs for use with safety boots worn on the outside of the suit.

The suit is manufactured from **Chemprotex™ 300**, a high performance, five layer, nonwoven, chemical barrier fabric that is light weight with a spunbonded lining for wearer comfort.

Applications



Pharmaceutical



Petro-Chemical



Health Authorities



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 12941:1998+A2:2008
Respiratory protective devices



Regulation (EU) 2016/425
Personal Protective Equipment

Material Performance



EN 14126:2003
Protective Clothing Against Infective Agents



EN 1149-1:2006
Antistatic Protective Clothing

Powered Respirator Performance

Airflow (min): **160l/min**

Noise: **<75db** (in the hood)

Ingress Protection: **IP64**

(Suitable for use in a decontamination shower)

Key Features

Respiratory system comprising a belt mounted **battery powered CleanAIR® Chemical 2F** powered respirator fitted with a **visual display unit** mounted inside the suit at the base of the visor, with an audible alarm

Chest zip with double storm flap and hook and loop fastener - no taping is required to seal

Twin **CleanAIR® filters** with splash guard cover fitted externally at the rear (range of filters available)

Attached **Kemblok™ chemical barrier gloves** with separate neoprene outer gloves and elasticated outer sleeves

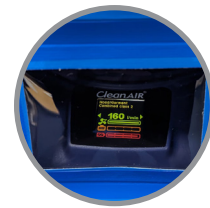
Integral **sock foot** with **outer splash guard leg** for use with safety boots worn outside the suit

Semi-rigid **laminated visor** for clear undistorted vision

Ten year shelf-life, with a suit inspection and test every three years.

Adjustable internal **support belt**

A clear chemical protective window at the back of the suit fitted over the CleanAIR® Chemical 2F respirator status display, allows viewing of battery status, filter status and airflow



Two exhalation valves above the knees maintain a comfortable working pressure inside the suit

Powered Respirator

Worn inside the RJS suit, with the filters mounted externally the Chemical 2F powered respirator combines sophisticated electronics with a durable easy-clean construction. The auto-closing inlets prevent contamination entering the suit while the filters are being changed. While the smart flow control system maintains a constant airflow regardless of filter loading or battery charge.

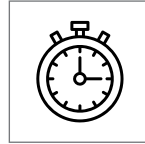
Rechargeable or primary (single-use, 10 year shelf life) batteries are available and a remote audio and visual alarm fitted in the suit hood indicates when safe working time has elapsed or if there is an issue with the respirator. Available with a range of filters, including **P3**, **Chemical** or **Combination filters** providing protection against chemical and biological warfare agents.



Benefits



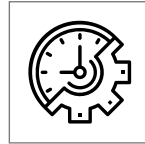
Can be used by wearers with **facial hair and/or glasses**



Improved operational duration over gas-tight suits with SCBA



No requirement for **face-fit testing**



Up to six times the resource efficiency compared with gas-tight SCBA suits thanks to the lower physiological loading and increased duration



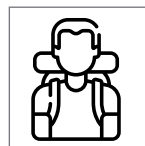
Training needs are reduced



Significantly **lighter and more comfortable**, with easier breathing and less equipment in body contact than with a gas-tight suit with SCBA



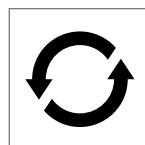
Powered respirator provides **cooling air over the head** and through the suit, making the wearer more comfortable and better able to focus on tasks



The lower weight and increased user comfort results in a **lower physiological load** than a conventional gas-tight suit



A **Large visor** provides reassurance to casualties and victims by maintaining non-verbal communication through facial expression and aids speech recognition through visible lip movements.



The powered respirator is removable and reusable (the filters, external locking rings and single -use batteries will need to be replaced)

Accessories



Hazmax™ Boots

Chemical safety boots (S5), with an integral steel toecap and midsole. Highly chemically resistant with a slip resistant sole.



Batteries

4 Hour Rechargeable battery (and separate charger) for use in training applications

4 Hour Single-Use Lithium battery for immediate operational use with an extended storage life



Backpack Harness

A backpack style harness system, worn in conjunction with the supplied belt that can be fitted to the CleanAIR® chemical 2F powered respirator for greater wearer comfort during extended use.



Filters

A range of particulate (P3), chemical and combination filters are available to suit the application of the suit.

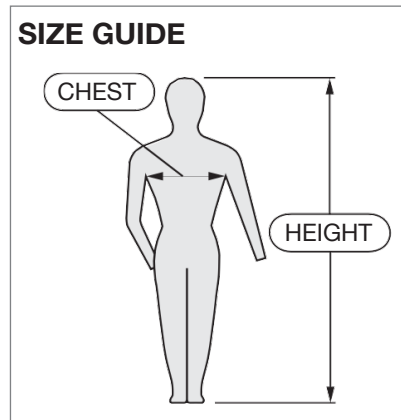


Hard Hat

Peakless hard hat that can be worn comfortably inside the RJS suit

Sizing Chart

Size	Chest (cm)	Height (cm)
Small	88-96	163-175
Medium	96-104	169-182
Large	104-112	176-188
X-Large	112-124	182-194
XX-Large	124-136	188-200



Specifications

RJS Suit

Pack Size (max)	TBC
Pack Weight (max)	TBC
Carton Qty	TBC
Commodity Code	62104000

Specifications are based on an XL sized suit with boots, but without optional accessories and are for guidance only

Material Properties

Performance Requirement	Test Method	Property value of Chemprotex™ 300	Class
Abrasion Resistance	EN 530:1994 Method 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 x 10 ⁸ Ω, Reverse <3.4 x 10 ⁷ Ω	-

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 RJS 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 $\mu\text{g}/(\text{min.cm}^2)$	MDPR $\mu\text{g}/(\text{min.cm}^2)$	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	65532	>480	>480	>480	6	<0.10	0.10	No degradation
acrylic acid	L	65660	>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 $\mu\text{g}/(\text{min.cm}^2)$	MDPR $\mu\text{g}/(\text{min.cm}^2)$	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 $\mu\text{g}/\text{cm}^2/\text{min}$	MDPR $\mu\text{g}/\text{cm}^2/\text{min}$	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	2025884	>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 cm^2 per minute, in minutes.	imm	Immediate (< 10 min)
EN374-3 (min.)	Normalized breakthrough time at a rate of 1.0 μg per cm^2 per minute, in minutes.	nm	Not measured
EN Class	Performance classification according to EN 14325	nt	Not tested
SSPR $\mu\text{g}/\text{cm}^2/\text{min}$	Steady state permeation rate in μg per cm^2 per minute	max	Maximum Permeation Rate (SSPR not reached)
MDPR $\mu\text{g}/\text{cm}^2/\text{min}$	Minimum detectable permeation rate in μg per cm^2 per minute		

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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.



RESPIREX™

Living + Breathing Personal Protection

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