

 **RSG**®



**Maintenance
Free Chemical
Protective Clothing**

Welcome

RSG® Safety BV supplies high quality chemical protective work wear to PPE distributors throughout Europe and the rest of the world.

RSG® Safety designs, develop, certify, manufacture and market a full range of protective clothing conforming to EN340:2003 Category III. All coveralls are designed to meet or exceed the requirements of the European PPE Directive 89/686/EEC for chemical protective clothing. The range consists of Type 3, 4, 5 and 6 models, as well as airhoods for both Airline and PAPR in accordance with EN14594 and EN12941 standards.

Within the range of RSG® Safety coveralls are models which also conform to EN1149-5 anti static properties, EN14126:2003 barrier to infective agents, EN1073-2:2002 barrier to radioactive contaminated particles and EN 14116 Limited flame spread materials.

Complete Head to Toe Solutions

Protecting workers while they work in dirty or hazardous environments is the focus of RSG Safety BV. Whether you are working with liquid or solid chemicals, asbestos, paint, oil, grease, viruses or one of the countless other workplace contaminants, RSG provides a solution for your specific needs.

As part of our Respiratory portfolio RSG provides complete solutions in both powered and continuous flow compressed air headtops, helmets and hoods in various maintenance free chemical protective materials. These are used for applications varying from chemical, petrochemical, pharmaceutical and many other applications where protection of the complete body as well as respiratory and / or head protection is required.



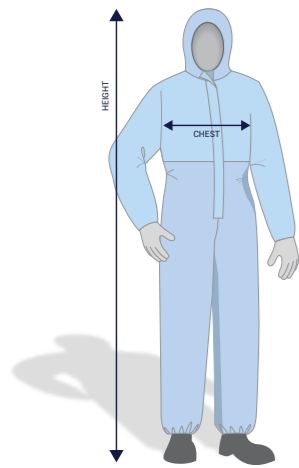
European Standards for Chemical Protective Clothing

Current European Types of Chemical Protective Clothing		
EN Types	Definition	Symbol*
EN 943-1 & 2 Type 1	Gas Tight Chemical Protective Clothing Protective clothing against liquid and gaseous chemicals, aerosols and solid particulates	
EN 943-1 Type 2	Non Gas Tight Chemical Protective Clothing Suits which retain positive pressure to prevent ingress of dusts, liquids and vapours	
EN 14605 Type 3	Liquid Tight Suits Suits which can protect against strong and directional jets of liquid chemical	
EN 14605 Type 4	Spray Tight Suits Suits which offer protection against saturation of liquid chemicals	
EN ISO 13982-1 Type 5	Dry Particulate Protection Suits which provide protection to the full body against airborne solid particulates	
EN 13034 Type 6	Reduced Spray Suits Suits which offer limited protection against a light spray of liquid chemicals	

Additional Standards for the RSG product range		
EN Types	Definition	Symbol*
EN1073-2:2003	Protective clothing against radioactive particulate contamination.	
EN1149-5 :2008	Protective clothing with electrostatic dissipative properties	
EN14126:2003	Protective clothing against infective agents and biological hazards	
EN ISO 14116	Protective Clothing Limited flame spread materials, material assemblies and clothing	

Sizes

The RSG product range is available in sizes Medium to 3XL and a range of styles to suit different applications. Special sizes can be manufactured on request. Please contact RSG Safety for more information.



	CHEST (cm)	HEIGHT (cm)
S	84-92	162-170
M	92-100	170-176
L	100-108	176-182
XL	108-116	182-188
2 XL	116-124	188-194
3 XL	Special Oversize	



RSG Style pattern

All RSG maintenance free coveralls use the unique RSG style pattern. A combination of features:

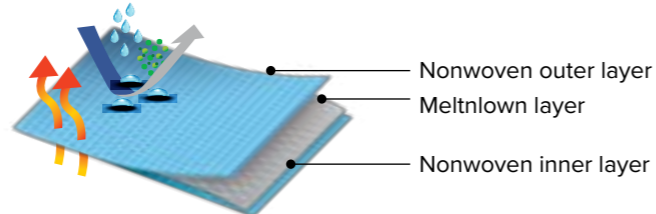
1. 3 piece hood,
2. inset sleeves and
3. 2 piece gusset resulting in a coverall which is generously sized and features superior fit and excellent freedom of movement.

Fabrics

Fabric Description:

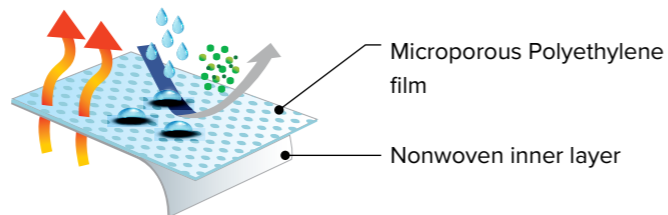
SMMS (Spunbond, Meltblown Meltblown Spunbond)

offers the highest level of comfort with protection because of the high level of breathability compared with other Type 5 & 6 garments. The "meltblown" layer in the SMMS fabric between the Spunbond PP layers provides an effective dust filtration and liquid repellency whilst maintaining high air permeability.



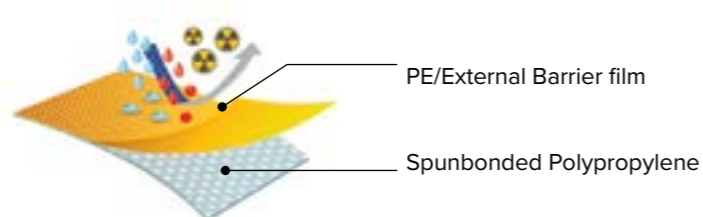
Microporous Polyethylene (PE) Laminate

provides both protection and comfort with the latest microporous film laminate technology, providing exceptional liquid and particulate protection. Ideal for a wide range of industrial applications where protection from low hazard liquid spray and fine particulates is required.



Polyethylene (CHEM1) or multi-layer barrier film (CHEM3)

material applied to a melt blown and spun bonded polypropylene structural layer for type 3 protection against light and hazardous chemicals.



Seam Types

RSG Safety uses different types of seams are used on different garments to achieve different levels of protection.

Stitched or "Serged" seam

This is a standard 3 thread overlocking technology, which offers an excellent balance of a strong seam with good particle barrier. Internal stitching reduces the risk of any potential linting from the thread. Serged seams are generally used on garments for light splash and dry particle protection

Applies to type 5 & 6 coveralls: [Comfort Workwear BP, GP](#), [Microporous NS](#)



Bound Seam

The seam is an "wrapped" with a folded strip of similar or stronger material. This technology provides a tougher seam with superior strength, liquid and particle barrier when compared to a traditional stitched seam. A bound seam is not suitable for a chemical suit as it is not liquid tight.

Applies to type 5 and 6 coveralls: [Microporous LCP](#) and [Cool Suit](#)



Stitched & Taped Seam

The seam is first stitched and sealed on the outside with a heat activated tape. This results in an impervious seam which is completely liquid-tight. As these seams are generally used for chemical suits the tape type is often constructed from a similar material to the garment fabric in order to maintain similar chemical permeation properties.

Applies to type 3 and 4 coveralls: [Microporous TS](#), [CHEM1](#) and [CHEM3](#)



Disclaimer

RSG coveralls are available for most applications. However please note that a detailed assessment of the nature of the hazard and the working environment should be undertaken prior to the selection of appropriate PPE. RSG Safety BV provides the information in this product catalogue to assist you with selecting the correct product, but responsibility for the correct choice of PPE remains with the user.

Range	PAGES
Type 5 & 6 Protection against light chemical splash and hazardous dusts	6 - 9
Type 5 & 6 Cool Suit - Composite protection	10 - 11
Type 3 & 4 Protection against liquid chemical spray	12 - 17
Type 5 & 6 Protection against Flames & heat - EN11612 / EN 11611	18 - 20
Type 3,4,5 & 6 Chemical protection with Flame Retardency - EN 14116	20 - 21



Comfort Workwear SMS

Type 5 & 6 Limited use, breathable coveralls for dust and light liquid chemical splash protection

The RSG Comfort Workwear is made from nonwoven polypropylene for high breathability and excellent comfort. The coveralls offer effective protection against hazardous dry particles and light liquid sprays.

The unique RSG pattern consists of a coverall with 3 piece hood, inset sleeves, thumb loops, 2 piece diamond gusset, elasticated hood, waist, cuffs and ankles.

Features:

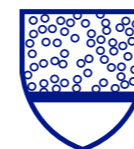
- Highly breathable so comfortable to wear.
- Excellent protection against dry particles and splashes of liquids.
- Unique RSG style pattern - ergonomically styled and sized for generous fit and superior freedom of movement. Thumb loop
- Thumb loop
- Anti Static properties on GP and BP110
- Good price – quality comparison

Applications

- Asbestos removal
- Wind blade & similar manufacture
- Wood and plastic processing
- Insulation
- General manufacturing and maintenance
- Low level / low hazard sprays



Also available in Blue



TYPE 5

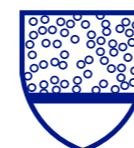


TYPE 6



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RSG Comfort Workwear Basic and General Protection					
Part #	Description	Size	MOQ	Material	Properties
10000X	RSG Comfort Workwear GP	M/L/XL/XXL/XXXL	50 pcs	56 gsm SMS	Non Anti Static
10005X	RSG Comfort Workwear BP100	M/L/XL/XXL/XXXL	50 pcs	45 gsm SMMS	Non Anti Static



TYPE 5



TYPE 6



EN-1073-2



EN-1149-5

RSG Comfort Workwear Basic and General Protection					
Part #	Description	Size	MOQ	Material	Properties
10010X	RSG Comfort Workwear GP	M/L/XL/XXL/XXXL	50 pcs	56 gsm SMS	Anti Static
10015X	RSG Comfort Workwear BP110	M/L/XL/XXL/XXXL	50 pcs	50 gsm SMMS	Anti Static



Microporous NS & LCP

Type 5 & 6 Limited use coveralls for dust and light liquid chemical splash protection

The RSG Microporous coverall is laminated with a polyethylene film and has stitched seams. The PE film features a high liquid protection and dust barrier whilst allowing moisture vapor to escape through a high moisture vapor transmission rate. The Microporous coveralls offer superior liquid and dust protection to traditional flash spun PE along with good comfort and durability.

Features:

- Superior liquid and dust protection.
- Soft, flexible fabric for comfort.
- High moisture and vapor transmission for higher comfort level.
- Unique RSG style pattern - ergonomically styled and sized for generous fit and superior freedom of movement.
- Thumb loop.
- Also available in lab coats, overshoes, sleeves etc.

Applications

- Paint - spray applications
- Low - level insecticide / pesticide spraying
- Wet applications in GRP manufacture
- Boat building
- Pharmaceutical manufacture
- General maintenance and cleaning applications
- Scene of Crime Operations
- Low hazard emergency response applications



Laboratory Workwear

The RSG Laboratory Workwear will provide partial body protection to Type 6 (B) for the part of the body covered only.



TYPE 5



TYPE 6



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EN-14126

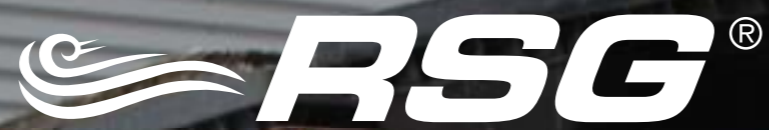


Overboots / Overshoes

Overboots and shoes are designed primarily to protect the environment from the user rather than to provide the user with protection. However, the non-slip overboot / shoes will provide partial body protection to Type 6 (B) for the part of the body covered only.

RSG Microporous LCP & NS

Part #	Description	Size	MOQ	Material
10050X	RSG Microporous NS series	M/L/XL/XXL/XXXL	25 pcs	Microporous 65 gsm
10055X	RSG Microporous LCP	S/M/L/XL/XXL/XXXL	50 pcs	Microporous 50 gsm
10070X	RSG Laboratory Workwear	M/L/XL/XXL	25 pcs	Microporous 65 gsm
100903	RSG Overshoes - pairs	-	100 pcs	Microporous 65 gsm
100913	RSG Overboots - pairs	-	100 pcs	Microporous 65 gsm



Microporous Cool Workwear

Limited use coverall for dust and liquid splash protection with a breathable back panel thus ideal for warmer work environments

The RSG Cool Workwear has been specifically designed for those working in warmer climates or warm working environments to help reduce the risk of heat stress.

The critical areas to the front of the garment (including the hood, arms and legs) are made from Microporous film on a polypropylene substrate provide barrier protection. The flap cover over the zipper protects against splashes.

The back panel is made of a blue SMS fabric which is air and water vapour permeable.

This panel allows airflow around the suit, increasing wearer comfort.

Bound seams ensure spray-tight protection to the front of the garment and excellent overall particle protection.

Features:

- The back of the coverall features a large panel of highly breathable SMS material-in blue for easy identification.
- This enables the suit to breath easily, making the Cool Workwear suit comfortable in the warmest of working environments.
- The RSG Cool Workwear suit is constructed using bound seams for superior strength properties and improved particle and liquid repellency at the seams.

Applications

- Warm environments where Type 5 & 6 protection is required
- Paint spray applications
- Low level insecticide spraying
- Wet applications in GRP manufacturing
- Boat Building
- Wind - blade manufacture
- Pharmaceutical manufacture
- General maintenance and cleaning applications
- Scene of the crime operations
- Low hazard emergency response applications



Can be combined with:
T-AirHood 1000 M tested and approved in accordance with EN14594 (Airline) and EN12941 (PAPR)



TYPE 5



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EN-1149-5



EN-14126

RSG Microporous Cool Workwear

Part #	Description	Size	MOQ	Material
10060X	RSG Cool Workwear	M/L/XL/XXL/XXXL	25 pcs	Microporous 65 gsm + 56 gsm SMS



Microporous TS Series

Type 4 Limited use coverall for dust and liquid spray and splash protection.

Microporous PE film laminate coverall with stitched and taped seams. Taped seams enables certification to liquid spray (EN14605 – Type 4) and makes the garment ideal for pharmaceutical or bio-hazard applications where protection against infectious agents, blood and body fluids is required. Microporous film features superior liquid protection compared to more traditional flash-spun polyethylene garments.

Features:

- Taped seam means a fully sealed seam against liquid and dust ingress.
- Superior liquid and dust protection
- Soft, flexible fabric for comfort
- High moisture vapor transmission rate for higher comfort level
- Unique RSG style pattern – ergonomically styled and sized for generous fit and superior freedom of movement

Applications

- Pharmaceutical manufacture
- Electronics manufacture
- Paint spray applications
- Low-level insecticides/ pesticides spraying
- Wet applications in GRP manufacture
- Boat Building
- Wind Blade Manufacture
- General maintenance and cleaning applications
- Scene of crime operations
- Low hazard emergency response applications



Note: Type 4 is often used to infer chemical protection. However, microporous films have only a very limited permeation barrier against hazardous chemicals so care should be taken when used to protection in such situations chemical.



TYPE 4



TYPE 5



TYPE 6



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EN-1149-5



EN-14126

RSG Microporous TS				
Part #	Description	Size	MOQ	Material
10080X	RSG Microporous TS series	M/L/XL/XXL/XXXL	25 pcs	Microporous 63 gsm

EN 14126 is the standard defining fabric barrier tests for garments to protect against infectious agents such as bacteria and blood-borne pathogens. There are five tests measuring the ability of a fabric against various types of possible contaminated mediums. This might be an applicable standard for various emergency services, health service, pharmaceutical or veterinary personnel. The standard only addresses fabric performance, making no specification requirements for garment seams. This means that technically a serged (stitched) seam garment could be certified to this standard. It is RSG's view that only a garment with taped seams is suitable. SMS garments such as will not meet the minimum performance levels of the standard.



Chemical Workwear CHEM 1 Series

Type 3 liquid tight, lightweight chemical suit for protection against splashes and sprays of hazardous chemicals. CHEM 1 is the entry level lightweight coverall featuring a HDPE film laminated to a PE substrate. Effective protection against range of commonly used chemicals combined with taped seams, double zip & storm flap and RSG unique pattern style.

Features:

- Fabric offers protection against a range of commonly used chemicals.
- Stitched and taped seams for fully impervious seams.
- Double zip / storm flap for front fastening security.
- Wide, cushioned knee-pads
- Coverall with 3 piece hood, inset sleeves, 2 piece diamond crotch insert, elasticated hood, waist, cuffs and ankles, cushioned knee-pads

Applications

- Tank Cleaning
- Petrochemical & Refining
- Hazardous maintenance
- Chemical Handling
- Contaminated land clearance
- Jet Spray Cleaning

Can be combined with:
T-AirHood 1000 M tested and approved in accordance with EN14594 (Airline) and EN12941 (PAPR)



Note: Selection of chemical suits will require an assessment of the chemical barrier against relevant chemicals according to permeation tests as well as on the design and comfort level of the suit. A summary of tests on CHEM 3 can be seen on the technical datasheet.



TYPE 3



TYPE 4



TYPE 5



TYPE 6



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EN-1149-5



EN-14126

RSG Chemical Workwear CHEM1				
Part #	Description	Size	MOQ	Material
10020X	RSG Chemical Workwear CHEM 1 series	M/L/XL/XXL/XXXL	10 pcs	78 gsm HD/PE barrier film laminate.



Chemical Workwear CHEM 3 Series

Type 3 Heavy duty chemical suit for protection against strong sprays of a wide range of hazardous chemicals.

The CHEM3 is the comprehensive coverall for Type 3 & 4 protection against hazardous chemicals. The multi-layer barrier film provides protection against a wide range of hazardous chemicals. In addition co-extrusion technology means a smooth and flexible fabric that does not suffer from the crushing and pitting suffered by adhesive of heat laminated barrier fabrics – so thickness and permeation is uniform throughout the fabric surface.

Features:

- Multi-layer barrier film with smooth, flexible and even finish.
- Stitched and taped seams for fully impervious seams.
- Wide, cushioned knee-pads
- Double zip / storm flap for front fastening security.
- Tunneled elastic to hood, cuffs and ankles.
- Coverall with 3 piece hood, inset sleeves, 2 piece diamond crotch insert, elasticated hood, waist, cuffs and ankles
- Tested against a range of Chemical Warfare agents

Applications

- Higher hazard chemical protection
- Petrochemical & Refining applications
- Chemical handling & distribution
- Contaminated land clearance
- Oil-spill clearance
- Civil defence / emergency applications

Can be combined with:
T-AirHood 1000 M tested and approved in accordance with EN14594 (Airline) and EN12941 (PAPR)



Chemical Warfare Agents Testing

The CHEM3 fabric has been tested by the European trusted company PROQUARES - a wholly owned subsidiary of TNO, the Netherlands. PROQUARES is one of the leading European facilities for the assessment of military protective equipment. Testing has been conducted to the FINABEL O.7C test method against all 6 major warfare agents. RSG Chemical Workwear CHEM 3 fabric achieves the maximum breakthrough of >48 Hours for all 6 Chemical Warfare Agents.

RESULTS Agent	CAS Number	State	Breakthrough	Units	Result
Lewisite L	541-25-3	Liquid	>48.00	hh:mm	PASS
Mustard HD	505-60-2	Liquid	>48.00	hh:mm	PASS
Sarin GB	107-44-8	Liquid	>48.00	hh:mm	PASS
Soman GO	96-64-0	Liquid	>48.00	hh:mm	PASS
Tabun GA	77-81-6	Liquid	>48.00	hh:mm	PASS
VX VX	50782-69-9	Liquid	>48.00	hh:mm	PASS



TYPE 3



TYPE 4



TYPE 5



TYPE 6



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EN-1149-5



EN-14126

Chemical Workwear CHEM3

Part #	Description	Size	MOQ	Material
10040X	RSG Chemical Workwear CHEM 3 series	M/L/XL/XXL/XXXL	10 pcs	150 gsm Multilayer EVOH film barrier



Multi Use Workwear FR

Type 5/6 Breathable disposable multi use coverall combining splash protection and flame retardancy.

The RSG Multi Use FR Workwear features a unique viscose-based flame retardant base fabric with an added nylon scrim to increase strength and durability for tougher Type 5 & 6 applications where these properties are required. Disposable flame retardant garments are designed to be worn over thermal protective garments without compromising thermal protection in the way standard disposables will. The RSG flame retardant coveralls are engineered to char at temperatures lower than its ignition point so that it will not ignite, propagate a flame or drip molten, burning debris.

The RSG Multi Use FR Workwear has far more effective flame retardant properties than flame retardant SMS garments which have extremely limited and questionable abilities.

Contact RSG Safety BV for more information.

Features:

- Flame retardant fabric with nylon scrim for added strength and toughness
- Combined Type 5 & 6 protection with FR approval to EN 14116 (Index 1) – superior FR to FR SMS fabrics*.
- Soft, flexible and highly breathable so comfortable to wear.
- Proven not to compromise Thermal Protection when worn as TPG over-garment
- Coverall with 3 piece hood, inset sleeves, 2 piece diamond crotch insert, elasticated hood, waist, cuff and ankles.

Applications

- Petrochemical & Refining Industries
- Wear over thermal protective garments without compromising chemical protection
- Maintenance applications
- Fuel handling and distribution



EN14116:2008: Protective Clothing: Limited Flame Spread Materials

Index 1: Materials do not propagate a flame / No flaming debris / No spreading afterglow. Garments should not be worn next to the skin. RSG FR disposable coveralls have been used for many years in industries such as petrochemical because of their combined chemical protection and flame retardant properties. Recent years however have seen an increase in the use of various garments based on polypropylene SMS nonwoven treated with FR chemicals. Such FR SMS garments have often been certified as Index 1 fabrics according to EN 533:1997... a standard now 15 years old and replaced by EN 14116:2008. More recently the bigger brands of FR SMS have been certified to EN 14116. Note that there are critical differences between the two standards. Please contact RSG for more information on this crucial and critical subject.



TYPE 5



TYPE 6



EN-1073-2



EN-1149-5



EN-ISO14116

Multi Use Workwear FR				
Part #	Description	Size	MOQ	Material
10100X	RSG Multi Use Workwear FR	M/L/XL/XXL/XXXL	50 pcs	101 gsm mix of viscose, rayon and FR treatment



Multi Use Chemical Workwear FR

Type 3 Multi use disposable coverall combining chemical splash protection and flame retardant properties.

The RSG Multi Use Chemical FR Workwear features the viscose-based flame retardant base fabric combined with a PVC flame retardant chemical barrier film. The result is a unique material that offers protection against flames, chemical splashes and sprays to CE Types 3 & 4. The combination of chemical protection and flame retardant properties makes the Multi Use Chemical FR Workwear ideal for a range of applications in the petrochemical and related industries. Disposable flame retardant garments are designed to be worn over thermal protective garments without compromising thermal protection in the way standard disposables will. The RSG flame retardant coveralls are engineered to char at temperatures lower than its ignition point so that it will not ignite, propagate a flame or drip molten, burning debris.

The RSG Multi Use Chemical FR Workwear has far more effective flame retardant properties than flame retardant SMS garments which have extremely limited and questionable abilities.

Contact RSG Safety BV for more information. for more information.

Features:

- Flame retardant base fabric with PVC chemical barrier film laminate for combined FR and chemical protection properties
- Stitched and taped seams for full seal
- 3 piece hood coverall, inset sleeves, 2 piece diamond crotch insert, elasticated hood, waist, cuffs and ankles.
- Double zip / storm flap front fastening

Applications

- Petrochemical & Refining applications
- Fabric will not ignite and burn... wear over TPG's without compromising thermal protection
- Maintenance applications during petrochemical clean downs
- Fuel handling and distribution



Permeation and Penetration

Whilst the 'RSG Multi Use Chemical Workwear FR' is certified for chemical protection to Type 3 & 4 (EN 14605) its primary purpose is to offer flame retardant properties with chemical protection. For this reason the coverall has been permeation tested to only a limited number of chemicals. In addition it should always be worn over other workwear so the small amounts of chemical involved in permeation are less likely to be highly critical.



TYPE 3



TYPE 4



TYPE 5



TYPE 6



EN-1149-5

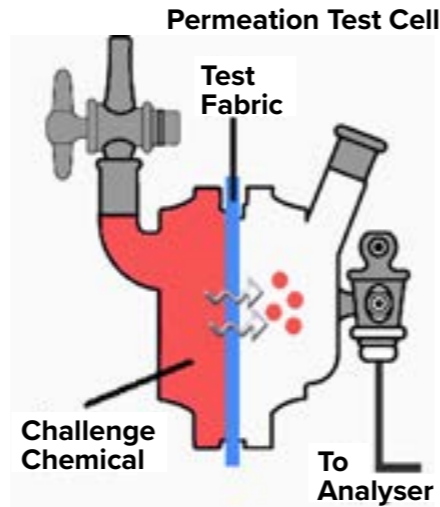


EN-ISO14116

RSG Multi Use Chemical Workwear Flame Retardant				
Part #	Description	Size	MOQ	Material
101101	RSG Multi Use Chemical Workwear FR	M/L/XL/XXL/XXXL	10 pcs	144 gsm mix of viscose rayon and FR treated PVC barrier film

What is permeation?

Permeation is the process by which a chemical passes through a fabric at a molecular level by a process of absorption into the surface, diffusion through the fabric and desorption from the other surface. It is a factor of elements such as the relative size, shape, polarity and solubility of the chemical and barrier material. It is also affected by temperature and other parameters.



Penetration

Penetration is the process by which a liquid physically passes through holes or gaps in the fabric structure (such as between the fibers of an SMS fabric or the "wormholes" of a microporous film). Chemical barrier fabrics are made using solid structure films so penetration cannot normally take place (unless a chemical corrodes the fabric) and permeation is the method by which any chemical might pass through.

Measuring permeation

The resistance of a protective clothing fabric to permeation by a potentially hazardous chemical is determined by measuring the breakthrough time and the permeation rate of the chemical through the fabric.

Permeation Test Methods

There are various permeation test methods in use today. Which one to use depends on a number of factors including the country of use for the protective clothing, and the type of chemical (i.e. gas or liquid).

Breakthrough Detection time (BDT)

The average time elapsed between initial contact of the chemical with the outside surface of the fabric and the detection of the chemical at the inside surface by the analytical device.

A breakthrough detection time of >480 min and a permeation rate below the minimum detectable permeation rate (MDPR) does not mean breakthrough has not occurred. It means that permeation was not detected after an observation time of eight hours. Permeation may have occurred, but at a rate less than the minimum detectable permeation rate or MDPR. MDPR can vary depending on the chemical or the analytical device/test method.

Breakthrough time (BT)

This is the average time between initial contact of the chemical with the outside surface of the fabric and the time at which the chemical is detected at the inside surface of the fabric at the permeation rate specified by the appropriate standard.

The resistance of RSG garments to permeation by a hazardous chemical is determined by measuring the breakthrough time and permeation rate of the chemical through the fabric. Permeation tests are performed by independent, accredited laboratories in accordance with EN ISO 6529 or EN374-3. As specified in EN 14325:2004 either EN 374-3 or EN ISO 6529:2001 can be used for permeation testing, and the normalized breakthrough time is recorded at the permeation rate of 1.0 µg/cm²/min.

As with all Personal Protective Equipment, selection should be based upon the end users risk assessment, it is the responsibility of the end user to determine the suitability of any PPE as part of this risk assessment and to comply with any/all legislative/governmental requirements. Contact RSG safety for more information.

Please Note:

The Breakthrough in Minutes below represents the time taken for a chemical to achieve a specific permeation rate through the fabric as defined by the standard EN374-3. This table represents results achieved according to this particular test under laboratory controlled conditions. The "breakthrough in minutes" is not designed to indicate a particular duration of "safe use" for a garment in a working environment but to indicate in general terms the ability of the fabric to provide a barrier against a specific chemical. The particular conditions in any specific application may vary considerably and therefore it is always the user's responsibility to ensure a garment is suitable for the task. CHEM1&3 garments are designed as single use and as with any chemical suit we would recommend that once contaminated with a chemical they are removed and disposed of at the earliest opportunity.

Chemical Permeation Guide

		FR	CHEM1	CHEM3
Acetic Acid	64-19-7	4	nt	>480
Acetic Anhydride	108-24-7	nt	nt	>480
Acetone	67-64-1		imm.	>480
Acetonitrile	75-05-8		>480	>480
Acrolein	107-02-08		nt	>480
Acrylic Acid	79-10-7		120	>480
Acrylonitrile	107-13-1		nt	>480
Allyl Alcohol	107-18-6		nt	>480
Ammonia Gas	7664-41-7		imm.	>480
Amyl Acetate	628-63-7		Nt	>480
Aniline	62-53-3		nt	>480
Benzene	71-43-2	imm	nt	>480
Benzyl Alcohol	100-51-6		nt	nt
Bromine	7726-95-6		nt	imm.
n-Butanol	71-36-3		nt	nt
n-Butyl Ether	142-96-1		nt	>480
Butraldehyde	123-72-8		nt	nt
1,3-Butadiene	106-99-0		imm.	>480
Carbon Disulfide	75-15-0		>480	>480
Carbon Monoxide	630-08-0		nt	320
Chlorine Gas	7782-50-5		imm.	>480
2-Chloroethanol	107-07-3		>480	-
Chloroacetone	78-95-5		nt	nt
Chlorobenzene	108-90-7		nt	9
Chlorosulfuric Acid	7790-94-5		nt	nt
Crotonaldehyde	123-73-9		nt	nt
Cyclohexane	110-82-7		nt	>480
Cyclohexanone	108-94-1		nt	nt
Cyclohexyl Isocyanate	3173-53-3		nt	nt
1,2-Dichloroethane	107-06-2		nt	>480
Dichloromethane	75-09-2	X	imm.	>480
1,2-Dichloropropane	78-87-5		nt	nt
Diesel Fuel	68334-30-5		nt	>480
Diethylamine	109-89-7	X	imm.	imm.
Dimethylacetamide	127-19-5		nt	nt
Dimethylsulfoxide	67-68-5		nt	>480
Dimethyl Formamide	68-12-2		>480	>480
Dinoseb	88-85-7		nt	>480
Epichlorohydrin	106-89-8		nt	>480
Ethanol Amine	141-43-5		nt	>480
Ethyl Acetate	141-78-6	X	imm.	>480
Ethyl Benzene	100-41-4		nt	>480
Ethylene Glycol	107-21-1		>480	>480
Ethylene Oxide Gas	75-21-8		>480	>480
Formaldehyde	50-00-0		nt	>480
Formic Acid	64-18-6		>480	>480
Gasoline	86290-81-5		nt	>480
Hexamethyldisilazane	999-97-3		nt	nt
HDI - Hexamethylene Diisocyanate	822-06-0		>480	>480

		FR	CHEM1	CHEM3
n-Hexane	110-54-3	X	imm.	>480
Hydrochloric Acid	7647-01-0	13	420	>480
Hydrogen Chloride Gas	7647-01-0	X	imm.	>480
Hydrogen Fluoride	7664-39-3		nt	>480
Hydrogen Fluoride Gas	7664-39-3		nt	>480
Hydrogen Peroxide	7722-84-1		>480	>480
Isoamyl Alcohol	123-51-3		nt	-
Isopropanol	N/A		>480	-
Jet Fuel A	N/A		imm.	>480
Jet Fuel JP-8	N/A		imm.	>480
Lithium Chloride	7447-41-8		>480	nt
Mercury II Nitrate (1000 ppm solution)	7783-34-8		nt	>480
Methanol	67-56-1	>480	210	>480
Methylamine	74-89-5		-	>480
Methyl Chloride Gas	74-87-3		>480	>480
MDA - Methylene Dianiline	83712-44-1		imm.	>480
MDI - Methylene Diphenyl Diisocyanate	101-68-8		>480	>480
Methyl Ethyl Ketone	78-93-3		nt	>480
Methyl Methacrylate	80-62-6		-	>480
Nitric Acid	7697-37-2		>480	>480
Nitrobenzene	98-95-3		50	170
Nitrogen Dioxide	10102-44-0		nt	>480
Oleum	8014-95-7		nt	>480
Phenol	108-95-2		>480	>480
Phosphoric Acid	7664-38-2		nt	>480
Phosphoric Trichloride	12/2/7719		nt	20
Propionitrile	107-12-0		>480	nt
Propylene Oxide	75-56-9		nt	>480
Sodium Hydroxide (50%)	7664-93-9	>480	>480	>480
Styrene	100-42-5		nt	>480
Sulfuric Acid (30%)	7664-93-9	>480	>480	>480
Sulfuric Acid (96%)	7664-93-9	19	>480	>480
Sulphur Dioxide	9/5/7446		nt	>480
Sulfur Trioxide	11/9/7446		nt	80
Tetrachloroethylene	127-18-4		imm.	>480
Tetrafluoroacetic Acid			nt	nt
Tetrahydrofuran	109-99-9	X	imm.	>480
Titanium Tetrachloride	7550-45-0		nt	>480
Toluene	108-88-3	X	imm.	>480
Trichloroethylene	79-01-6		nt	>480
Trifluoroacetic Acid	76-05-1		nt	>480
Trichlorovinylsilane	75-94-5		nt	nt
Vinyl Acetate	108-05-4		nt	>480
Vinyl Chloride	75-01-4		nt	>480
Xylene	1330-20-7		nt	>480

■ The chemicals marked above are from the EN 6529 Annex A2 and intends to provide a broad spectrum of chemical types if general chemical suit assessment



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