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# 4540+ Technical Data Sheet

## 3M™ Protective Coverall 4540+

### Description

The 3M™ Protective Coverall 4540+ is designed to help protect against certain light liquid splashes (Type 6) and hazardous dusts (Type 5).

The key features include:

- Constructed of a low-linting, non-woven, laminated microporous material with anti-static coating on both sides
- Knit cuffs with elasticized waist and ankles for increased comfort and freedom of movement
- Three panel hood design for compatibility with complementary PPE
- Two-way zipper with sealable storm flap
- Reinforced gusset adds extra durability
- Breathable back panel to help improve air ventilation and reduce heat build-up

### Materials

- Suit: Polypropylene/Polyethylene Laminate Film, White
- Back Panel: SMMMS Polypropylene, Blue
- Zipper: Nylon on Polyester Braid
- Elastic: Neoprene Rubber
- Cuffs: Polyester
- Thread: Polyester
- Basis Weight: 43 grams/m<sup>2</sup>

This product does not contain components made from natural rubber latex.

### Approvals

CE approved under PPE Directive (89/686/ECC), Category III.

Article 10 Certification: BTTG Testing & Certification Ltd. Notified Body Number: 0338. Article 11B Supervision: SGS United Kingdom, LTD. Notified Body Number: 0120.

### Comfort and Protection

	Liquid Protection	Type 6 (EN 13034). Whole suit reduced spray test (EN ISO 17491-4:2008)*
	Dust Protection	Type 5 (EN ISO 13982-1:2004). Inward Leakage results: $L_{min,82/90} < 30\%$ ; $L_{S,8/10} < 15\%$ .
	Anti-static	Anti-static coating on both sides (EN 1149-1:2006)**
	Nuclear	Radioactive particulates (EN 1073-2:2002), Class 1***. Does not offer protection against radiation.

\* In the whole suit test, liquid spray is applied to the subject for 1 minute. During this time the subject moves gently and is rotated through 360°. A total of 1.88 liters is sprayed from four nozzles. The clothing is allowed to drain for 2 minutes and then the absorbent coverall is inspected for stains which are compared to a calibration stain. Requirement: Passes when the stained area inside is smaller than 3 times the calibration stain area.

\*\* All apparel must be grounded for anti-static treatment to be effective. Electrostatic propensity may decrease with wearing time and/or severe conditions.

\*\*\* Except puncture resistance.

### Applications and Performance

Non-Hazardous Particulates	Yes	Hazardous Liquid Splash	No*
Non-Hazardous Liquid Splash	Yes	Hazardous Liquid Spray	No
Hazardous Dusts and Fibers	Yes	Organic Solvents	Contact 3M for chemical compatibility data
Liquid Continuous Contact/Immersion	No	Acids/Alkalies	Yes, if chemical is compatible with suit material*
Gases and Vapors	No		

\* Contact 3M for additional chemical penetration and repellency data. Note that breathable back panel has lower chemical resistance than the laminated white material.

### Typical Applications

Typical applications may include pesticide application, asbestos and lead abatement, coal dust in power plants, metal polishing, light-duty building cleaning, machine or vehicle maintenance, paint spraying, pharmaceutical, general industrial clean-up, insulation laying, general powder handling and food processing.

In all cases a risk assessment should be carried out. Users must be trained and have read all *User Instructions*. Use limitations and performance data should be considered to ascertain the protection required. If in doubt, contact a safety professional.

### Performance

The table below shows the performance of this product when tested under laboratory conditions. Please note that the tests may not reflect the reality of use and do not account for factors such as excessive heat and mechanical wear.

Test	Standard	Result	Standard*	Class**/Result
Abrasion	ASTM D4157 Cycles to Rupture	900	EN 530	Class 1
Flex Cracking			ISO 7854	Class 4
Tear Resistance Trapezoidal	ASTM D5733 (warp direction/ fill direction)	15 lbf / 6 lbf	ISO 9073-4	Class 1
Tensile Strength	ASTM D751, Section 11, Procedure A (longitude/traverse)	13 lbs / 21 lbs	ISO 13934-1	Class 1
Puncture Resistance	ASTM D2582 (MD/CD)	37N / 24N	EN 863	Class 1
Bursting Resistance	ASTM D751, Section 18	90N	ISO 13938-1	Class 1
Resistance to Ignition	CPSC 16 CFR PT 1610	Class 1	EN 13274-4	Pass
Seam Strength	ASTM D751, Section 66 (Peak Load/Seam Strength)	13 lbf / 6 lbf/in	EN ISO 13935-2	Class 1
Hydrostatic Resistance	ASTM D751, Procedure B	1088 mm		
Repellency to Liquids*** – 30% H <sub>2</sub> SO <sub>4</sub>			EN ISO 6530	Class 3 of 3
Liquid Penetration Resistance*** – 30% H <sub>2</sub> SO <sub>5</sub>			EN ISO 6530	Class 3 of 3
Repellency to Liquids*** – 10% NaOH			EN ISO 6530	Class 3 of 3
Liquid Penetration Resistance*** – 10% NaOH			EN ISO 6530	Class 3 of 3
Anti-static Coating on Both Sides			EN 1149-1:2006	Pass
Radioactive Particulates			EN 1073-2	Class 1 of 3

\* The standards EN 13034:2005 and EN ISO 13982-1:2004, and EN 1073-2:2002 define performance classes.

\*\* The maximum Class is 6 unless otherwise noted.

\*\*\* The European Standard EN ISO 6530 measures liquid penetration through a fabric and liquid repellency by a fabric. The test simulates exposure to small amounts of chemicals (10 ml) for 1 minute duration only. The penetration index refers to the percentage of the original quantity which penetrates the fabric within 1 minute (in a detector beaker) as a percentage of the original quantity.



## Use Limitations

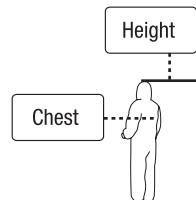
Do not use for:

- Contact with heavy oils, sparks or flames, or combustible liquids
- Exposure situations resulting in spray or liquid buildup on the suit
- Environments with high mechanical risks (abrasions, tears, cuts)
- Environments with exposure to hazardous substances beyond CE Type 5/6 certification
- Environments with conditions of excessive heat

## Sizing

An appropriate size garment should be selected to allow sufficient movement for the task. Meets ANSI 101-1996 (R2008) sizing guidelines.

Height		Chest	
M	66 – 69 in	167 – 176 cm	36 – 39 in
L	69 – 71 in	174 – 181 cm	39 – 43 in
XL	70 – 74 in	179 – 187 cm	43 – 45 in
XXL	73 – 76 in	186 – 194 cm	45 – 49 in
3XL	76 – 78 in	194 – 200 cm	49 – 52 in
4XL	78 – 81 in	200 – 206 cm	52 – 55 in
			132 – 140 cm

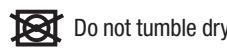


## Storage and Disposal

- Store in dry, clean conditions in original packaging
- Store away from direct sunlight, sources of high temperature, and solvent vapors
- Store within the temperature range -20°C to +25°C (-4°F to +68°F) and with relative humidity below 80%
- Shelf life is three years from date of manufacture when stored as stated above
- Replace garments if damaged, heavily contaminated or in accordance with local work practice
- Handle and dispose of contaminated garments with care and in accordance with national regulations



Limited Use



Do not tumble dry



Do not wash



Do not dry-clean



Do not bleach



Flammable — keep away from sparks or flames



Do not iron

Product must never be altered or modified.

For more information on 3M products and services please contact 3M.

### Important Notice

This guide is only an outline. It should not be used as the only means for selecting protective clothing. Before using any protective clothing, the wearer must read and understand the user instructions for each product. Specific country legislation must be observed. If in doubt, contact a safety professional. Sections of the most appropriate PPE will depend on the particular situation and should only be made by a competent person knowledgeable of the actual working conditions and the limitations of PPE.

Final determination as to the suitability of these products for a particular situation is the user's responsibility. This information is subject to revision at any time. Always read and follow all *User Instructions* supplied with your 3M™ Protective Coveralls in order to ensure correct operation. If you have questions contact 3M Technical Service.

**WARRANTY: 3M will replace or refund the purchase price of any Occupational Health and Environmental Safety Division (OH&ESD) product found to be defective in material, manufacture, or not in conformance with any express warranty. This warranty is exclusive and is in lieu of any implied warranty of merchantability or fitness for a particular purpose.**

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