DuPont™ Tychem® SL

LIGHTWEIGHT PROTECTION OF DUPONT™ TYVEK® LAMINATED WITH A CHEMICAL-RESISTANT SARANEX® FILM.

Technical Data Sheet

DuPont™ Tychem® SL delivers effective protection against a range of chemical environments. Tychem® SL provides at least 30 minutes of protection against 160 chemical challenges. Tychem® SL, utilizing Saranex® 23-P film laminated to Tyvek® brand protective material, is a lightweight, comfortable garment specifically designed for easy wear. Tychem® SL is ideal for chemical mixing, remediation, emergency medical response, paint spraying, and radioactive environments.

Tychem® SL is used in a variety of industries, including environmental clean-up operations, waste management, industrial plants, cleanroom applications, hazardous material response teams and other emergency services. General garment construction/wear guidelines should be followed according to the specific application.[1]

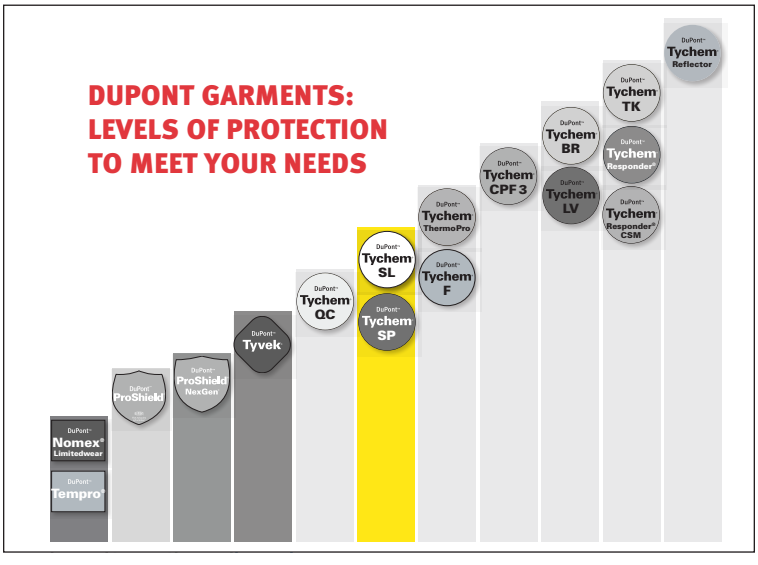
Visibility

When working in hazardous conditions, the color and visibility of protective apparel can greatly affect the overall safety of the worker. When workers wear high-visibility colors, it improves how well they are seen and distinguished from the background.

Obviously, safety is enhanced when workers can clearly see co-workers. The DuPont™ Tychem® SL white color is often a preferred choice because it provides contrast across a wide range of natural backgrounds. In a laboratory study, Tychem® SL received high overall ratings for visibility in dim light, bright light, and contrast with natural backgrounds.

Nuclear Environments

A study was conducted by Southwest Research Institute on the fabrics commonly used in potentially radioactive environments. The study of the fabrics' ability to prevent tritiated water vapor and tritium gas penetration showed Tychem® SL was 150 times better than PVC after three hours of exposure. The study states, "when it is desired to avoid all penetration of tritium, data suggest that the wearer may work three hours in Tychem® SL, as opposed to only half an hour in other fabrics."



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Durability

Tychem® SL is rugged and durable even in cold temperatures. Tychem® SL offers little change in stiffness when exposed to extreme cold temperatures (–65° to 20°C or –85° to 68°F) as measured per ASTM D747.[2]

Biohazards

Tychem® SL provides excellent resistance against blood, body fluid and viral contaminants, and passes ASTM F1670 for synthetic blood penetration and ASTM F1671 for viral penetration.

Permeation

DuPont™ Tychem® SL is the only fabric laminated with Saranex® for which DuPont provides permeation data and technical support. DuPont provides permeation data and detailed information on how our fabrics perform against chemical classes in a variety of forms.

[1] General Garment Specification/Wear Guidelines:

Select Serged Seams when liquid contact is not expected.

Select Bound Seams for misting exposure to non-hazardous liquids and resistance to particle penetration.

Select Taped Seams for liquid-splash and chemical-vapor resistance. Consider using a garment with a storm flap that covers the zipper/closure area. If the garment is splashed or drenched, change into a unused, clean garment.

[2] ASTM D747 — "Apparent Bending Modulus of Plastic by Means of a Cantilever Beam."

Physical Properties of DuPont™ Tychem® SL

Property	Values	Standard
Thickness, mil	13	ASTM D1777
Basis Weight, oz/yd^2	3.5	ASTM D3776
Mullen Burst, psi	73	ASTM D3786
Trapezoidal Tear, MD, lbf	9	ASTM D1117
Trapezoidal Tear, CD, lbf	8	ASTM D1117
Breaking Strength, Grab (MD), lbf	41	ASTM D5034
Breaking Strength, Grab (CD), lbf	50	ASTM D5034

Permeation Data for ASTM Recommended List of Chemicals for Evaluating Protective Clothing Materials (ASTM F1001)

Chemical Name	Physical Phase	Average Normalized Breakthrough Time, min	Average Permeation Rate, µg/cm^2/min
Acetone	L	immed.	7.85
Acetonitrile	L	68	0.2
Ammonia	G	32	0.15
1,3-Butadiene	G	>480	<0.02
Carbon disulfide	L	immed.	>50
Chlorine	G	>480	<0.01
Dichloromethane	L	immed.	>50
Diethylamine	L	12	>50
N,N-Dimethylformamide	L	78	0.46
Ethyl acetate	L	immed.	6.3
Ethylene oxide	G	immed.	8.4
n-Hexane	L	immed.	39
Hydrogen chloride	G	>480	<0.1
Methanol	L	>480	<0.001
Methyl chloride	G	>480	<0.006
Nitrobenzene	L	102	2.3
Sodium hydroxide, 50%	L	>480	<0.1
Sulfuric acid (conc.)	L	>480	<0.1
1,1,2,2-Tetrachloroethylene	L	immed.	>20
Tetrahydrofuran	L	immed.	>50
Toluene	L	immed.	39.3

Index of Codes:
> = greater than, **<** = less than, **L** = liquid, **G** = gas, **immed.** = immediate (<10 minutes)

Numbers reported are averages of samples tested by the ASTM F739 test method. Sample results do vary and therefore averages for these results are reported.

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