# 4570 Technical Data Sheet

## 3M™ Protective Coverall 4570

The 3M™ Protective Coverall 4570 range of coveralls are designed to help protect against hazardous dusts (Type 5), light liquid splashes (Type 6), low pressure liquid sprays (Type 4) and high pressure liquid jets (Type 3).

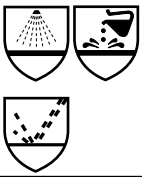
## Key Features

- Advanced film technology
- Soft material reducing noise from movement
- Excellent levels of chemical hold out and mechanical strength
- Certified to offer protection against radioactive particulates (EN 1073-2) and infective agents (EN 14126).
- Anti-static treated (inside only) to EN 1149
- Elastic waist is adhered with glue to minimise potential entry points
- Elasticised wrists and ankles for convenience and freedom of movement.
- Thumb loops for secure fit during overhead work
- Three-panel hood design for a better fit and compatibility with other PPE
- Chin Flap with easy grab sealable tape for ease of use and secure fit
- Two integrated storm-flaps combined with double colour-coded zip to create a double seal for added convenience and extra protection.
- Large ring-pull zippers for easy donning and doffing when wearing gloves
- Seams are taped with a multi layer co-extruded clear tape which offers a discreet finish and a consistent seal and barrier to hazardous dusts and high pressure liquid jets

## Approvals

CE approved under PPE Directive (89/686/ECC), Category III
CE Certificate Issue: BTTG Testing and Certification Limited, UK.
Notified Body Number: 0338
Article 11B Supervision: SGS United Kingdom Limited, UK
Notified Body Number: 0120

## Comfort and Protection

| | | |
|---|---|---|
|  | **Liquid Protection** | Type 3 & Type 4 (EN 14605) and Type 6 (EN 13034)<br>Whole suit full and reduced spray test (EN ISO 17491-3) |
|  | **Dust Protection** | Type 5 (EN ISO 13982-1)<br>Inward Leakage results:<br>Ljmn,82/90 < 30 %;<br>LS,8/10 < 15 %. |
|  | **Anti-static** | Anti-static coating<br>(EN 1149-5:2008)* |
|  | **Nuclear** | Radioactive particulates<br>(EN 1073-2:2002), Class 2 |
|  | **Biohazard** | Tested according to<br>EN 14126:2003<br>(Type 3-B, Type 4-B, Type 5-B, Type 6-B) |

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

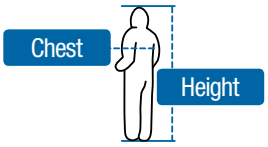
## Materials

| | |
|---|---|
| **Suit** | Polypropylene / Polyethylene |
| **Zipper** | Metal / Nylon / Polyester Braid |
| **Elastic** | Synthetic Rubber (non-latex) |
| **Seam Tape** | Polyetheylene |
| **Thread** | Polyester / Cotton |

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

## Sizing

An appropriate size garment should be selected to allow sufficient movement for the task.




| | Height | | Chest | |
|---|---|---|---|---|
| **S** | 64 – 67 in | 164 – 170 cm | 33 – 36 in | 84 – 92 cm |
| **M** | 66 – 69 in | 167 – 176 cm | 36 – 39 in | 92 – 100 cm |
| **L** | 69 – 71 in | 174 – 181 cm | 39 – 43 in | 100 – 108 cm |
| **XL** | 70 – 74 in | 179 – 187 cm | 43 – 45 in | 108 – 115 cm |
| **2XL** | 73 – 76 in | 186 – 194 cm | 45 – 49 in | 115 – 124 cm |
| **3XL** | 76 – 78 in | 194 – 200 cm | 49 – 52 in | 124 – 132 cm |
| **4XL** | 78 – 81 in | 200 – 206 cm | 52 – 55 in | 132 – 140 cm |

## Use Limitations

Do not use for:

- Contact with heavy oils, sparks or flame, or combustible liquids
- Environments with high mechanical risks (abrasions, tears, cuts)
- Environments with exposure to hazardous substances beyond CE Type 3/4/5/6 certification
- Environments with conditions of excessive heat

## Limited Use


Do not wash


Do not dry clean


Do not bleach


Flammable - keep away from sparks or flames


Do not iron


Single use - do not re-use


Do not tumble dry

Product must never be altered or modified.

## Storage and Disposal

- Store in dry, clean conditions in original packaging
- Store away from direct sunlight, sources of high temperature, and solvent vapours
- Store within the temperature range -20°C to +25°C (-4°F to +77°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

## Applications and Performance

| | |
|---|---|
| **Non-Hazardous Particulates** | Yes |
| **Non-Hazardous Liquid Splash** | Yes |
| **Non-Hazardous Liquid Spray** | Yes |
| **Liquid Continuous Contact** | Yes, if chemical is compatible with suit material† |
| **Gases and Vapours** | No |
| **Hazardous Dusts & Fibres** | Yes |
| **Hazardous Liquid Splash** | Yes, if chemical is compatible with suit material† |
| **Hazardous Liquid Spray** | Yes, if chemical is compatible with suit material† |
| **Acids/Alkalis** | Yes, if chemical is compatible with suit material† |
| **Organic Solvents** | Yes, if chemical is compatible with suit material† |

† For additional chemical penetration and permeation data, please call your local 3M Technical Service Representative.

Typical applications may include: chemical handling, environmental clean-up, hazardous waste remediation, agriculture

In all cases, a risk assessment should be carried out. Always read product user information. Use limitations and performance data should be considered to ascertain the protection required. If in doubt, contact a safety professional.

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

## Technical Data

The following tables show 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.

The data listed in the tables below is based on one sample only.

| Test | Standard/Test Method | Class/ Result |
|---|---|---|
| Abrasion resistance (visual assessment) | EN 530:1994 | Class 5 |
| Flex cracking (visual assessment) | ISO 7854:1995 | Class 2 |
| Tear resistance | ISO 9073-4 :1997 | Class 2 |
| Tensile strength | EN ISO 13934-1:1999 | Class 1 |
| Puncture resistance | EN 863:1995 | Class 2 |
| Burst resistance | EN ISO 13938-1 | Class 2 |
| Resistance to ignition | EN 13274-4:2001 | Pass |
| Resistance to blocking | EN 25978:1990 | No Blocking |
| Seam strength | EN ISO 13935-2:1999 | Class 3 |
| Repellency to liquids – 30% $H_2SO_4$ | EN ISO 6530:2005 | Class 3 of 3 |
| Liquid penetration resistance – 30% $H_2SO_5$ | EN ISO 6530:2005 | Class 3 of 3 |
| Repellency to liquids – 10% NaOH | EN ISO 6530:2005 | Class 3 of 3 |
| Liquid penetration resistance – 10% NaOH | EN ISO 6530:2005 | Class 3 of 3 |
| Anti-static coating on inside only | EN 1149-1:2006 | Pass |
| Radioactive particulates | EN 1073-2:2002 | TIL Class 2/3 |
| Biological protection | EN 14126:2003 | Pass |
| Synthetic blood penetration resistance | ISO 16603:2004 | Class 6 of 6 |
| Blood-borne pathogen penetration resistance | ISO 16604:2004 | Class 6 of 6 |
| Contaminated solid particle penetration resistance | ISO 22612:2005 | Class 3 of 3 |
| Contaminated liquid aerosol penetration resistance | ISO/DIS 22611:2003 | Class 3 of 3 |
| Wet bacteria penetration resistance | EN ISO 22610:2006 | Class 6 of 6 |

The standards EN 13034:2005, EN14325 and EN ISO 13982-1:2004, and EN 1073-2:2002 define performance classes.

** The maximum Class is 6 unless otherwise noted.

## Permeation Test Results

| Chemical | CAS Number | Fabric | | Seam | |
|---|---|---|---|---|---|
| | | EN374-3 classified to EN14325 | ASTM F739 classified to ANSI103 | EN374-3 classified to EN14325 | ASTM F739 classified to ANSI103 |
| | | 1ug/cm² | 0.1ug/cm² | 1ug/cm² | 0.1ug/cm² |
| 2-(2-aminoethoxy) ethanol 98% | 929-06-6 | Class 6 | Not Tested | Class 6 | >480 (H) |
| 2,4-Difluoroanaline 99% | 367-25-9 | Class 3 | Not Tested | Class 1 | 0 mins |
| 2-Chloroethanol 99% | 107-07-3 | Class 6 | Not Tested | Class 6 | 0 mins |
| 2-Ethylhexanoic Acid 99% | 149-57-5 | Class 6 | Not Tested | Class 6 | average 102 mins (L) |
| Acetic Acid 30% (ethanoic acid) | 64-19-7 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Ammonium Hydroxide 30% | 1336-21-6 | Class 6 | Not Tested | Class 1 | 0 mins |
| Aniline 99% (phenylamine, aminobenzene) | 62-53-3 | Class 5 | Not Tested | Class 5 | average 11 mins |
| Dimethyl Sulphate 98% | 77-78-1 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Dimethylformamide (DMF) | 68-12-2 | Class 6 | >480 (H) | Class 6 | average 54 mins (L) |
| Ethylene Glycol 99.5% | 107-21-1 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Formaldehyde 10% | 50-00-00 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Formic Acid 96% | 64-18-6 | Class 6 | Not Tested | Class 6 | average 16 mins |
| Hydrazine Monohydrate 98% | 7803-57-8 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Hydrobromic Acid 48% | 10035-10-6 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Hydrochloric Acid 37% | 7647-01-0 | Class 4 | Not Tested | Class 4 | average 36 mins (L) |
| Hydrofluoric Acid (71-75wt%) | 7664-39-3 | Class 4 | Not Tested | Class 5 | average 132 mins (M) |
| Hydrofluoric Acid 48% | 7664-39-3 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Isopropyl alcohol 99.5% | 67-63-07 | Class 6 | Not Tested | Class 6 | average 9 mins |
| Mercuric Chloride sat. soln. | 7487-94-7 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Mercury | 92786-62-4 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Methanol | 67-56-1 | Class 2 | 0 mins | Class 6 | 0 mins |
| Nitric Acid 70% | 7694-37-2 | Class 6 | Not Tested | Class 6 | average 7 hours (M) |
| Phenol 85% soln. | 108-95-2 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Phosphoric Acid 85% | 7664-38-2 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Potassium Chromate (saturated soln.) | 7789-00-6 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Sodium Bisulphate 40% soln. | 7681-38-1 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Sodium Fluoride Saturated soln. | 7681-49-4 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Sodium Hydroxide 40wt% | 1310-73-2 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Sodium Hypochlorite (13% chlorine) | 7681-52-9 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Sulfuric Acid 30wt% | 7664-93-9 | Class 6 | Not Tested | Class 6 | >480 (H) |
| Sulfuric Acid 93.1 wt% | 7664-93-9 | Class 6 | >480 (H) | Class 6 | >480 (H) |
| Zinc Bromide Saturated soln. | 7699-45-8 | Class 6 | Not Tested | Class 6 | >480 (H) |

Data given here is: for information only; not certified product claims; based on one sample only; based on lab conditions; subject to change. Product supplied may show variation. Breakthrough times are not safe wear times. Permeation rates increase with temperature. Permeation testing does not assess: degradation; mechanical defects; product design/fit.

| EN14325 Classification | | ANSI 103 Classification | |
|---|---|---|---|
| Class 6 | >480 mins | H | >480 mins |
| Class 5 | >240 mins | M | >120 mins |
| Class 4 | >120 mins | L | >30 mins |
| Class 3 | >60 mins | | |
| Class 2 | >30 mins | | |
| Class 1 | >10 mins | | |

Test methods referenced above are EN 374 and ASTM F-739. EN 374 reports the breakthrough detection time at a permeation rate of 1.0 µg/cm$^2$ and refers to the EN 14325 classification in the table above. ASTM F-739 reports the normalised breakthrough detection time at a permeation rate of 0.1 µg/cm$^2$ and refers to the ANSI 103 classification stated in the table above. Both normalised permeation rates of 0.1 µg/cm$^2$ and 1.0 µg/cm$^2$ are reported in EN ISO 6529

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## 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. Selection 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 employer'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.

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