

Disposable Protective Clothing

Performance and Selection Guide



Lakeland's MicroMax® NS vs. DuPont's Tyvek®

Although MicroMax® NS is significantly less expensive than Tyvek®, cost should always be secondary to safety.

So how do you make a systematic and defensible choice between the world's two leading Protective Clothing brands? Comparative performance data for a range of exposure types is the only objective way.

Fortunately, comparative performance data are available for each fabric in the user instructions published by each company in accordance with the harmonized CE standards for protective garments, an international standard endorsed by DuPont.

These CE Standards are based upon a system of "Types" according to the type and degree

of the hazard (as shown below). Standardized test methods for each Type then determine what Performance Class a given fabric meets: the better the performance the higher the Class numeric rating.

Harmonized CE Standards for Protective Garments

TYPE 6	TYPE 5	TYPE 4	TYPE 3	TYPE 1
Non-gas tight limited protection against liquid aerosol	Non-gas tight protection against airborne dry particulate chemicals	Non-gas tight protection against liquid chemical splash	Non-gas tight protection against high pressure liquid exposure or splash	Gas-tight protection against chemicals, vapors and toxic particles

The following are the comparative test results for Type 6 Liquid Aerosol and Type 5 Dry Particulate:

Strength /Durability Tests

MicroMax® NS outperforms Tyvek® in five of the nine tests in this category. Tyvek outperforms MicroMax® NS in three, and one is a tie.

Advantage: MicroMax® NS

Physical Property	Test Method	DuPont Tyvek®*	Lakeland MicroMax® NS
Strength / Durability Test		Performance Class Range 1-6, 6 being the highest performing	
Abrasion Resistance	EN 530 (method 2)	2	2
Puncture Resistance	EN 863	2	1
Flex Cracking	ISO 7854/B	6	4
Trapezoidal Tear MD	ISO 9073-4	1	3
Trapezoidal Tear XD	ISO 9073-4	1	2
Tensile Strength (max. MD/XD)	ISO 13934-1	2	1
Antistat	EN 1149-5	Pass	Pass
Seam Strength	EN/ISO 13935-2	> 75 N	89.0 N

Resistance to Liquid Penetration Tests

MicroMax® NS outperforms Tyvek® against two of the four common chemicals for which DuPont publishes data under the harmonized CE standards, and two are a tie.

Advantage: MicroMax® NS

Physical Property	Test Method	DuPont Tyvek®**	Lakeland MicroMax® NS
Resistance to Liquid Penetration and Repellency		Performance Class Range 1-3	
Sulfuric Acid (30%) Penetration/ Repellency	EN/ISO 6530	3/3	3/3
Sodium Hydroxide (10%) Penetration/ Repellency	EN/ISO 6530	3/3	3/3
O-xylene Penetration/ Repellency	EN14325:2018	1/1	3/3
Butanol-1 Penetration/ Repellency	EN14325:2018	2/1	3/3

Protection Against Infectious Agents EN14126

In all four tests against blood and other biological contaminants, Lakeland MicroMax® NS is significantly more effective, performing at the highest possible class in each test. Tyvek® does not meet the minimum performance threshold in protection against blood and body fluids, and only meets the minimum classification in the other tests.

Advantage: MicroMax® NS

Physical Property	Test Method	DuPont Tyvek®**	Lakeland MicroMax® NS
		Performance Class Range 1-3 or 1-6	
Protection against Blood and Body Fluids	ISO 16604:2004	Not Classified	6
Protection against Biologically Contaminated Aerosols	ISO 22611:2003	1	3 (3 is maximum)
Protection against Dry Microbial Penetration	ISO 22612:2005	1	3 (3 is maximum)
Protection against Mechanical Contact with Substances Containing Contaminated Liquids	ISO22610	1	6

** Data taken from *DuPont User Instructions for CAH5*, document L-2984, January 2009/15.

In Summary...

The data shows that **MicroMax® NS provides better overall protection than Tyvek®**. When taking into consideration cost and performance, MicroMax NS is the superior choice versus Tyvek. It would be the better choice in most situations even if it cost as much as Tyvek®.

