DuPont Personal Protection
Controlled Environment Apparel Selection Guide

When it comes to working in a broad range of controlled environments, specifiers have many product options from which to select. The process to understand which option matches a given environment can be confusing and taxing. DuPont Personal Protection has tried to help reduce some of that burden by providing a complete line of products and information to help guide specifiers through their selection process.

To get the most out of your cleanroom apparel, it is necessary to understand where each product can be used. To provide a quicker overview of our products and where they are intended for use, we developed the simple guide below. Our goal is to provide the appropriate DuPont product that meets the needs of a given environment or hazard.

DuPont Controlled Environment Garments
DuPont™ IsoClean®, General Environment, ProClean® and Micro-Clean® 2-1-2

	Environments/Hazards	DuPont™ Tyvek® IsoClean® Clean Processed		DuPont™ Tyvek® IsoClean® Bulk		DuPont™ Tyvek® Micro-Clean® 2-1-2		DuPont™ General Environment	DuPont™ ProClean®*	Considerations
		Sterile	Non-Sterile	Sterile	Non-Sterile	Sterile	Non-Sterile	Non-Sterile	Non-Sterile	
Environments	ISO Class 5 Aseptic Cleanrooms (Former FED-STD-209E; Class 100)	●		◐		◐				Tyvek® IsoClean® Sterile garments offer excellent cleanliness, barrier, and sterility assurance.
Environments	ISO Class 6, 7, and 8 Bioburden Control Areas (Former FED-STD-209E; Class 1000, 10,000 and 100,000)	●		●		◐				Tyvek® IsoClean® Sterile garments offer excellent cleanliness, barrier, and SAL.
Environments	ISO Class 6, 7, and 8 Cleanrooms (Former FED-STD-209E; Class 1000, 10,000 and 100,000)		●		●		◐	◐	◐	Tyvek® provides excellent particle barrier and durability and is low linting. Clean processing and bound seams should be considered for more critical environments.
Hazards	Non-hazardous, dry particles	●	●	●	●	●	●	⊙	●*	Tyvek® provides a superior barrier against particles as small as 0.5 microns, even after abrasion. Bound seam garments offer a higher level of protection than serged seam garments.
Hazards	Non-hazardous, light liquid splash	◐	◐	◐	◐			⊙	●*	ProClean® provides an effective barrier against a variety of common non-hazardous liquids.
Hazards	Hazardous powders Notice: DuPont Controlled Environment garments should not be used in potentially explosive or flammable environments.	●	●	●	●					Use bound seam garments when working with hazardous powders.
Hazards	Hazardous liquid splash examples: organic solvents, caustics									Please refer to our Tychem® product line for liquid and vapor chemical protection.
Hazards	Electric arc, industrial fire hazard, welding	Do Not Use								Please refer to Nomex® for flame resistant apparel. Controlled Environment garments are not suitable for fire fighting activities, nor for protection from hot liquids, steam, molten metals, welding, electric arc or thermal radiation.

*Barrier properties may be compromised through use. ● Best ◐ Better ⊙ Good (Blank) Not recommended

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Fabric Performance Features

	Available Sterile	Particle Barrier	Non-Hazardous Liquid Barrier	Comfort	Durability	Static Dissipation†	Particle Shedding	Strengths
DuPont™ Tyvek® IsoClean® clean-processed Flashspun polyolefin	Yes	●	◐	◐	●		●	Best combination of comfort, protection, and durability
DuPont™ Tyvek® IsoClean® bulk Flashspun polyolefin	No	●	◐	◐	●	●	⊙	
DuPont™ Tyvek® Micro-Clean® 2-1-2 Flashspun polyolefin	Yes	●		◐	●	◐	⊙	
General Environment Spunbond meltblown spunbond	No	⊙	⊙	●	◐	◐	⊙	Comfortable, breathable, low cost
DuPont™ ProClean® Microporous Films	No	●*	◐*	⊙	⊙	●	◐	Effective liquid barrier; low cost

* Barrier properties may be compromised through use.
† Nuisance static

● Best ◐ Better ⊙ Good (Blank) Not recommended

Minimum Gowning Recommendations*

	ISO Class 8 (Class 100,000)	ISO Class 7 (Class 10,000)	ISO Class 6 (Class 1,000)	ISO Class 5 (Class 100)	ISO Class 4 (Class 10)
Hair Cover	X	X	X	X	X
Hood				X	X
Beard Cover	X	X	X	X	X
Face Mask				X	X
Frock	X	X			
Coverall			X	X	X
Shoe Covers	X	X			
Boots			X	X	X
Gloves				X	X

* IEST-RP-CC-003.3

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Anyone intending to use this information should first verify that the garment selected is suitable for the intended use. In many cases, seams and closures may provide less barrier than the fabric. If the fabric becomes torn, abraded or punctured, end user should discontinue use of garment to avoid compromising the barrier protection. ***SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, WE MAKE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE AND ASSUME NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION.*** *This information is not intended as a license to operate under or a recommendation to infringe any patent, trademark or technical information of DuPont or others covering any material or its use.* ***WARNINGS:*** *1) DuPont garments and accessories for controlled environments are not flame-resistant and should not be used around heat, flame, sparks or in potentially flammable or explosive environments. 2) Garments made of Tyvek® should have slip-resistant or antislip materials on the outer surface of boots, shoe covers or other garment surfaces in conditions where slipping could occur. 3) In order for any garment ensemble to be static dissipative, it must be able to drain charge buildup through proper ground devices, such as conducting shoes and floors.*

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