

DuPont™  
**KEVLAR®**

**POWER OF  
PERFORMANCE**



*The miracles of science®*

# INNOVATION & KEVLAR®

## Realizing the power of performance

Whatever the threat – a bullet from a gun, a slash from an inmate's shiv, or metal fragments from an explosion – DuPont™ KEVLAR® helps protect law enforcement personnel, corrections officers and the military. That's because the protection of KEVLAR® brand fiber is five times stronger than steel on an equal weight basis, yet, at the same time, is lightweight, flexible and comfortable. It provides proven performance and proven strength. This powerful brand's unique combination of attributes helps keep wearers safe from harm that can come in many forms: knives, switchblades, shrapnel, explosives and bullets. Like the thousands of men and women who wear KEVLAR®, DuPont is committed to helping protect and save lives.

And, that commitment is not the only thing you'll see demonstrated throughout this brochure. You'll see

innovation, as well. In law enforcement, DuPont has developed new technology that helps provide cut, puncture, slash and ballistic protection. In corrections, patented technology offers protection from spikes, shanks, shivs and other handmade weapons typically found in prisons and jails. New technology for the military offers improved comfort and enhanced protection from a variety of threats. And, that's not all. The successful ballistic protection that is synonymous with KEVLAR® brand fiber is now being leveraged into several unique and exciting applications that help deliver enhanced security and protection for other professional and private citizens.

Commitment. Innovation. DuPont. Read on to see how this ideal combination can help you achieve the power of performance.



### The origins of KEVLAR®

DuPont's goal to create an incredibly strong yet lightweight and flexible fiber that could be offered in a variety of products was realized by research scientist Stephanie Kwolek. The innovative spinning process to make KEVLAR® was developed by her colleague, Herbert Blades. In the years since those discoveries, DuPont™ KEVLAR® brand fiber has played a pivotal role in applications where high strength and light weight make a critical performance difference:

- Ropes that secure the airbags in the landing apparatus of the Mars Pathfinder.
- Small-diameter, lightweight ropes that hold 22,000 pounds to help moor the largest U.S. Navy vessels.
- Shrapnel-resistant shielding in jet aircraft engines that will help protect passengers in case an explosion occurs.

- Run-flat tires that allow for greater safety because they won't ruin the rim when driving to the nearest assistance.
- Gloves that help protect hands and fingers against cuts, slashes and other injuries that often occur in glass and sheet metal factories.
- Kayaks that help provide better impact resistance with no extra weight.
- Strong, lightweight skis, helmets and racquets that help lessen fatigue and boost exhilaration.

Its unique properties of lightweight strength, cut, chemical and high-temperature resistance, protection and comfort have enabled KEVLAR® to help save the lives, free the imagination and enhance the performance of people around the world.

## IT'S QUITE A COMBINATION



# LAW ENFORCEMENT & KEVLAR®



## Dressing for survival

In law enforcement, no two days are exactly alike. Because police officers never know the weapons or the perpetrators they may come up against, wearing personal protection might mean the difference between walking away from a criminal assault or...not.

Statistics have consistently shown that wearing personal body armor reduces the chance of bodily injury or death caused by physical, ballistic, stab and slash attacks. For example, a recent study revealed that wearing personal body armor could have prevented 42 percent of known officer fatalities where an officer was assaulted with a firearm. And, an FBI study from the 1990s reported that the risk of firearms-related fatalities for an officer not wearing body armor is 14 times higher than for an officer who does. Truly, personal body armor has become the most important part of

the law enforcement officer's uniform – a key component in dressing for survival. And, when that personal body armor is made utilizing KEVLAR® performance technology, it provides exceptional performance, superior strength and extreme flexibility, enhancing the freedom of movement and increasing the confidence of those who wear it.

That's because when a bullet hits a vest made of DuPont™ KEVLAR® the fabric actually absorbs the energy of the bullet along the molecules of each fiber, "catching" it in a multi-layer web of woven fabrics. These engaged fibers absorb and disperse the energy of the impact to other fibers in the weave and help reduce the amount of transferred energy that causes blunt trauma. Police officers have relied on the superior bullet-stopping power of KEVLAR® for more than 30 years.

## Developing new technologies that help keep officers safe and comfortable

Since DuPont™ KEVLAR® brand fiber first started helping protect officers, DuPont has been committed to developing new technologies to improve officer safety. That means understanding what tomorrow's threats will be and developing new technologies that allow KEVLAR® to help protect against them...so that officers can continue to perform in an increasingly dangerous job. DuPont™ KEVLAR® Multi-Threat Technology provides cut protection from commercial knives; puncture and slash resistance from hand-made weapons and ice picks; and ballistic protection from handguns. From higher-level bullets to knives, needles and explosions, DuPont™ KEVLAR® is looking at more of the dangers officers face and working to help protect against them.

But that's not all. We know that no vest can protect someone who isn't wearing it. That's why we've worked to develop technologies that allow vests to be more comfortable ever since they were first introduced. DuPont™ KEVLAR® Comfort XLT technology enables body armor to be at least 25% lighter than previous all-aramid fabric solutions.

You've come to know DuPont™ KEVLAR® for your officers, and you've seen what we've done for officer safety over the past 30 years... keep watching for what's to come as we move into the future.

## IT'S QUITE A COMBINATION



# COMMITMENT & KEVLAR®

## Improved protection and comfort for military personnel

The armed forces continue to rely on innovations developed by DuPont™ KEVLAR® for improved comfort and enhanced protection from the many threats they face. Our newest offerings include lighter-weight fragmentation vests, helmets, countermine boots and vehicular armoring and shielding, which allow military personnel to move quickly and easily – even when heavily armed – without sacrificing superior protection. And, the new Modular Integrated Communications Helmet (MICH) offers ballistic and impact protection to those in the military who must wear extensive communications equipment. It helps provide protection against fragmentation and bullets in a balanced and stable configuration and can be mounted with night vision devices.

There are also a number of new apparel offerings from DuPont™ KEVLAR® currently in development. These include explosive ordnance disposal suits, which help provide increased fragmentation and

flame resistance; anti-fragmentation trousers, which will offer protection against low-velocity fragments and blasts; and parachutist rough terrain suits, which will offer help improve puncture protection from branches.

DuPont™ NOMEX® also offers a number of protective garments for the military. Flight suits, jackets, gloves and combat vehicle crewmen coveralls of NOMEX® provide outstanding flame-resistant protection. The Naval Flak Vest help protect seamen above deck against fragmentation and helps keeps them safe from thermal threats. Lightweight, breathable fleece garments of NOMEX® offer military personnel superior protection from extreme heat and flame. NOMEX® Limitedwear is a limited use flame-resistant (FR) coverall designed to provide primary flash fire protection for those requiring short-term FR protection.



## Keeping corrections officers safe

During the last several years, as the inmate population has grown, so have violent attacks against corrections officers. In the last 10 years alone, more than 45,000 corrections officers have sustained either life-disabling or life-threatening injuries at inmates' hands. Statistics like these highlight the need for personal protection specifically designed to keep corrections officers safe from slash and stab attacks.

### Technology on the cutting edge

DuPont's commitment to provide technology solutions that anticipate the needs of its customers is exemplified by the development of a new, ultra-dense KEVLAR® fabric for use in personal body armor worn by corrections officers. It is woven so tightly together, that when struck by sharp, handmade instruments

such as spikes, awls or knives, the fiber absorbs and dissipates the energy of the puncture.

### Protection, confidence and comfort that last the entire shift

KEVLAR® CORRECTIONAL™, the first all-fabric construction to pass NIJ Stab Standard 0115.00, helps stop attacks from spikes, shanks, shivs and other handmade weapons typically found in prisons and jails. It provides outstanding puncture- and slash-resistant protection and is significantly lighter and more comfortable than metal alloy and rigid vests. This new technology also enables manufacturers to design concealable, breathable, flexible vests that contour with the body and move with, not against, the wearer.

## IT'S QUITE A COMBINATION



# PROTECTION & DUPONT



## DuPont helps first responders perform in extreme situations

Today's challenging times call for reliable protection that can stand up to the variety of threats faced by first responders. With that in mind, DuPont is dedicated to leveraging the powerful performance of its brands into protective apparel offerings that meet the unique needs of first responders.

- Gloves of KEVLAR® offer superior cut protection, as well as comfort, flexibility and lightweight strength.
- Helmets, boots, hoods and turnout gear of NOMEX® and KEVLAR® offer superior thermal protection against intense heat and flame and provide the comfort, breathability and mobility firefighters require.
- NOMEX® Limitedwear delivers the superior flame-resistant protection of DuPont™ NOMEX®

brand fiber in a limited-use garment. These coveralls can be conveniently stored in car trunks and worn over street clothes or uniforms of first responders.

- EMS Wear of NOMEX® provides excellent thermal protection from flash fire hazards, incorporates viral protection from liquid-borne pathogens and helps protect against many hazardous chemicals.
- Urban Search and Rescue (USAR) Gear of NOMEX® delivers abrasion, cut and thermal protection.
- DuPont™ Tychem® TK and Tychem® CPF3 Suits help protect first responders during chemical and biological terrorism incidents. Garments certified to NFPA 1994 standards are now available.

When the challenges are tough and the stakes are high, DuPont is committed to helping protect first responders. From garments designed with safety and protection in mind to innovative accessories such as DuPont Antiseptic sprays and wipes, flexible-yet-strong Hytre® fire nozzles, and a broad

range of disinfectants and fire suppressants, DuPont scientists are committed to developing the protective apparel and equipment solutions first responders need to perform to the best of their abilities – safely and confidently – in extreme and dangerous environments.

## Transforming the ordinary into the extraordinary

KEVLAR® is an advanced technology from DuPont. It helps transform ordinary products into extraordinary ones that help those who use them do more, go farther, and be even better at what they do. For example, on the mountain trail, bicyclists rely on virtually flat-free and puncture-resistant tires made of KEVLAR®. In running shoes, KEVLAR® maximizes the energy output of runners while helping to protect vulnerable parts of the foot. Hiking boots that incorporate KEVLAR® are lightweight and help provide the support and strength required in rugged environments.

Vehicular armor of KEVLAR® provides ballistic protection without compromising performance in all types of automobiles. This super-lightweight composite armor system provides consistent and uniform ballistic performance and can easily withstand multiple hits from handguns as powerful as the .44 Magnum without delaminating or detaching from the vehicle. Easy to mold and manufacture, the armor panels offer superior fit, feel and finish, as well as an un-precedented level of ballistic performance.

## IT'S QUITE A COMBINATION





## The IACP/DuPont KEVLAR SURVIVORS' CLUB®: Recognizing officers who dress for survival

In 1987, DuPont and the International Association of Chiefs of Police formed a non-commercial organization named the IACP/DuPont KEVLAR SURVIVORS' CLUB®. It honors law enforcement and corrections professionals whose lives have been saved or whose injuries have been reduced as a result of wearing personal body armor. The KEVLAR SURVIVORS' CLUB®, which pays tribute to those with the foresight to dress for survival, wants more professionals in the law enforcement and corrections communities to join its ranks. Goals of the KEVLAR SURVIVORS' CLUB® are:

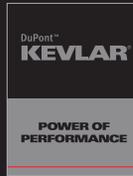
- To reduce death and disability by encouraging officers to wear their personal body armor every day.
- To recognize and honor those professionals who, as a result of wearing personal body armor, have survived life-disabling and/or life-threatening incidents.
- To serve the law enforcement and corrections communities by collecting important data and sharing valuable information concerning survivors' stories with fellow officers in the field.

The KEVLAR SURVIVORS' CLUB® is proud to announce that the lives of close to 3,000 officers have been saved because of the personal body armor they wore. It is the hope of the KEVLAR SURVIVORS' CLUB® that this number continues to increase. For that to happen, though, we need the personal stories of law enforcement and corrections officers whose lives have been saved through the wearing of personal body armor. These testimonials of survival serve as a valuable example for fellow officers on why it is so very critical to dress for survival on the job each and every day. To nominate yourself or a fellow officer (any brand fiber or vest is accepted), or to request an application, call toll free 1-800-441-2746 or visit the Web site at: [www.survivorsclub.dupont.com](http://www.survivorsclub.dupont.com).



# DuPont™ KEVLAR®

Whether it is unparalleled ballistic, stab or slash protection, lightweight comfort, or superior strength, you can count on DuPont™ KEVLAR® to help keep you safe from harm. That's because where the need for protection exists, you can rely on the men and women of DuPont to commit themselves to developing a solution.



That's the kind of vision, dedication and commitment you've come to expect from DuPont. And, when it comes to something as vitally important as your protection and safety, personal body armor of KEVLAR® won't let you down. Your country and your community expect only the best from you. You can expect the best from DuPont.

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