DUPONT™

CBRN Protection for Military Forces

DUPONT Tyvek APX

DUPONT Tyvek

DUPONT Tychem

Background

In today's multi-threat environment, military personnel face **chemical, biological, and radiologically contaminated particle risks** that require more than standard-issue protective gear.

The real challenge is often unseen:
Outdated or single-purpose suits can leave critical gaps in protection.

Rather than asking "Which suit has the highest protection level?", there is a growing shift among military specifiers toward: "**Do we have the right combination of protective solutions and know-how for all potential threats?**"

Any “hazmat suit” will NOT do the job. Here is why:

1. **Multi-Hazard exposure:** A scenario might involve toxic chemicals plus biological agents or radioactive dust simultaneously. Traditional gear focused on one hazard can falter when facing combined threats.

2. **Knowledge & experience gaps:** Selecting PPE isn’t straightforward. Not all fabrics block all hazards. Without deep expertise and support in analyzing specific risk scenarios, teams risk choosing insufficient protection.

3. **Comfort vs. Protection Trade-off:** Heavy-bulky suits may protect against contamination but could also disturb and slow down soldiers potentially leading to severe consequences in combat situations where agility and quick response times are critical for survival and success. On the other hand, lighter suits might be more comfortable yet not durable enough. Achieving full protection without sacrificing agility is key.

4. **Camouflage & Discretion:** CBRN operations don’t always happen on a frontline battlefield. For incidents in civilian areas, responders in neon orange suits can attract unwanted attention. A neutral grey suit keeps a low profile, allowing personnel to remain discreet once the immediate danger is over.

5. **Design Requirements:** Suit designs for identity and compatibility with their gear might be required but not always offered by standard gears.

6. **Shelf-life & Origin:** Military stockpiles require gear with a long shelf life that can be safely stored for years.

7. **Reliable Supply & Origin:** Reliable, consistent PPE availability is essential to protect personnel whenever needed. In EMEA, tender requirements also often favor local or EU-made products.

At DuPont, we don't just produce PPE; we manufacture PPE utilizing an integrated production network and offer tailored support built on decades of experience.

Discretion & Customization

Tychem® 6000 F is available in grey and olive green[1] for low-visibility operations—ideal for civil defense and urban missions. And Tyvek® is available in white – suitable for snow camouflage.

Versatile Protection

From dust to chemical and biological hazards, Tyvek® and Tychem® lines can cover a wide range of threats.

Expert Support

Decades of PPE experience and validated test data help guide your PPE choices.

Lightweight yet Durable

Garments like Tychem® 6000 F offer high protection at less than 500g/garment helping to improve comfort in the field.

Beyond Garments

Roll-goods and chemical tape extend the protection to vehicles, shelters, and gear.

Shelf-Life Ready

Tyvek® and Tychem® materials are engineered for long-term storage, with a shelf life of up to 10 years when properly stored — supporting readiness and stockpile reliability.

EU-Made & CE-certified

Tyvek® fabric is produced in Luxembourg; garments CE-marked, and compliant with EN standards.

[1] Available upon demand

Key DuPont Protective Solutions – Features & Applications

Product	Protection Focus	Key Features	Typical Military Uses
Tyvek® 500 Xpert 	**Particulate & light liquid protection (dust, fibers, low-concentration chemicals). Also certified for biohazards (blood, infectious particles).**	• Lightweight, breathable fabric – comfortable for extended wear. • Resists particle penetration (keeps out radioactive dust and biologically contaminated dust). • Durable: tear- and abrasion-resistant for rough use. • Antistatic-treated to improve electrostatic dissipation. • Also available in blue and green.	• Post-incident cleanup (e.g. sweeping up radioactive or toxic dust). • Solid particles/lead removal and other hazardous maintenance tasks. • Snow camouflage operations: white Tyvek® suits or covers hide soldiers and equipment in snowy terrain. • Worn as modesty garments after decontamination.
Tyvek® APX™ 400 NEW 	**Particulate and light chemical protection with extreme breathability**	• Lightweight, extremely breathable Tyvek® fabric (Ret ~4) • Excellent barrier against fine particles and low-concentration inorganic chemicals • Antistatic-treated	• Extended wear time in warm climates or during long operations • Peacekeeping or logistics operations with low chemical exposure risk
Tychem® 6000 F 	**High-level chemical & biological protection (industrial toxic chemicals, infectious agents). Resists liquid splashes under pressure.**	• Multilayer barrier laminated to Tyvek® – stops a broad range of chemicals (including many acids, bases, solvents). • Tested against a wide range of chemicals according to the military permeation standards Finabel and MIL-STD-282 – proven barrier performance. Check out the full chemical permeation database: **https://www.safespec.dupont.co.uk/selector-tool/selectortool-chemical.html** • Lightweight for its class; more comfort for wearers. • Available in grey[2] and olive green[2] (low-visibility) and orange[2] (high-visibility) • With sealed seams (stitched & over-taped) for full barrier integrity.	• Decontamination teams – suit up in Tychem® 6000 F for cleaning toxin spills or scrubbing gear after a chemical exposure. • CBRN incident first responders – police or rescue units can use these suits for protection against chemical or biological exposures. • Demilitarization & cleanup of old munitions – workers handling decades-old chemical exposure rely on these suits for safe removal and destruction operations. • Also used to fabricate collective protection shelters, vehicle covers, and casualty evacuation bags (as Tychem® 6000 F roll-good) due to its strength and impermeability.

[2] Please check DuPont™ SafeSPEC™ for permeation data that meets your specific needs based on the hazards identified in your hazard assessment.

Product	Protection Focus	Key Features	Typical Military Uses
Tychem® 6000 SFR 	**Dual-hazard: chemical protection similar to Tychem® 6000 F with also secondary Flame Resistance (for flash fire scenarios).**	• Self-extinguishing fabric– does not contribute to additional burn injury if appropriate primary flame-resistant personal protective equipment is worn beneath.[3] • Significantly reduces the second-degree burn level of the entire clothing system.[4] • Flashes away: no challenge in removing it when escaping after flame exposure. • Provides a barrier to permeation of at least 30 minutes against more than 250 chemical challenges* including toxic industrial chemicals, and flammable organic solvents. • Unlike other SFR solutions, Tychem® 6000 SFR shows no toxic chlorine outgassing after flame exposure. • Lightweight for its class; more comfort for wearers.	• Fuel & chemical depot work – ideal for teams where a flammable vapor release and toxic spill might happen at the same time (e.g. near fuel stores). • Hazmat firefighting support – for specialists supporting fire response in chemical plants (not for direct fire entry, but in case of flash fire exposure). • Explosive ordnance disposal in chemical environments – added secondary Flame Resistance in case of explosive ignition during chemical agent cleanup.
Tychem® TK 	**Extreme hazard, gas-tight protection against highly corrosive gases, volatile toxic chemicals*, and unknown substances. Provides full-body encapsulation (TYPE 1a-ET level protection).**	• Made from Tychem® 10000 fabric – a rugged, multi-layer barrier with high tear resistance. • Gas-tight seams and closures – typically a one-piece suit with visor and built-in gloves/boots, used with SCBA. • Lighter weight (<4.6 kg per garment) than traditional rubber suits yet very tough. • Highest level of chemical barrier, including against corrosive warfare agents and toxic industrial gases. (Permeation data available for nerve agents, sarin, mustard etc., demonstrates near-zero breakthrough)*.	• Chemical weapons EOD (Explosive Ordnance Disposal) – worn by specialists disarming or neutralizing chemical ordnance (e.g., to protect from nerve agent leakage as well as detonation by-products). • Biological threat labs – used when dealing with unknown biohazards where maximum containment is required. • Industrial accident response – backup suit for responders entering IDLH (Immediately Dangerous to Life or Health) atmospheres with toxic gas (e.g. ammonia, chlorine) clouds, when there's no margin for error.
Tychem® 6000 Tape 	**Chemical barrier tape providing additional sealing for gloves, zipper flap, boots, hood and other interfaces to help reduce exposure risks.**	• Maintains chemical barrier* integrity at seams and closures • Strong adhesion • Easy to apply in field conditions; easy tear by hand and low curling • Compatible with Tyvek® and Tychem® chemical protective garments and roll-goods.	• Reinforcing protective barriers • Emergency patching of damaged PPE or contaminated surfaces[5]

[3] Must be worn over primary FR clothing. [4] Repeated tests consistently showed <5% body burn. [5] If a suit is damaged, it should be replaced as soon as possible. The objective of the tape is not to repair damaged suits.
* The user must ensure suitable reagent to garment compatibility before use. Please refer to chemical permeation data available in SafeSPEC™ to determine the level of protection needed.

Ready to Equip Your Forces with the Right Protection?

Whether you're preparing for procurement, planning for readiness, or responding to emerging threats, DuPont is here to support your mission. Our team is ready to help you assess your needs and provide guidance on a combination of suitable Tyvek® and Tychem® solutions.

DuPont Personal Protection
DuPont de Nemours (Luxembourg) S.à r.l.
Contern - L-2984 Luxembourg

Customer Service
mycustomerservice.emea@dupont.com

DuPont™ SafeSPEC™

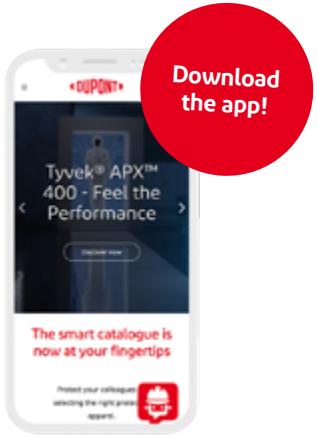
DuPont™ SafeSPEC™ - We're here to help

Our powerful web-based tool can
assist you with finding the appropriate
DuPont garment for chemical or cleanroom environment.

safespec.dupont.co.uk

GET IT ON Google Play

Download on the App Store



tyvek.com/ppe

Connect with us: