

DuPont is more focused than ever on providing innovative protection solutions and expert technical support tailored to meet the specific needs of emergency responders around the world.

Because their safety is our business, emergency responders can rely on the world-class people, products and innovation that have made DuPont a trusted partner in personal protection.

With a wide range of industry-leading personal protective equipment (PPE) solutions and a global network of PPE specialists, technical experts and manufacturing, DuPont is uniquely suited to provide the protection and comfort every worker deserves to face a range of workplace hazards with confidence.



Our brands

Nomex[®]

DuPont™ Nomex® features inherent flame resistance, lightweight strength and unmatched durability. Nomex® protective solutions meet or exceed global standards for heat, flame and arc flash protection while also protecting against harmful particulates.

Kevlar®

DuPont™ Kevlar® helps enhance the overall strength and durability of emergency response gear, yet is lightweight, comfortable and thermally protective. Kevlar® helps strengthen fabrics to new levels of performance.

Tychem®

DuPont™ Tychem® garments, gloves and accessories provide superior protection against a broad range of toxic liquids, vapors and chemical hazards.

DuPont provides permeation data for Tychem® fabrics.

Protection that every hero deserves



Every time the alarm sounds, emergency responders put their lives on the line to protect others. It's always been a dangerous job and the hazards continue to intensify.

54% of on-duty firefighter deaths

related to heat stress1

Heat stress—a major hazard

Gear should prevent heat penetration to allow firefighters enough time to safely escape from an emergency while also managing the risks from heat stress, which is a major cause of firefighter deaths. With its higher air permeability, Nomex® helps reduce heat stress.

¹R.F. Fahy, J.T. Petrillo and J.L. Molis, "Firefighter Fatalities in the US—2019," National Fire Protection Association: Quincy, MA 2020

Protection + comfort

= fewer injuries and deaths

Balancing protection and comfort—a critical concern

Firefighter gear must stand up to all the thermal hazards firefighters face while also helping them to get the job done with the least amount of heat stress and without getting in the way of mobility or situational awareness. With its inherent heat and flame resistance and lightweight strength, Nomex® fiber provides low weight and high thermal protection.

61% of career firefighter line-of-duty deaths from cancer²

due to chronic chemical and smoke exposures

Harmful particulates an unseen threat

A room filled with modern furnishings reaches flashover in just 3 minutes and 40 seconds compared to 29 minutes and 25 seconds for a "legacy" room. These modern rooms not only reach flashover much faster; they release a multitude of toxic substances that are carried by the smoke.3 Over time, exposure to these harmful particulates can lead to coronary heart disease, stroke, cancer and respiratory diseases.⁴ With its superior particle barrier performance, Nomex® Nano Flex helps make products like firefighter hoods more protective against harmful particulates.

²Data from the International Association of Fire Fighters (IAFF) for time period of January 1, 2002, to March 31, 2017, cited at https:// firefightercancersupport.org/resources/faq

³https://ulfirefightersafety.org/research-projects/ comparison-of-modern-and-legacy-home-furnishings. html

⁴International Agency for Research on Cancer, (2019) List of Classifications, Volumes 1-123, World Health Organization.





Emergency response

Recommended PPE

From the first alarm to the all-clear signal, DuPont provides emergency responders solutions for industry-leading PPE that meet or exceed global standards—providing those who put their lives on the line with the protection they deserve.



Hoods made with Nomex® Nano Flex

Thin, lightweight and durable, hoods made with Nomex® Nano Flex help prevent many harmful particulates from being absorbed through the skin on the neckline and upper jaw, which are areas that historically are known to be the most vulnerable and least protected. When added to a firefighter hood composite structure, hoods made with Nomex® Nano Flex result in higher than 99% particulate, bacterial and viral filtration efficiency.

This game-changing barrier protection is achieved without compromising thermal resistance, breathability, comfort or situational awareness.



Turnout gear made with Nomex® and Kevlar®

Nomex[®] and Kevlar[®] fibers can be found in each layer of most firefighter turnout gear. Together, these innovative fibers help provide proven protection, durability and comfort from the inside out.

Nomex® and Kevlar® fibers help manufacturers create fire-resistant liners, outer shells and accessories that not only stand up to the thermal hazards that firefighters may face, but also help them to get the job done without getting in the way of mobility.



Thermal liners made with Nomex® Nano

Developed to address the growing problem of heat stress, Nomex® Nano represents the next generation of firefighter protection. It is specifically engineered to be thinner than other advanced flame-resistant (FR) materials used for thermal liners and features equivalent durability. In fact, Nomex® Nano for thermal liners can provide up to a 40% reduction in thermal liner thickness without compromising thermal protection.

Thermal liners made with Nomex® Nano can help reduce the weight and bulk of turnout gear, increasing mobility and reducing fatigue, disorientation and heat exhaustion. These thermal liners also feature enhanced moisture management, further contributing to a reduction in heat stress by rapidly removing sweat to keep skin dry, storing less water and drying quickly.



Stationwear made with Nomex®

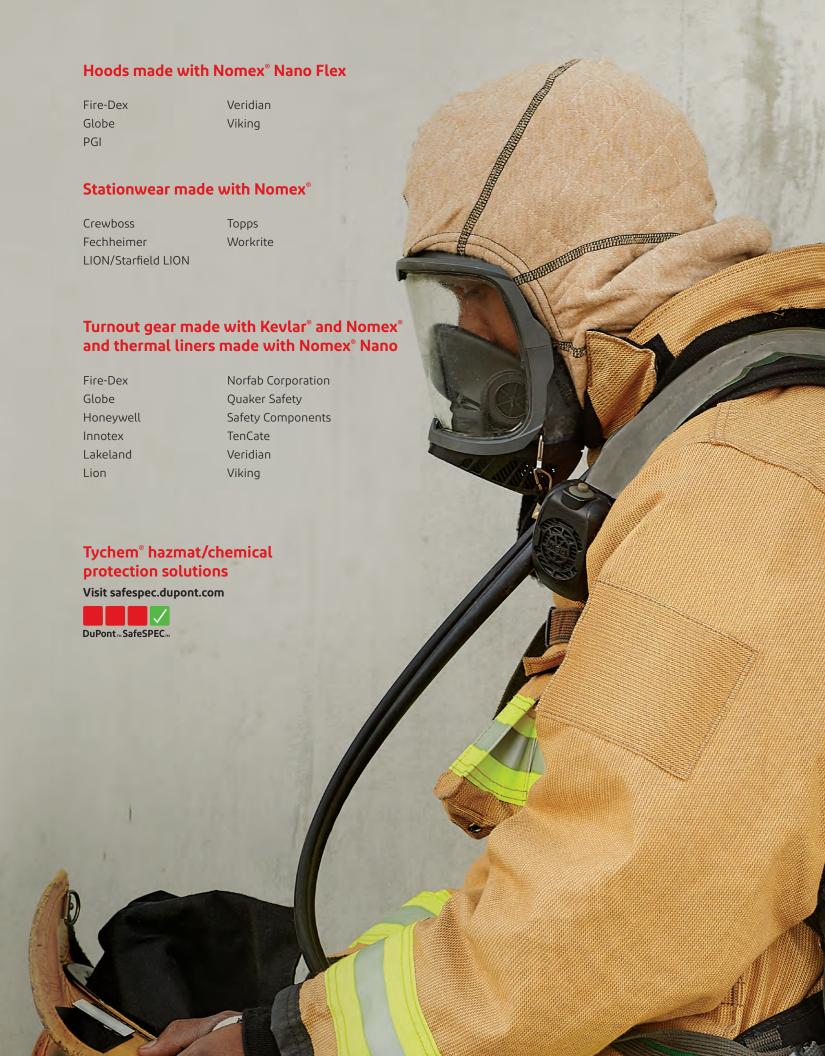
Only stationwear made with Nomex® has built-in heat and flame protection that won't melt, drip or stick to your skin when worn under turnout gear. Lightweight and breathable for a comfortable fit, stationwear made with Nomex® features excellent color fastness for a long-lasting professional look.

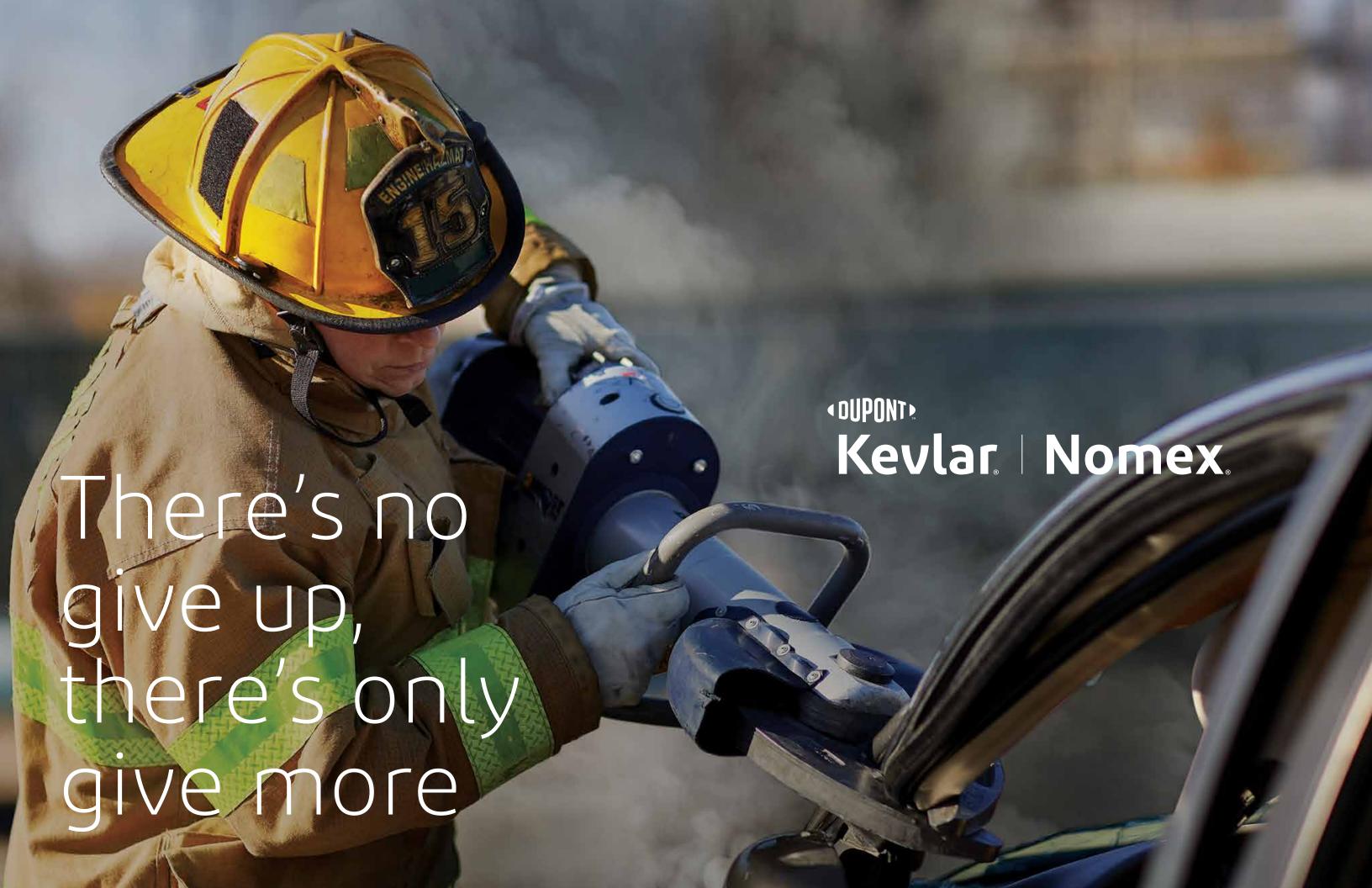
In addition, stationwear made with Nomex® can be washed and worn at least 125 times without sacrificing performance, giving it an average wear life of five years compared to only one year for flame-retardant-treated (FRT) cotton fabrics. It is available in button-down shirts, t-shirts and pants.

Where to find industry-leading PPE

Whether fighting fires or performing hazmat cleanup, emergency responders around the globe rely on the proven protection of DuPont PPE solutions. From stationwear and turnout gear to chemical suits, gloves and so much more, DuPont science-based innovations help improve safety and protect the lives of emergency responders.

As a global leader in PPE solutions, DuPont is proud to partner with the manufacturers listed here to bring the latest technological breakthroughs to emergency responders.







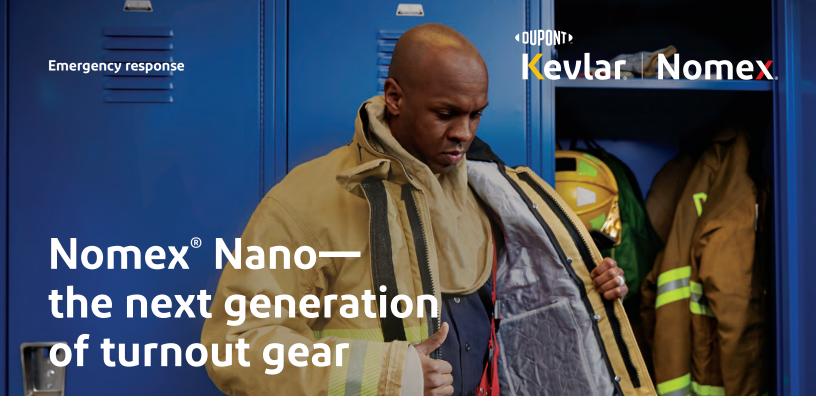
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Gear should prevent heat penetration to allow firefighters enough time to safely escape from an emergency while also managing the risks from heat stress, which is a major hazard for firefighters, contributing to more injuries and firefighter deaths than any other single factor.

Finding the ideal balance of protection and comfort has always been a critical concern for firefighters and an ongoing challenge for turnout gear (TOG) manufacturers.

Nomex® Nano makes the difference



Helps reduce heat stress



Enhanced moisture management



Increased mobility and escape time



Thin, lightweight and comfortable



Inherent heat and flame resistance



Inherent protection; can't be washed out or worn away

Improved comfort without compromising protection

Based on the Nomex® brand that has been trusted by firefighters around the world for more than 50 years, Nomex® Nano was developed to address the growing problem of heat stress. It is specifically engineered to be thinner than other advanced FR materials used for thermal liners and features a higher limiting oxygen index (LOI) than traditional Nomex® and DuPont™ Kevlar®.

By reducing the weight and bulk of current TOG systems, liners made with Nomex® Nano can help give firefighters increased mobility and better range of motion, helping to reduce fatigue, disorientation and heat exhaustion.

Nomex* Nano also helps reduce heat stress due to its improved total heat loss (THL) compared to typical thermal liners with similar thermal protection performance (TPP) and due to its enhanced moisture management, which includes a high absorption rate to remove sweat quickly and a high evaporation rate to drive water out of the thermal liner.

54% of on-duty firefighter deaths

related to heat stress1

Where to find thermal liners made with Nomex® Nano

DuPont is proud to partner with the manufacturers listed here to bring the next generation of turnout gear to emergency responders:

Fire-Dex Norfab Corporation

Globe Quaker Safety

Honeywell Safety Components

Innotex TenCate
Lakeland Veridian
Lion Viking

For more information

To learn more about Nomex® Nano and how it is helping to reduce heat stress for firefighters, visit nomex.com or email us at nomexinfo@dupont.com



dupont.com/emergencyresponse





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¹R.F. Fahy, J.T. Petrillo and J.L. Molis, "Firefighter Fatalities in the US—2019," National Fire Protection Association: Quincy, MA, 2020.

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Firefighters face many hazards on the job. One of the greatest hazards to their long-term health is the unseen threat of harmful particulates.

Experts have long agreed that reducing absorption of smoke particles through the skin on the neckline and upper jaw, which are areas that are historically known to be the most vulnerable and least protected, is an essential part of protecting the health of firefighters.

Nomex® Nano Flex makes the difference



>95% particle barrier efficiency



Helps improve thermal protective performance up to 25%



Thin, lightweight and comfortable



Highly breathable



Inherent heat and flame resistance



Maintains durability for 25+ washes



Inherent protection; can't be washed out or worn away



Enables situational awareness

Game-changing protection without compromising comfort

Based on the Nomex® brand that has been trusted by firefighters around the world for more than 50 years, Nomex® Nano Flex was developed to help make products like firefighter hoods more protective against particulates without compromising thermal resistance, breathability, comfort or situational awareness.

Hoods made with Nomex[®] Nano Flex are thin, lightweight and highly breathable, allowing air and moisture to move through while preventing harmful particulates from being absorbed through the skin.

In addition to the original quilted style, hoods made with Nomex® Nano Flex are now available in a laminated style that offers even greater levels of protection and comfort

61% of career firefighter line-of-duty deaths

caused by cancer since 2002¹

Where to find hoods made with Nomex® Nano Flex

DuPont is proud to partner with the manufacturers listed here to bring game-changing protection to emergency responders:

Fire-Dex

Globe

PGI

Veridian

Viking

For more information

To learn more about how the addition of Nomex® Nano Flex to a firefighter hood composite structure is helping to change the future for firefighters, visit nomex.com or email us at nomexinfo@dupont.com



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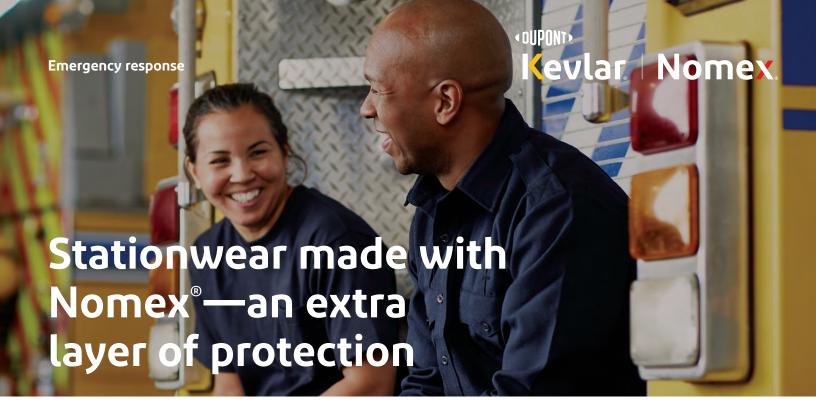




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¹Data from the International Association of Fire Fighters (IAFF) for time period of January 1, 2002, to March 31, 2017, cited at https://firefightercancersupport.org/resources/faq

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Firefighters need to be ready to answer any call, at any time. While working around the station or in the community, they need to look professional and be comfortable, even when performing tough physical jobs. When choosing stationwear, considerations such as appearance, comfort and durability are important. But thermal protection is critical.

When the call comes in, firefighters rely on their turnout gear (TOG) for protection, but serious burn injury can occur right through the TOG. Why not add an extra layer of protection?

Stationwear made with Nomex® makes the difference



Inherent heat and flame resistance



Helps reduce threat of heat stress



Thin, lightweight and comfortable



Inherent protection; can't be washed out or worn away



Lasts an average of five years; cotton only lasts one

Inherent protection plus comfort and durability

Lightweight and breathable for a comfortable fit, stationwear made with Nomex® helps reduce the threat of heat stress, which can cause fatigue, disorientation and heat exhaustion. Fabrics made of Nomex® cool more effectively than those made of other materials due to lower thermal and evaporative resistance.

Available in button-down shirts, t-shirts and pants, stationwear made with Nomex® will not melt, drip or support combustion.

50% drop in predictive burn injuries

compared to garments of 100% cotton¹

See the difference in protection



Stationwear made with Nomex®

Burn time: 3 sec Predicted burn injury: 11%

Shirt: 4.72 oz/yd² Pants: 6.94 oz/yd²



Polyester is powerless

Burn time: 3 sec Predicted burn injury: 75%

Shirt: 5.13 oz/yd² Pants: 11.77 oz/yd²



Cotton doesn't cut it

Burn time: 3 sec Predicted burn injury: 58%

Shirt: 5.27 oz/yd² Pants: 7.49 oz/yd²

Where to find stationwear made with Nomex®

DuPont is proud to partner with the manufacturers listed here to bring an extra layer of protection to emergency responders:

Crewboss

Fechheimer

LION/Starfield LION

Topps

Workrite

For more information

To learn more about how stationwear made with Nomex[®] is helping to provide an extra layer of protection for firefighters, visit nomex.com or email us at nomexinfo@dupont.com





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¹When exposed to a 3-second flame.

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Emergency responders can face a variety of toxic chemical, thermal and biological threats, including toxic industrial chemicals (TICs), chemical warfare agents (CWAs) and viruses, as well as flash fire and arc flash risks.

Proven protection for those who protect us

DuPont offers a wide range of chemical protective clothing and biohazard suits to help protect emergency responders against the chemical and biological hazards they face on the job. These innovative personal protective equipment (PPE) solutions undergo rigorous testing.

In addition, DuPont™ Tychem® fabrics have been tested by third-party laboratories for permeation against hundreds of chemicals. And, unlike many other garment suppliers, DuPont provides permeation data to assist emergency responders in selecting the most appropriate garments.

Making garment selection easier

DuPont[™] SafeSPEC[™] is a sophisticated, easy-to-use interactive tool that provides options for consideration for chemical protective clothing based on the user's hazard scenario. The DuPont database includes the permeation data of hundreds of chemicals, including warfare agents and the ASTM F1001 standard list of challenge chemicals. This tool can be found at safespec.dupont.com.

Tychem® protection for emergency responders

Whether the potential threat is light liquid splash, heavy exposure to industrial chemicals or even warfare agents, there is a Tychem® garment specifically designed to provide the protection emergency responders need to get the job done and go home safely.

These Tychem® garment solutions include:



Tychem® 2000

Providing light liquid splash protection, Tychem® 2000 garments with taped seams offer at least 30 minutes of protection against more than 40 chemicals. These garments can be used to address biological hazards and for decontamination showering. Tychem® 2000 is yellow for high visibility.



Tychem® 6000

Strong and durable, Tychem® 6000 garments offer at least 30 minutes of protection against more than 180 chemical challenges. Tychem® 6000 is ideal for use when potential exposure to TICs and CWAs exists. Tychem[®] 6000 is available in orange for high visibility and gray for discretionary purposes with a low-visibility patch.



Tvchem[®] 6000 FR

Tychem® 6000 FR garments combine the trusted chemical protection of Tvchem® with the flame and arc flash protection of DuPont™ Nomex® into a single garment, providing emergency responders with triple hazard protection. Tychem® 6000 FR provides at least 30 minutes of protection against more than 180 chemical challenges and has an arc rating of 15 cal/cm² Ebt. Tychem® 6000 FR is available in orange for high visibility and gray for discretionary purposes with a low-visibility patch.



Tychem® 10000

Tychem® 10000 encapsulated Level A suits provide premium protection against toxic and corrosive gaseous, liquid and solid chemicals. Tychem® 10000 provides at least 30 minutes of protection against more than 320 chemical challenges. It is the leading garment chosen by hazmat responders worldwide. Tychem® 10000 is lime yellow for high visibility.

For more information

To learn more about Tychem® protective garments, visit dpp.dupont.com or call customer service at 1-800-931-3456. For permeation data and other technical details about a specific Tychem® garment, visit safespec.dupont.com





dupont.com/emergencyresponse safespec.dupont.com



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Warning:

Most Tychem® garments should not be used around heat, flames. sparks or in potentially flammable or explosive environments. Tychem® 6000 FR garments are designed and tested to help reduce injury during escape from a flash fire. Users of Tychem® 6000 FR garments should not knowingly enter an explosive environment. Consult the Tychem® user manual, located on our website, for instructions on proper use. care and maintenance of your Tychem® garments.

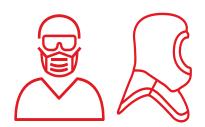
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Anyone intending to use this information should first verify that the garment selected is suitable for the intended use. In many cases, seams and closures have shorter breakthrough times and higher permeation rates than the fabric. If fabric becomes 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 I IMITATION, 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. DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with $^{\rm TM}$, $^{\rm SM}$ or $^{\rm o}$ are owned by affiliates of DuPont de Nemours, Inc. unless otherwise noted. © 2020 DuPont. (09/20)



At DuPont, we're committed to providing materials for FR PPE that can help provide essential workers with the protection they need to do their jobs safely, while adhering to Centers for Disease Control and Prevention (CDC) guidelines. The CDC recommends, if facing possible COVID-19 exposure, "wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain."

While many people can simply use surgical and cotton masks for facial protection, essential workers, including firefighters and emergency responders, may require PPE face masks that can withstand the FR hazards they face on the job. DuPont™ Nomex® fabric in hoods and masks won't melt, drip or burn when exposed to heat or flame, providing these workers with the facial protection they need in certain emergency and flash fire situations.



When used as face, nose and mouth coverings, balaclavas, gaiters and hoods made with Nomex® may help meet the CDC guidance for wearing masks in environments that require FR protection. And with the inherent flame resistance of Nomex®, emergency responders can be sure their faces have the same level of FR protection that the rest of their gear provides.

Watch how masks made with Nomex® compare to non-FR face masks here.

Our trusted partners offer several FR facial protection offerings made with Nomex® Fabric and Nomex® Nano Flex that are available for purchase. Unlike chemically treated fabrics, Nomex® is inherently flame resistant, providing protection that's built into the fiber and can't be washed out or worn away. Nomex® is lightweight, highly durable and low-linting, providing the best balance of comfort and protection.

To help emergency responders find the right facial protection, we've included a list of partners for selecting FR PPE that protects against a range of hazards. For further assistance from one of our sales representatives, please contact us.

Nomex® Nano Flex: Balaclavas and hoods

Nomex® Nano Flex is a highly breathable FR material that delivers superior particle barrier performance. Thinner and lighter than other FR materials, Nomex® Nano Flex delivers industry-leading protection without sacrificing comfort. When it comes to performance, Nomex® Nano Flex is trusted and used by firefighters around the world.

Fire-Dex

PGI

Veridian

Viking

Nomex® Fabric: Gaiters and masks

Nomex® Fabric provides a tested and proven portfolio of FR solutions that meet or exceed global standards for heat, flame and arc flash protection.

Big Bill

Bulwark Protection

PGI

National Safety Apparel

Saf-Tech

Silver Needle Inc.



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Nomex* is intended for the application of industrial Personal Protective Equipment (PPE) such as coveralls, pants, shirts, hoods, and other in-kind accessories. Nomex* has not been evaluated by DuPont in medical applications such as surgical masks or other medical devices. As such, DuPont does not follow the release and quality specifications necessary for usage in medical applications for global jurisdictions. It is your company or converter's responsibility to ensure the final products made with Nomex* are compliant with all regulatory and standard requirements.

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