

DuPont™ Tychem® F

Helps protect against chemical warfare agents.

DuPont garments made of Tychem® F provide strong, lightweight liquid splash protection for law enforcement, emergency medical services (EMS) technicians and military personnel responding to an incident involving chemical, biological or radioactive agents. Easy to use and easy to wear, garments made of Tychem® F are lightweight and flexible, and can be folded into small packages for easy storage and portability.

Tychem® F is a DuPont proprietary barrier material that has been available in Europe since 1994. Garments made of Tychem® F help offer protection against chemical warfare agents and a variety of industrial chemicals. They include features such as: taped seams; respirator fit hood; and storm flap with double-sided tape over the zipper. These garments, which are gray for low visibility, are intended for domestic preparedness situations where the potential for exposure to chemical, biological and radioactive agents exists.

Garments made of Tychem® F have been tested by the Soldier and Biological Chemical Command (SBCCOM) in Aberdeen, Md. and the TNO Laboratories in the Netherlands. Garments made of Tychem® F are also listed in the National Institutes of Justice "Guide to Selection of PPE for Emergency Response."



To obtain superior quality protective apparel, supported by extensive ISO-registered quality control standards and documented performance information, look for DuPont manufactured garments made of Tychem® F.

Garments of Tychem® F are manufactured by DuPont Personal Protection, the leader in protective apparel, offering a complete line of products to meet the diverse needs of emergency responders to WMD incidents. For additional information about Tychem® F, consult the latest edition of DuPont™ SuitSmart® at www.PersonalProtection.DuPont.com or call 1-800-931-3456.

For information on the complete line of DuPont protective clothing for chemical, biological and radiological terrorism, consult the DuPont Personal Protection website at www.PersonalProtection.DuPont.com.

These products include: Responder® CSM, which has been approved by the U.S. Army CASHPAC board for use with chemical weapons; Tychem® TK and Responder® ensembles, which have been certified to the chemical and biological protective requirements of NFPA 1991; Tychem® BR and Tychem® LV, which provide broad range protection in high- and low-visibility colors for military personnel and industrial workers; and Tyvek®, which is well-suited for modesty garments and anthrax contamination investigations.

NOTE: Tychem® F is the exact same fabric, but has often been referred to as: Tyvek® F, Tyvek® Military F, and Tyvek® Protech® F.

Physical Properties of Tychem® F

Total Basis Weight ASTM D3776	3.1 oz/yd ²	Puncture, Propagation, Tear ASTM 2582	8.6 lbf avg.
Thickness ASTM D1777	7 mils	Trap Tear (md/cd) ASTM D5733	5.9 lbf avg.
Ball Burst ASTM D3787	61 lbf		

These results are measured using the latest ASTM test methods. Results will vary due to the changes in test methods. A true test of performance is [in use](#).

Tychem® F

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Permeation Data for Chemical Warfare Agents

CHEMICAL NAME	PHYSICAL PHASE	BREAKTHROUGH TIME (minutes)
Lewisite	L	360
Mustard	L	>720
Tabun	L	>720
Sarin	L	>720
Soman	L	>720
VX	L	>720

Permeation Data for Industrial Chemicals of Special Concern*

CHEMICAL NAME	PHYSICAL PHASE	STANDARDIZED BREAKTHROUGH TIME (minutes)
Ammonia	G	79
Chlorine	G	>480
Ethylene oxide	G	65
Formaldehyde (formalin solution)	L	>480
Hydrochloric acid, 37%	L	>480
Hydrogen fluoride	G	imm.
Fuming nitric acid	L	14
Sulfur dioxide	G	38
Concentrated sulfuric acid	L	>480

*Additional permeation data is available on our website: www.PersonalProtection.DuPont.com.

INDEX OF CODES:

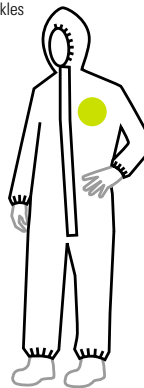
> = greater than, < = less than,
L = liquid, **G** = gas,
imm. = immediate (<10 minutes)

All tests were performed by an independent laboratory. Chemical warfare agents were tested according to Mil-STD-282, Method T-209 (L and HD, 37°C) or Method 208 (GA, GB, GD, VX, 25°C) at 100 g/m² levels. Industrial chemicals were tested at room temperature with standardized breakthrough times based on reaching a permeation rate of 0.1 µg/cm²/min as defined in ASTM F739.

Coverall

70780

taped seams
 attached hood (respirator fit)
 front zipper closure
 elastic back
 storm flap
 elastic wrists
 elastic ankles



6/cs

Coverall

70781

taped seams
 attached hood (respirator fit)
 front zipper closure
 elastic back
 storm flap
 elastic wrists
 sock boots



6/cs

This information is based upon technical data that DuPont believes to be reliable. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligation or liability in connection with this information.

It is the user's responsibility to determine the level of toxicity and the proper personal protective equipment needed. The information set forth herein reflects laboratory performance of fabrics, not complete garments, under controlled conditions. It is intended for information use by persons having technical skill for evaluation under their specific end-use conditions, at their own discretion and risk.

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 have shorter breakthrough times and higher permeation rates than the fabric. Please contact the garment manufacturer for specific data. If fabric becomes torn, abraded or punctured, end user should discontinue use of garment to avoid potential exposure to chemical. **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 WHATSOEVER IN CONNECTION WITH ANY USE OF THIS INFORMATION.**

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WARNINGS:

- 1) Tychem® F is not flame-resistant and should not be used around heat, flame, sparks, or in potentially flammable or explosive environments.
- 2) Garments made of Tychem® F 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.

For more information:

Visit our website at:

www.PersonalProtection.DuPont.com

For specific permeation data and breakthrough times for other chemicals:

**DuPont Protective Apparel Fax-On-Demand Service
 1-800-558-9329**

To place an order please call our customer service center:

phone: **1-800-931-3456**

DuPont Personal Protection

The miracles of science™