



## Model IC 729 S WH 00

# Tyvek® IsoClean®

DuPont™ Tyvek® IsoClean® bouffant model IC 729S00. Not clean-processed and not sterilized. Serged seams. Elastic headband. White.

Name Description

Full Part Number IC0729SWH00

Fabric/Materials Tyvek® 500

Design Bouffant with elastic headband

Seam No seams

White Color

Sizes 0

Quantity/Box 250 per box, bulked packed. 2 polyethylene liners. Cardboard box.

## **FEATURES & PRODUCT DETAILS**

DuPont™ Tyvek® IsoClean® bouffant, model IC729S00. Available in white and in one size. Not clean-processed and not sterilized. Elastic headband.

Tyvek® IsoClean® delivers an ideal balance of protection, durability and comfort. Made of high density polyethylene using a patented flash spinning process Tyvek® IsoClean® provides an inherent barrier to particles, microorganisms and non-hazardous light liquid splash.

Tyvek® IsoClean® (option codes 0B, 00 and BH) garments and accessories are neither clean-processed nor gamma-irradiated but manufactured in a controlled environment.

Garments and accessories made of Tyvek® IsoClean® are typically used in cleanrooms within the biotech, pharmaceutical, medical device manufacturing, food processing, cosmetics industry as well as in other critical or controlled environments.

- Certified according to Regulation (EU) 2016/425.
- Partial body chemical protective clothing, Category III, Type PB [6-B].
- EN 14126 (barrier to infective agents)
- Suitable for use in GMP class C/D (ISO Class 6-9) clean rooms
- Antistatic treatment (EN 1149-1) on both sides; see footnotes.

# **Physical Properties**



Data relating to mechanical performance of the fabrics used in DuPont chemical protective clothing, listed for the selected garment according to the test methods and relevant European standard, if applicable. Such properties, including abrasion and flex-cracking resistance, tensile strength and puncture resistance can help in the assessment of protective performance.

| Property   | Test Method          | Typical Result              | EN               |
|--|----------------------|-----------------------------|------------------|
| Abrasion Resistance <sup>7</sup>                   | EN 530 Method 2      | >100 cycles                 | 2/6 <sup>1</sup> |
| Basis Weight                                       | DIN EN ISO 536       | 41.5 g/m <sup>2</sup>       | N/A              |
| Colour   | N/A.                 | White                       | N/A              |
| Exposure to high Temperature                       | N/A.                 | Melting point ~135 °C       | N/A              |
| Flex Cracking Resistance 7                         | EN ISO 7854 Method B | >100000 cycles              | 6/6 <sup>1</sup> |
| Puncture Resistance                                | EN 863               | >10 N                       | 2/6 <sup>1</sup> |
| Resistance to water penetration                    | AATCC 127            | >10 kPa                     | N/A              |
| Surface Resistance at RH 25%, inside <sup>7</sup>  | EN 1149-1            | < 2,5 • 10 <sup>9</sup> Ohm | N/A              |
| Surface Resistance at RH 25%, outside <sup>7</sup> | EN 1149-1            | < 2,5 • 10 <sup>9</sup> Ohm | N/A              |
| Tensile Strength (MD)                              | DIN EN ISO 13934-1   | >60 N                       | 2/6 1            |
| Tensile Strength (XD)                              | DIN EN ISO 13934-1   | >60 N                       | 2/6 <sup>1</sup> |
| Trapezoidal Tear Resistance (MD)                   | EN ISO 9073-4        | >10 N                       | 1/6 <sup>1</sup> |
| Trapezoidal Tear Resistance (XD)                   | EN ISO 9073-4        | >10 N                       | 1/6 1            |

<sup>1</sup> According to EN 14325 2 According to EN 14126 3 According to EN 1073-2 4 According to EN 14116 12

According to EN 11612 5 Front Tyvek ® / Back 6 Based on test according to ASTM D-572 7 See Instructions for Use for further information, limitations and warnings > Larger than < Smaller than <= Smaller than or equal to N/A Not Applicable STD DEV Standard Deviation

# COMFORT



The comfort of a protective garment during use is largely determined by its weight, its permeability to vapour and air (breathability) and insulating properties. Data on these attributes is provided according to test method and, as with other data, can be compared by garment.

| Property                         | Test<br>Method | Typical<br>Result | EN  |
|----------------------------------|----------------|-------------------|-----|
| Air Permeability (Gurley method) | TAPPI T460     | < 45 s            | N/A |

2 According to EN 14126 5 Front Tyvek ® / Back > Larger than < Smaller than <= Smaller than or equal to N/A Not Applicable

# **BIOLOGICAL BARRIER**



Detailed information on the protective performance (resistance to penetration) of DuPont clothing when exposed to biologically contaminated aerosols, liquids and dusts as well as blood, body fluids and blood-borne pathogens. Sorted by relevant European standard.

| Property  | Test Method              | Typical<br>Result    | EN               |
|---|--------------------------|----------------------|------------------|
| Resistance to Penetration by Biologically Contaminated Aerosols                 | ISO/DIS 22611            | 1 < log ratio<br>< 3 | 1/3 <sup>2</sup> |
| Resistance to Penetration by Blood and Body Fluids using Synthetic Blood        | ISO 16603                | 3,5 kPa              | 3/6 <sup>2</sup> |
| Resistance to Penetration by Blood-borne Pathogens using Bacteriophage Phi-X174 | ISO 16604<br>Procedure C | 1,75 kPa             | 2/6 <sup>2</sup> |
| Resistance to Penetration by Contaminated Liquids                               | EN ISO 22610             | <u>&lt;</u> 15 min   | 1/6 <sup>2</sup> |
| Resistance to Penetration by Contaminated Solid Particles                       | ISO 22612                | 2 < log cfu < 3      | 1/3 <sup>2</sup> |

2 According to EN 14126 > Larger than < Smaller than <= Smaller than or equal to

## PENETRATION AND REPELLENCY



A specific test method, EN ISO 6530, is used to measure the indexes of penetration, absorption and repellency of protective clothing material exposed to liquid chemicals. Results listed here reflect the penetration resistance and repellency of DuPont fabrics to 30% sulphuric acid and 10% sodium hydroxide.

| Property   | Test<br>Method | Typical<br>Result | EN               |
|--|----------------|-------------------|------------------|
| Repellency to Liquids, Sodium Hydroxide (10%)                | EN ISO 6530    | >95 %             | 3/3 1            |
| Repellency to Liquids, Sulphuric Acid (30%)                  | EN ISO 6530    | >95 %             | 3/3 1            |
| Resistance to Penetration by Liquids, Sodium Hydroxide (10%) | EN ISO 6530    | <1 %              | 3/3 1            |
| Resistance to Penetration by Liquids, Sulphuric Acid (30%)   | EN ISO 6530    | <1 %              | 3/3 <sup>1</sup> |

1 According to EN 14325 > Larger than < Smaller than <= Smaller than or equal to

#### **GARMENT PERFORMANCE**



Information relating to the protective performance of a garment according to European standards where applicable. Includes important characteristics such as protection against radioactive contamination, seam strength and shelf life. Inward leakage and resistance to penetration by liquids, according to the relevant Type classification, are also detailed.

| Property                           | Test Method    | Typical<br>Result | EN               |
|------------------------------------|----------------|-------------------|------------------|
| Seam Strength                      | EN ISO 13935-2 | >30 N             | 1/6 <sup>1</sup> |
| Type PB 6: Partial Body Protection | EN 13034       | Pass              | N/A              |

<sup>1</sup> According to EN 14325 3 According to EN 1073-2 12 According to EN 11612 13 According to EN 11611 5 Front Tyvek ® / Back 6 Based on test according to ASTM D-572 7 See Instructions for Use for further information, limitations and warnings 11 Based on the average of 10 suits, 3 activities, 3 probes > Larger than < Smaller than or equal to N/A Not Applicable \* Based on lowest single value

#### WARNING

- The information provided herein corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials or additives or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights.
- The intended use for Tyvek® IsoClean Accessories, that are not CE certified or certified as PPE Category I, does not
  include applications that may cause very serious consequences such as irreversible damage to health or death. The user
  should make the risk assessment to determine the protection required.

## **PERMEATION DATA**



Permeation is the process by which a solid, liquid or gaseouses chemical moves through a protective clothing fabric at a molecular level. Permeation data assist in the selection of the most appropriate protective garment for a particular application and in the estimation of how long it can be safely worn. Standardised test methods are used to determine the resistance of DuPont materials to permeation, the results of which can be selected according to a specific chemical, chemical class or fabric.

| Hazard / Chemical Name                                      | Physical<br>State | CAS            | BT<br>Act | BT<br>0.1 | BT<br>1.0 | EN | SSPR        | MDPR   | Cum<br>480 | Time<br>150 | ISO |
|---|-------------------|----------------|-----------|-----------|-----------|----|-------------|--------|------------|-------------|-----|
| Acetic acid (30%)   | Liquid            | 64-19-7        | imm       | imm       | imm       |    | 13.5        | 0.001  |            |             |     |
| Ammonium hydroxide (16%)                                    | Liquid            | 1336-21-<br>6  | imm       | imm       | imm       |    | 20.3        | 0.005  |            |             |     |
| Ammonium hydroxide (28% - 30%)                              | Liquid            | 1336-21-<br>6  | imm       | imm       | imm       |    | 16.7        | 0.014  |            |             |     |
| Carboplatin (10 mg/ml)                                      | Liquid            | 41575-<br>94-4 | >240      | >240      | >240      | 5  | <0.<br>001  | 0.001  |            |             |     |
| Carmustine (3.3 mg/ml, 10 % Ethanol)                        | Liquid            | 154-93-8       | imm       | imm       | >240      | 5  | <0.3        | 0.001  |            |             |     |
| Caustic ammonia (16%)                                       | Liquid            | 1336-21-<br>6  | imm       | imm       | imm       |    | 20.3        | 0.005  |            |             |     |
| Caustic ammonia (28% - 30%)                                 | Liquid            | 1336-21-<br>6  | imm       | imm       | imm       |    | 16.7        | 0.014  |            |             |     |
| Caustic soda (10%)  | Liquid            | 1310-73-<br>2  | >240      | >480      | >480      | 6  | <0.<br>005  | 0.005  |            |             |     |
| Caustic soda (40%)  | Liquid            | 1310-73-<br>2  | imm       | >30       | >240      | 5  | <0.<br>005  | 0.005  |            |             |     |
| Caustic soda (50%)  | Liquid            | 1310-73-<br>2  | imm       | >30       | >240      | 5  | 0.85        | 0.01   |            |             |     |
| Caustic soda (>95%, solid)                                  | Solid             | 1310-73-<br>2  | >480      | >480      | >480      | 6  | <0.01       | 0.01   |            |             |     |
| Cisplatin (1 mg/ml)   | Liquid            | 15663-<br>27-1 | >240      | >240      | >240      | 5  | <0.<br>0002 | 0.0002 |            |             |     |
| Cyclo phosphamide (20 mg/ml)                                | Liquid            | 50-18-0        | >240      | >240      | >240      | 5  | <0.<br>002  | 0.002  |            |             |     |
| Dimethyl sulfate  | Liquid            | 77-78-1        | imm       | imm       | imm       |    | >160        | 0.02   |            |             |     |
| Doxorubicin HCl (2 mg/ml)                                   | Liquid            | 25136-<br>40-9 | >240      | >240      | >240      | 5  | <0.<br>003  | 0.003  |            |             |     |
| Ethane 1,2-diol   | Liquid            | 107-21-1       | imm       | imm       | imm       |    | 6.6         | 0.002  |            |             |     |
| Ethylene glycol   | Liquid            | 107-21-1       | imm       | imm       | imm       |    | 6.6         | 0.002  |            |             |     |
| Etoposide (Toposar®, Teva) (20 mg/ml, 33.2 % (v/v) Ethanol) | Liquid            | 33419-<br>42-0 | >240      | >240      | >240      | 5  | <0.01       | <0.01  |            |             |     |
| Fluorouracil, 5- (50 mg/ml)                                 | Liquid            | 51-21-8        | imm       | imm       | >30       | 2  | na          | 0.001  |            |             |     |
| Formic acid (30%)   | Liquid            | 64-18-6        | imm       | imm       | imm       |    | nm          | 0.001  |            |             |     |

| Ganciclovir (3 mg/ml)   | Liquid | 82410-<br>32-0 | >240 | >240 | >240 | 5 | <0.<br>005 | 0.005 |      |   |
|-------------------------|--------|----------------|------|------|------|---|------------|-------|------|---|
| Gemcitabine (38 mg/ml)  | Liquid | 95058-<br>81-4 | imm  | >60  | >240 | 5 | <0.4       | 0.005 |      |   |
| Glycerine               | Liquid | 56-81-5        | >240 | >480 | >480 | 6 | 0.03       | 0.01  |      |   |
| Glycerol                | Liquid | 56-81-5        | >240 | >480 | >480 | 6 | 0.03       | 0.01  |      |   |
| Glycol alcohol          | Liquid | 107-21-1       | imm  | imm  | imm  |   | 6.6        | 0.002 |      |   |
| Hydrochloric acid (16%) | Liquid | 7647-01-<br>0  | imm  | imm  | imm  |   | na         | 0.05  |      |   |
| Hydrochloric acid (32%) | Liquid | 7647-01-<br>0  | imm  | imm  | imm  |   | na         | 0.05  |      |   |
| Hydrogen peroxide (10%) | Liquid | 7722-84-<br>1  | >10  | >10  | >480 | 6 | <0.01      | 0.01  |      |   |
| Hydrogen peroxide (30%) | Liquid | 7722-84-<br>1  | imm  | imm  | imm  |   | >0.11      | 0.04  |      |   |
| Ifosfamide (50 mg/ml)   | Liquid | 3778-73-<br>2  | imm  | imm  | >240 | 5 | <0.5       | 0.003 | >480 | 6 |

| Hazard / Chemical Name                               | Physical<br>State | CAS             | BT<br>Act | BT<br>0.1 | BT<br>1.0 | EN | SSPR        | MDPR    | Cum<br>480 | Time<br>150 | ISO |
|--|-------------------|-----------------|-----------|-----------|-----------|----|-------------|---------|------------|-------------|-----|
| Irinotecan (20 mg/ml)                                | Liquid            | 100286-<br>90-6 | imm       | >240      | >240      | 5  | <0.1        | 0.0028  |            |             |     |
| Methotrexate (25 mg/ml, 0.1 N NaOH)                  | Liquid            | 59-05-2         | >240      | >240      | >240      | 5  | <0.001      | 0.001   |            |             |     |
| Mitomycin (0.5 mg/ml)                                | Liquid            | 50-07-7         | >240      | >240      | >240      | 5  | <0.<br>0009 | 0.0009  |            |             |     |
| Nicotine (9 mg/ml)                                   | Liquid            | 54-11-5         | >480      | >480      | >480      | 6  | <0.08       | 0.08    |            |             |     |
| Nitric acid (10%)                                    | Liquid            | 7697-37-2       | >60       | >120      | >480      | 6  | na          | 0.05    |            | >477        | 5   |
| Nitric acid (30%)                                    | Liquid            | 7697-37-2       | imm       | imm       | imm       |    | 4.6         | 0.001   |            |             |     |
| Oxaliplatin (5 mg/ml)                                | Liquid            | 63121-00-<br>6  | imm       | imm       | imm       |    | na          | 0.006   |            |             |     |
| Paclitaxel (Hospira) (6 mg/ml, 49.7 % (v/v) Ethanol) | Liquid            | 33069-62-<br>4  | >240      | >240      | >240      | 5  | <0.01       | <0.01   |            |             |     |
| Phosphoric acid (50%)                                | Liquid            | 7664-38-2       | >480      | >480      | >480      | 6  | <0.05       | 0.05    |            |             |     |
| Potassium chromate (sat)                             | Liquid            | 7789-00-6       | >480      | >480      | >480      | 6  | <0.005      | 0.005   |            |             |     |
| Potassium hydroxide (40%)                            | Liquid            | 1310-58-3       | imm       | imm       | >30       | 2  | 0.7         | 0.001   |            |             |     |
| Propane -1,2,3-triol                                 | Liquid            | 56-81-5         | >240      | >480      | >480      | 6  | 0.03        | 0.01    |            |             |     |
| Sodium acetate (sat)                                 | Liquid            | 127-09-3        | imm       | >480      | >480      | 6  | <0.1        | 0.05    |            | >480        | 6   |
| Sodium chloride (9 g/l)                              | Liquid            | 7647-14-5       | >240      | >240      | >240      | 5  | <0.02       | 0.02    |            |             |     |
| Sodium hydroxide (10%)                               | Liquid            | 1310-73-2       | >240      | >480      | >480      | 6  | <0.005      | 0.005   |            |             |     |
| Sodium hydroxide (40%)                               | Liquid            | 1310-73-2       | imm       | >30       | >240      | 5  | <0.005      | 0.005   |            |             |     |
| Sodium hydroxide (50%)                               | Liquid            | 1310-73-2       | imm       | >30       | >240      | 5  | 0.85        | 0.01    |            |             |     |
| Sodium hydroxide (>95%, solid)                       | Solid             | 1310-73-2       | >480      | >480      | >480      | 6  | <0.01       | 0.01    |            |             |     |
| Sodium hypochlorite (10-15 % active chlorine)        | Liquid            | 7681-52-9       | >240      | >240      | >480      | 6  | <0.6        | 0.05    |            |             |     |
| Sodium hypochlorite (5.25-6%)                        | Liquid            | 7681-52-9       | >480      | >480      | >480      | 6  | <0.025      | 0.025   |            |             |     |
| Sulfuric acid (18%)                                  | Liquid            | 7664-93-9       | >240      | >240      | >480      | 6  | <0.05       | 0.05    |            |             |     |
| Sulfuric acid (30%)                                  | Liquid            | 7664-93-9       | >10       | >240      | >240      | 5  | <0.05       | 0.05    |            |             |     |
| Sulfuric acid (50%)                                  | Liquid            | 7664-93-9       | imm       | >30       | >60       | 3  | 38          | 0.01    |            |             |     |
| Sulfuric acid dimethyl ester                         | Liquid            | 77-78-1         | imm       | imm       | imm       |    | >160        | 0.02    |            |             |     |
| Thiotepa (10 mg/ml)                                  | Liquid            | 52-24-4         | imm       | imm       | imm       |    | na          | 0.001   |            |             |     |
| Vincristine sulfate (1 mg/ml)                        | Liquid            | 2068-78-2       | >240      | >240      | >240      | 5  | <0.001      | 0.001   |            |             |     |
| Vinorelbine (0.1 mg/ml)                              | Liquid            | 71486-22-<br>1  | >240      | >240      | >240      | 5  | <0.<br>0209 | 0.00209 |            |             |     |

BTAct (Actual) Breakthrough time at MDPR [mins] BT0.1 Normalized breakthrough time at  $0.1 \,\mu\text{g/cm}^2\text{/min}$  [mins] BT1.0 Normalized breakthrough time at  $1.0 \,\mu\text{g/cm}^2\text{/min}$  [mins] EN Classification according to EN 14325 SSPR Steady state permeation rate [ $\mu\text{g/cm}^2\text{/min}$ ] MDPR Minimum detectable permeation rate [ $\mu\text{g/cm}^2\text{/min}$ ] CUM480 Cumulative permeation mass after 480 mins [ $\mu\text{g/cm}^2$ ] Time150 Time to reach cumulative permeation mass of 150  $\mu\text{g/cm}^2$  [mins] ISO Classification according to ISO 16602 CAS Chemical abstracts service registry number min Minute > Larger than

< Smaller than imm Immediate (< 10 min) nm Not tested sat Saturated solution N/A Not Applicable na Not attained GPR grade General purpose reagent grade \* Based on lowest single value 8 Actual breakthrough time; normalized breakthrough time is not available DOT5 Degradation after 5 min DOT30 Degradation after 30 min DOT60 Degradation after 60 min DOT240 Degradation after 240 min BT1383 Normalized breakthrough time at 0.1 µg /cm²/min [mins] acc. ASTM F1383</p>

Important Note.