

PAULSON 
"Quality Products To Protect People"™



Your Personal Guardian

Welcome to

PAULSON INTERNATIONAL LIMITED

PAULSON Manufacturing Corporation; established in 1947

PAULSON provides protective equipment for various industries worldwide. Initially, specializing in face protection, the product range has broadened to PPE, Personal Protective Equipment, for industrial, fire fighting and sports safety as well as for the military, police operations and penitentiaries. The family owned and operated business centered on product development and manufacturing has consistently delivered quality and innovation to each and every customer in the USA and overseas. The production is located in Temecula, CA, USA. Today, the product portfolio covers a variety of goggles, face shields, body shields, knee and elbow protection according to the differing requirements of protection in numerous applications. By 2004, the export volume had reached such a level that it made good sense to set up a company focused on international sales, global marketing, distribution and service to the customer. As a consequence, PAULSON International Limited was founded early 2004. The headquarters is located in Wiesbaden, Germany, and operates an office in Temecula, CA, USA. PAULSON International Limited provides its products via a globally acting network of authorized distributors. An authorized distributor is in charge of a particular territory, ensuring best possible customer care to the local clientele, providing services to the customers such as product maintenance and overhaul. PAULSON International Limited promotes the concept of acting like a family. Each member of the family supports the other one, according to their particular competencies and availability. So, behind each distributor our clients are served by a powerful community. Big - especially multinational and governmental - customers typically prefer directly contracting PAULSON International Limited or even PAULSON Manufacturing, the producing entity in California, our mother company. Here, our local distributor is responsible for final on-site customer care, while PAULSON manages the contract. We have provided our web portal www.paulson-international.com in the hopes of giving our current and future clients in various countries access to our safety solutions; we offer product information you need as well as the global distribution network which brings PAULSON together as a family. Please browse our portal.



PAULSON MANUFACTURING CORPORATION
& PAULSON INTERNATIONAL LIMITED Office Temecula

PAULSON's Sales Structure



Mission Statement

Our mission is to provide the benefits of protection and safety to our customers, our business lifeline. We attain this purpose by providing conceptual use consultancy and training and by distributing the highest quality and most reliable safety gear in the industry, police and military as well as in firefighting and rescue. We want to be our customers' first choice for the all important task of personal protection. We seek our customers' trust, reliance and confidence over many years of our products service life.

Vision

Our vision is to be the leading innovator and provider of quality safety products and services that protect against various threats and improve peoples health, safety and the environment. We fulfill our customers' needs through the efforts of motivated, involved, highly trained employees and global marketing partners dedicated to continuous improvement in technology, quality, value, delivery and life-time maintenance based customer relation.

About us



Warehouse in Area of Frankfurt, Germany close to the PAULSON INTERNATIONAL Headquarters in Wiesbaden, Germany

A Distributor in your area can easily be found via the Distributor Locator at:

www.paulson-international.com



PAULSON's Quality Management

The Paulson R&D group assures state-of-the-art product and manufacturing technologies. With an extremely modern and high-tech machine shop on site, our tool and die professionals' manufacturer our own molds and our engineering team can rely on rapid prototyping for the latest design technology.

The marketing and customer service group continuously identifies market oriented product features and benefits. The products are tested and certified in accordance to US, European and International Standards. The products provided to the military have NATO Stocking Numbers (NSN) and are certified by independent assessment organizations such as HP White Laboratory or BAM (Beschuss-Amt, Mellrichstadt) in accordance to STANAG and MILSPECS. Customer satisfaction is achieved under the Total Quality Management (TQM) System certified to the requirements of ISO 9001-2000.

Paulson also has a technology advanced ballistics lab here at the factory; this gives us the ability to test our newest products to the specifications we have designed the product to meet in keeping with the highest quality you come to expect from Paulson.



Specialized Trade Lines for dedicated markets considering overlapping applications.



Tactical



Fire & Rescue



Industrial

The Main Trade-Lines

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PAULSON Global Network

Distributor Family



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PAULSON INTERNATIONAL LIMITED

provides its product via a globally acting network of authorized distributors. It is our goal to have distributors in each country. Since the portfolio of Paulson International Limited covers three main trade lines:

TACTICAL – FIRE FIGHTING – INDUSTRIAL

it is appropriate to assign one distributor per country for each trade line. An authorized distributor is in charge for a particular territory ensuring best possible customer care to the local clientele, providing services to the customers, such as product maintenance and overhaul.



 Algeria	 El Salvador	 Lebanon	 Romania
 Argentina	 Estonia	 Lithuania	 Russian Federation
 Australia	 Finland	 Luxembourg	 Singapore
 Austria	 France	 Macau	 Slovakia
 Belgium	 Germany	 Macedonia	 Slovenia
 Belize	 Greece	 Malaysia	 South Africa
 Bosnia-Herzegovina	 Guatemala	 Malta	 South Korea
 Brasil	 Honduras	 Mexico	 Spain
 Bulgaria	 Hong Kong	 Nepal	 Sweden
 Canada	 Hungary	 Netherlands	 Switzerland
 Chile	 India	 Nicaragua	 Taiwan
 China	 Ireland	 Norway	 Thailand
 Colombia	 Israel	 Pakistan	 Turkey
 Costa Rica	 Italy	 Peru	 United Arab Emirates
 Croatia	 Japan	 Philippines	 United Kingdom
 Cyprus	 Kenya	 Poland	 United States
 Czech Republic	 Latvia	 Portugal	 Viet Nam
 Denmark			

Bodily Danger

INDUSTRIAL, TACTICAL, FIRE & RESCUE

“We protect... while you serve!”

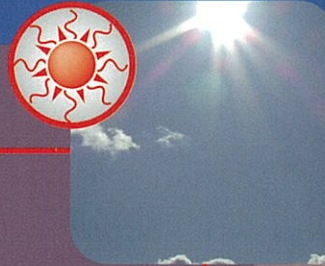
Impact



Sun



UV



Arc Flash



Fist Hit



Heat



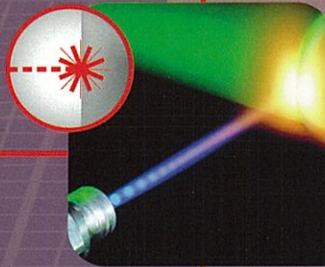
IDC



Fragments



Laser



Splash



Reinforcement



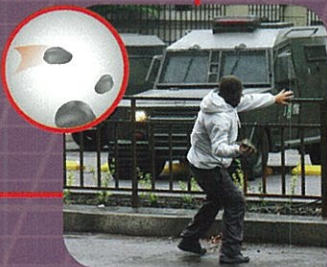
Kneeling



Chemicals



Stones



Personal Protective Equipment, PPE A System Solution!

Personal Protective Equipment (PPE) should be a system of interfacing and inter operable components supplementing each other in protecting the users health and lives and supporting the users in fulfilling their tasks (i.e., by filtering glaring light or disturbing reflections). Nevertheless, the best PPE cannot help if not worn. Therefore, PPE must be convenient to wear and shall not hamper the user in doing his job. Paulson has more than 60 years of experience in design and production of high quality optical Personal Protective Equipment derived from a broad base of detailed application knowledge.

Eyewear, Goggles and Earshield



Sun Shields



Face Shields

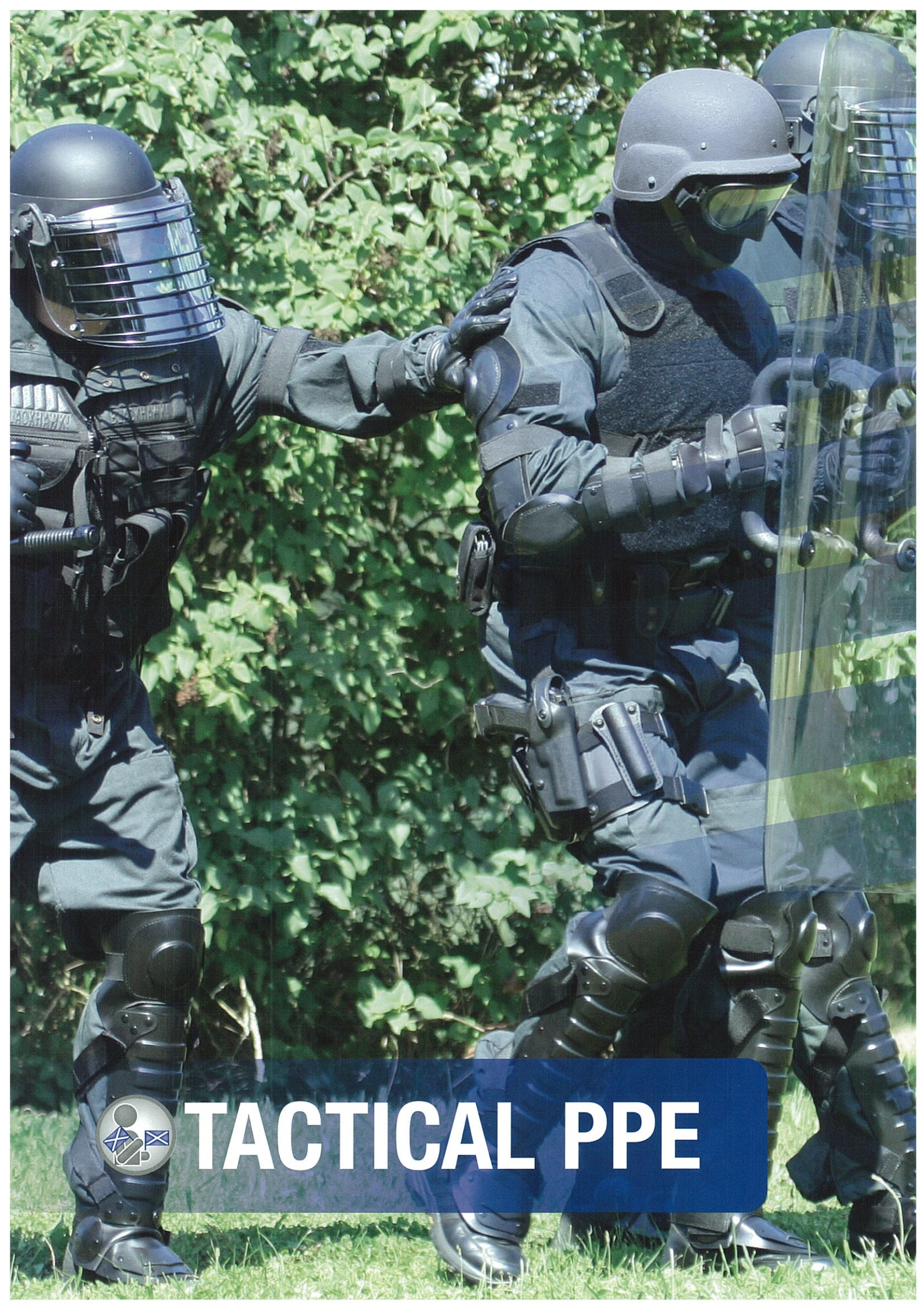


Knee and Elbow Protectors



Body Shields





TACTICAL PPE



 Eyewear & Earshield

 Goggles

 Face Shields

 Body Shields

 Knee and Elbow Protectors

 Lightweight Body Armor

PAULSON's TACTICAL PPE

Today, PAULSON's tactical product line is based on 60 years of analyzing the operational environment of professionals in military, police, and penitentiary operations. Aside from some special ballistic personal protective products, PAULSON focuses on eye, face and body protective system solutions with high emphasis on riot control and anti terror operations, i.e., enabling the teams to act quickly and flexibly, physically and mentally being protected against sling shots, Molotov Cocktails, back pack explosives assemblies or other high energy fragments from various sources.

- PAULSON supports and protects the professionals in forced entry situations, riot extractions out of crowds of buildings, separating riot crowds from peaceful demonstrators or third parties, etc.
- PAULSON goggles, face and body shields are at the leading edge in fragment protection at the lowest weight and with superior optical quality. Dozens of features in every detail prove the experience.
- Military from around the world use PAULSON to protect their troops



Eyewear

Extremely Robust, High Quality

PAULSON's Eyewear

PAULSON offers eyewear from extremely robust, high quality sunglasses, like the Officer, to stylish protective eyewear, like the Interceptor. PAULSON eyewear is specifically designed for on-duty police, security forces and public safety professionals.

For example the Interceptor:

- Very robust, injection moulded
- Superior optical quality with polycarbonate lenses
- Lenses cannot be pushed to the inside
- Nylon frame
- Integrated nose pad
- Rubber grip temples
- Metal spring hinges
- Reinforced lens support against severe impact



Officer



Interceptor



Repel



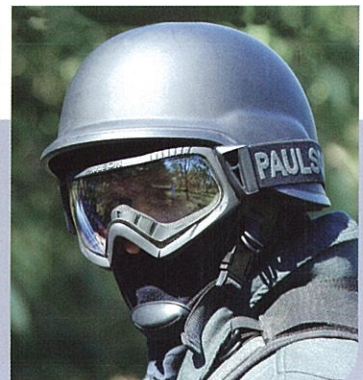
PAULSON's Tactical Goggles

From the Repel series via the brand new A.C.G. Advanced Combat Goggle to the classic 510 series, PAULSON tactical goggles combine the best protection at lowest weight to highest wearing comfort ratio.

No other protective goggle on the world market can endure more than a PAULSON goggle. This can be proved by the classic 510 series which guarantees highest fragment and splash protection, while the Repel series provides unparalleled panoramic visual scope, combined with optimal ventilation and fashionable looks. Special model A.C.G. is extremely lightweight and low volume in comparison with the protection level.

Lenses for Goggles in five colors:

Hard coated, designed to meet ANSI Z87.1 and EN 166/170





Best Protection, Lowest Weight, Highest Wearing Comfort



510 Goggle Series



A.C.G.



NYLON for Lenses and Windows

Even experts are surprised: The PAULSON R&D team has developed face shield windows and goggle lenses from Clear Nylon with the superior optical properties known for all PAULSON products; this technology has been applied to the DK-6 face shields and the A.C.G. Goggle.

Various tests with monolithic materials as well as with hybrids and coated samples exhibit astonishing results applicable for the development of new product. Finally it could be stated that the investigated Clear Nylon materials show significantly higher ballistic limits than comparable PC or PMMA samples.

So, with the single layer 4 mm nylon lens, the new Advanced Combat Goggle, A.C.G. comes with a v50-rating of nearly 290 m/s. To achieve the same impact resistance rating, if using a lens manufactured from polycarbonate, would require a 6 mm thickness.

The well known DK6 is now available with a nylon window as an option. The Nylon shield option includes the newest optics available from PAULSON and a v50 rating of 360 m/s. This shield weighs 14% less than an equivalent polycarbonate model. The impact tests are performed at the PAULSON Ballistic Lab and then verified at HP White laboratory.

The goggles are available with various lenses for all types of application or can be equipped with disposable tear-off lenses of different tintings.

All of these products meet ANSI Z87.1 and EN 166/170 as well as various military standards (USA & NATO).

Our clientèle has the choice to select the best matching product from a broad variable list ranging from one of the high volume 510 series goggles to the low volume A.C.G.





Face Shields

Superior Optical Properties and Manufacturing Quality

PAULSON's Tactical Face Shield

Delivering fragment protection without compromise, our face shields are tested with eminent and globally accepted test and certification organizations, i.e., the protection level is proven by exact specifications. The unique optical properties and manufacturing quality can be proved by everybody holding one of the products in their hand. Finally, there are dozens of remarkable features assigning PAULSON face shields to unique Personal Protective Equipment for professionals in military, police and security operations. In addition, Paulson face shields are also highly esteemed by search and rescue personnel in explosive environments, mining or in the production of explosives or fireworks.

Material and Production

PAULSON tactical face shields are injection moulded from virgin, high quality polycarbonate LEXAN™ or MAKROLON™ providing:

- Excellent optical properties
- Smooth and robust edges
- UV Protection (also implemented as improved scratch resistance through hard coating, optional in AF type models)
- Inner and outer anti-fog coating (optional in AF type models)

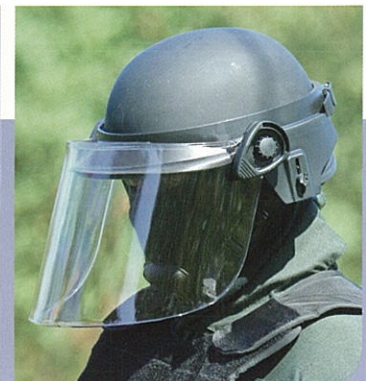
DK Correction



DK 6



DK 5



Body Shields



Transparency, High Impact Resistance

PAULSON Face & Body Shields are at the leading edge in transparent, light weight, occupational body protection.

PAULSON's Tactical Body Shields

Shields are fabricated from high quality polycarbonate sheet material. A highly sophisticated tempering process brings the flat computer machined sheets into final shape, free of mechanical stress and providing unique properties, such as:

- High impact resistance
- Fragment protection (the thicker models [e.g. BS-9] are v50-rated, even enduring several shotgun hits)
- Chemical resistant
- Rounded nooks and edges
- Very robust
- Does not need any additional edge protection, which requires unnecessary maintenance and hampers visibility
- Superior optical properties providing clear view with nearly no parallaxes
- The ability to take photos and videos through the shield, a feature highly appreciated in riot control management





Knee and Elbow Protectors

PAULSON's Lightweight Body Armor

The body armor components have been designed as a building block system. Select the components as per your active operations in mobile force units. The component armor is designed to protect and or reinforce the chest, back, shoulders, arms, elbows, knees and legs. Heavy duty protection doesn't need to be heavy anymore.

The plastic components are made of inflammable material, protecting against shock and aggressive strikes by means of a shock absorbing material to give maximum protection to the body. Furthermore, the robust but flexible plastic materials keep their convenient properties over a wide range of temperatures. Whether by adjustable rubber and/or Velcro fastening system, the body armor has a high degree of flexibility and can be adjusted to any size with ease and is comfortable to wear. One size fits all.



Ear Protection and Lightweight Body Armor



Ear Shield ES-1

The PAULSON Earshield is a foldable headset equipped with noise suppression and communications circuitry; a heavy duty nylon case is included.

Users are getting impulse noise (such as gun fire) suppression, while the electronic circuitry enhances weak sounds such as instructors voice. An impulse filter activates in four milliseconds. Hearing protection is the primary objective of the Paulson Earshield and it provides 25 dB NRR (Noise Reduction Rating) as tested by an independent and certified laboratory.





FIRE & RESCUE PPE



 **Goggles**

 **Face Shields**

 **Escape Goggles**

 **IDC**

PAULSON's FIRE & RESCUE PPE

Highly recognized certification organizations in the US as well as in Europe confirm the results already proven in PAULSON's test lab: PAULSON products endure more than the standard requirements, as a result, wearing a PAULSON's product could be the deciding factor in saving a life and it could be yours!!!

Apart from the specific requirements of Fire Departments and Search & Rescue Operations for this trade line, PAULSON can rely on its experience in severe industrial environments, military and police operations as well. While designing our fire goggles, Paulson was in close contact with the men and women from the fire departments concerning their needs and wants in order to give them a product that would be specifically designed for them. Consequently, we are proud to offer a high quality Personal Protective Equipment that contends with flames, heat radiation, high energy fragments, a array of splashes, molten particles and dust along with contamination liquids such as blood or spittle. Check for the details and see difference.





Goggles, Face Shields



PAULSON's Structural and Wildland Fire Products

PAULSON fire fighting goggles are also members of the 510 goggle series. Our PAULSON R&D Team has developed a goggle lens using APEC, a plastic material that is extremely heat resistance and can withstand higher temperatures than polycarbonate. With a choice of either APEC or polycarbonate and a double layer lens module our fire goggles are strong and durable for the difficult tasks that are associated with structural fire fighting along with search & rescue operations. The double layer lens module is also available with a gold coating that reflects heat radiation (IR) in applications such as fuel fires. An optional integrated nose shield is also available that protects the nose e.g., when looking through a broken window or extracting personnel from vehicles. All material is optically correct for an undiminished view of your ongoing operation.

From our Wildland goggles of the 510 series, either for forest fires or bush fires, we recommend the lighter versions of 510-Series Goggles: a single layer, high grade polycarbonate lens system with superior optics.

Disposable tear-off lenses are available in clear, yellow and neutral grey to filter light or simply for quick dirt removal.

All 510 series goggles come with a high quality anti-fog, hard coating and UV-Filter that is applied to the inside and outside of the lens. The 510 series meet various standards all over the world such as EN 166 and ANSI Z87.1.



510 Goggle Series



IDC, Escape Goggles



IM22-L6FD



510 Goggle Series

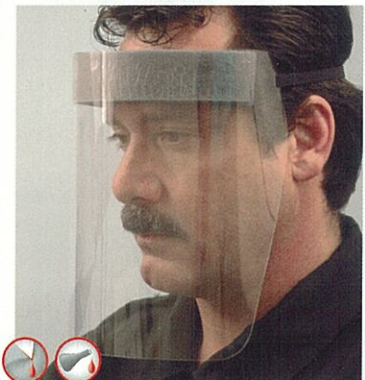
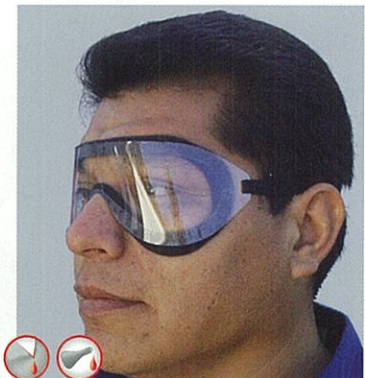


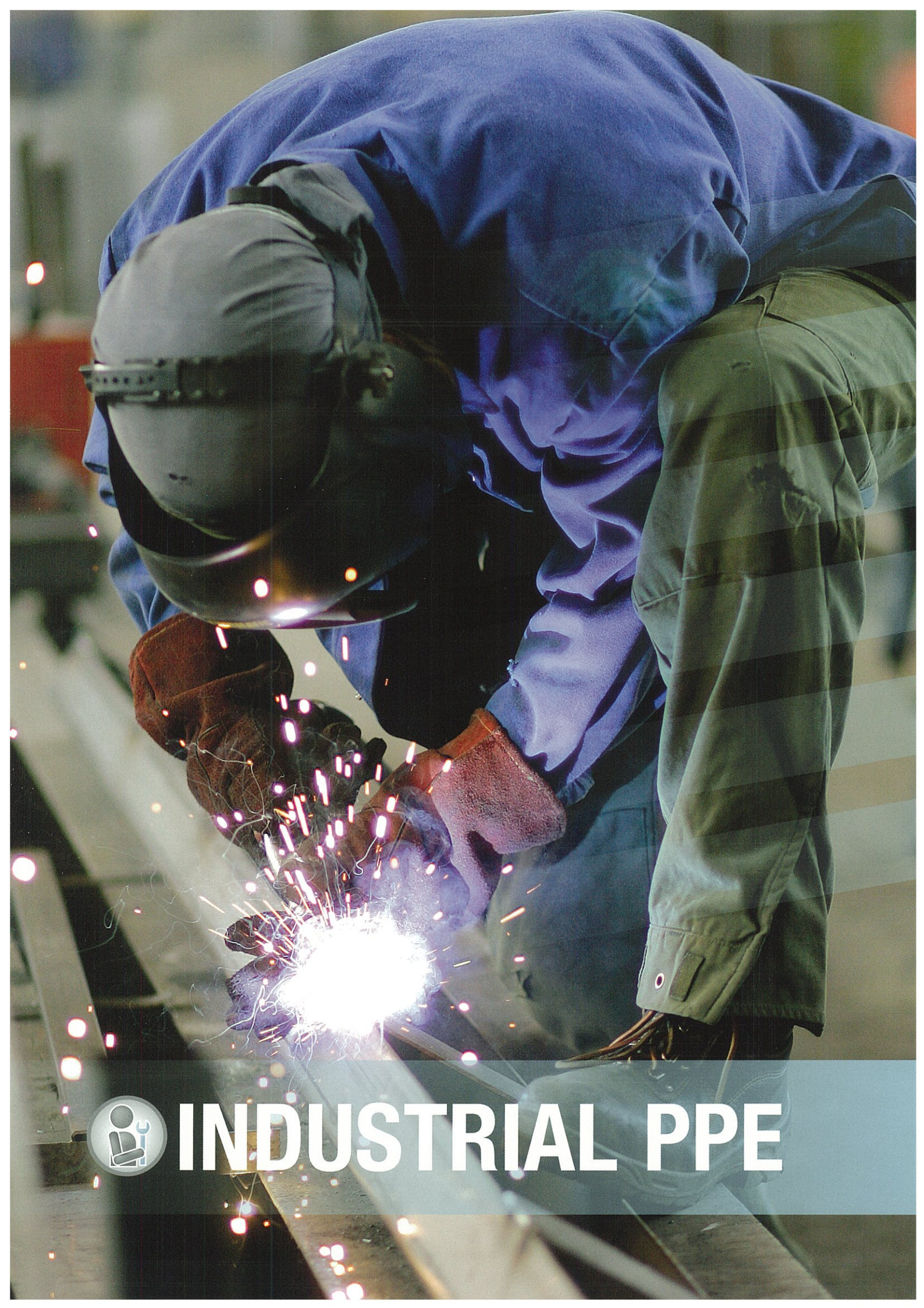
PAULSON's Infectious Disease Control (IDC)

The PAULSON infectious disease control (IDC) product line is greatly appreciated in first aid operations. The disposable goggles and face shields should be available in all ambulance vehicles and rescue vans and in private cars as well. These simple products protect against spittle and blood or prevent victims and medical staff from getting dust in their eyes when a helicopter is landing. Furthermore we depict the IDC goggle as the "Escape" goggle as it can help people evacuate safely and quickly from a burning building by keeping the smoke free from their eyes. A sure field of vision is a life saved!

Also consider our IM22 series face shields for additional face protection or select one of our fragments protective face shields like DK5X series for search and rescue operations in explosive environments.

PAULSON gold coated face shields that reflect heat radiation (IR) like the gold coated fire fighting goggle help "look through the fire" as the filter characteristics of gold sort out glaring components of the fire light which are very important features when approaching large fires or recognizing victims behind a "wall of fire".





INDUSTRIAL PPE



“Product Cube”



Goggles



Face Shields



Headgear



Helmet Brackets



ArcShield

PAULSON's INDUSTRIAL PPE

Each work place has its own requirements in work safety and each professional has their particular working habits on how to perform the job at their best. In most cases people discussing Personal Protective Equipment (PPE) are considering severe incidents like explosions, extreme heat or the hazards of chemicals. Of course PAULSON products will protect a person against these extraordinary incidents however we must also consider the average work place in which our products can ease the profes-

sional's life and support them in doing their job safely and properly.

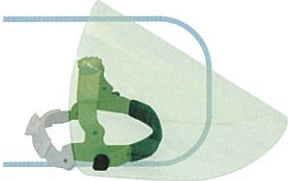
Remember, only PPE that is worn can protect and in supplying products with superior optics that are lightweight, comfortable and easy to use, these are the key factors to convenient and accepted PPE. Along with high quality materials manufactured to unique protective solutions, these are PAULSON's contributions for a safer work environment.

PAULSON is in a continuous exchange with safety specialists all over the world from numerous industrial sectors investigating accidents and how we can improve our products to keep these unfortunate mishaps down.



“Product Cube”

The three dimensions of protective system solutions



Material, Production Method

Polycarbonate, Injection Molded

Polycarbonate, Sheet Material

Propionate, Injection Molded

Acetate, Sheet Material

PETG, Sheet Material

Clear, UV-Filter

Light Enhancing Green

Medium Green

Dark Green

Shade 5 Welding

Gold Coating

Tinting, Coating

Shape

“Square”

Flat „Square“ for Chin Protector Attachment

Long Curved Shape with Intergrated Large Side Shields

Long Curved Shape with Intergrated Large Side Shields
with straight edge for Chin Protector Attachment

Long Curved Shape with Intergrated Extreme Large Side Shields

“Bubble”

“Pointed”

Product Design

- Product design, e.g., fitting the shape of the face according to the latest scientific and ergonomic studies
- CAD driven product development
- Material selection according to the findings on allergic compatibility and optical properties
- In-house mould manufacturing for quality with design and optical correctness
- Optical test lab to validate the optical characteristics of PAULSON lens modules
- Climate & aging tests

PAULSON’s “Product Cube”

PAULSON offers a wide variety of eye and face protective products made from different materials provided with various tinting and coatings and manufactured in numerous shapes. In order to find the product that supports and protects the best, we would like to discuss the working environment. What are the light conditions? What other variables other than visible radiation has to be taken into consideration? What are the typical head movements during work? What kind of hazards are to be expected and from which direction? Do people wear a helmet and what type of helmet is it?

Your PAULSON authorized distributor is trained to support you in assessing all these details, determining the material, shape and an appropriate tinting and coating. With your selection made, you will be able to pick from one of hundreds of PAULSON products that best fit your individual requirements.



Please find some examples with the following:

Hard Coating

(also called Anti-Scratch Coating)

- Improves the abrasive properties of plastics like polycarbonate (naturally scratch susceptible)
- Not required for acetate products (material matrix)

Anti-Fog Coating

- Protects a surface from getting covered with small droplets of condensation, typically when inside and outside temperatures are significantly different from one another
- Many PAULSON products are provided with an anti-fog coating on both sides of the product thus avoiding fogging e.g., of goggle lenses, when changing from hot to cold environments and vice versa.



Example 1

IM11-L6F "Bubble-Shield"

Shape:

"Bubble"

- Provides superior view without any parallax. Optical path always orthogonal to the face shield
- Ergonomically shaped face shield follows the shape of the face thus providing better protection as it can be worn closer to the face
- Built in chin protector
- Prevents bumping the head + gears

Tinting/Coating:

None, UV Filter, Hard Coated

- Highest visible light transmission
- UV filter fatiguing light (also from artificial sources)

Material:

High grade polycarbonate (LEXAN™ or MAKROLON™), injection moulded

- Superior optical quality
- High impact resistance
- High temperature stability

Applications:

In medical surgeries, pharmaceutical and food industry or steamy work environments. Face shield typically worn together with a hood or balaclava.

Materials and Production Methods

Legend:

+++	superior
o	not recommended
--	sufficient

	Impact Performance	Hi/Lo Temp. Resistance	Resistance against Chemicals	Lightweight, Flexibility	Optical Properties	Inherent Scratch Resistance	Available with Hard Coating
APEC, Injection Molded	+++	+	+	o	++	-	++
LEXAN™, Injection Molded	++	++	o	o	++	-	++
LEXAN™, fabricated from Sheet Material	++	++	o	+	+	-	++
Propionate, Injection Molded	+	+	+	o	++	o	
Acetate, fabricated from Sheet Material	o	-	++	+	+	++	
PETG, fabricated from Sheet Material	-	--	+	++	+	o	





Examples

With the following we find some examples:

Example 2

S20-A4F, to be worn with head gear

Shape:

"Pointed"

- Built in chin protection
- Provides full view through the chin protection
- Protection against chemical splashes is better than with another shape or chin protector
- While performing overhead work the neck stays protected

Tinting/Coating:

None

- The material develops its own scratch resistant "skin" during the production process and does not need additional hard coating
- The thin high quality material provides very good optical properties

Material:

Acetate

- The material allows us to produce flexible and lightweight face shields
- Very good resistance against chemicals

Application:

A lightweight shield ideal for applications in the chemical industry and for spray painting as it is easy to clean



S20-A4F



Example 3

IM22-GHC6F:

Gold coated face shield, to be worn with a helmet and or bracket

Shape:

"Long Curved"

- Built in "Integrated Neck Protection" due to long shape
- Built in side shield: face + (partly) neck "wrapped" in the shield
- Shield is reinforced by the chest
- No open gaps if head is turned down

Tinting/Coating:

Gold Coating (true 24 carat gold layer)

- Reflecting much more than 1.000 °C (radiation heat, IR reflecting)
- Additional UV protection by UV light Reflection

Material:

Polycarbonate

Applications:

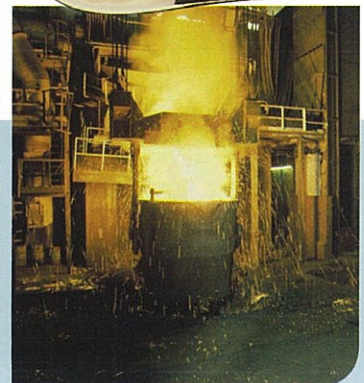
Molten Metal Industry

- Work at high temperature furnaces and or cast processes, handling of melts
- For glare environments the gold coating can be combined with green tinted shields

The gold coating provides a unique filter characteristic for optimal recognition of impurities in the melts, e.g., assisting the ladle man scraping the slag off the melt.



IM22-GHC6F



Industrial Goggle



Unique eye protection in severe industrial environments

Example 4

IM20-Series, tinted face shields to be worn with headgear

Shape:

“Long Curved”

- Built in “Integrated Neck Protection” due to long shape
- Built in side shield: face + (partly) neck “wrapped” in the shield
- Shield is reinforced by the chest
- No open gaps if the head is turned down

Tinting/Coating

- Neutral Grey (Smoke): light reduction, spectrum neutral filter, true colour perception

or:

- Medium/Dark Green: filters aside to a wavelength of 550nm, lets pass greenish light providing highest contrast (maximum receptivity for human eyes), filter out disturbing and or fatiguing colour portion.
- Can be combined with gold coating for reflection of IR radiation

Material:

Propionate or Polycarbonate

Applications:

Various operations in glare environments, e.g., painting or gas welding (in combination with infra-red absorbers). Select propionate shield for standard or polycarbonate shield for extreme hot environments or to protect against severe impacts (e.g., molten metal industry).



IM20-Series



Industrial Goggle

Together with the PAULSON lens modules for the 510-C series the PAULSON industrial goggles are the most protective chemical goggles available on the market.

The injection moulded LEXAN™ lenses in combination with the liquid splash seal and chemically neutral silicone frame provide a unique eye protective tool for applications in the chemical industry.

If no other goggle provides satisfaction in protection (e.g., in very hot and steamy environments, against mechanical impacts or chemical splashes) select a PAULSON's “Chemical Goggle”



510 Goggle Series



These examples show how the properties of the three cube axes can be combined according to the application. For further discussions contact our distributors or our PAULSON experts at info@paulson-international.com or fill out the contact form at our web portal www.paulson-international.com





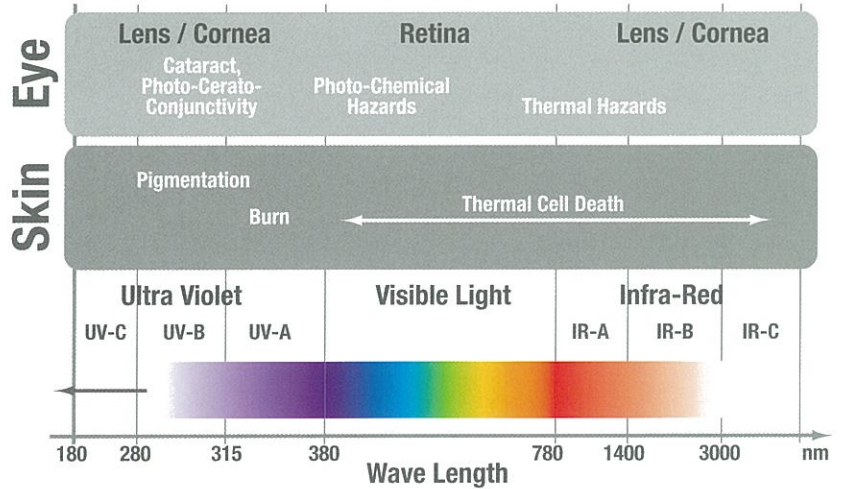
Arc Flash – Considerations on Hazards and Risks

About Arc Flash

An arc flash (or arc blast) incident is a kind of “lightning” in an electrical circuit that results from a fault in a high current electrical system, regardless whether this is a low, medium, or high voltage system. The “lightning” comes from ionized gas, so called plasma, in case of an accident replacing the conductor.

An arc flash can be hotter than the surface of the sun. Typically, the arc flash is triggered e.g., when a short circuit occurs in electrical switchgear, often during maintenance work. An arc flash can only occur if the fault current is very high, several tens of thousands of amps. The massive energy released in the fault instantly vaporizes the metal conductors involved, blasting molten metal and expanding plasma outward with extreme force. In addition to the explosive blast of such a fault, much of the destruction arises from the intense radiant heat produced by the arc. Everybody knows artificial electrical arcs from arc welding, physically seen, an arc flash is the same but with magnitudes of higher intensity. The metal plasma arc produces tremendous amounts of light energy from far infrared to ultraviolet. Surfaces of nearby people and objects absorb this energy and are instantly heated to vaporizing temperatures. The effects of this can be seen on adjacent walls and equipment; they are often ablated and eroded from the radiant effects.

Arc Flash – Considerations on Hazards & Risks



The Reason – Only a Bagatelle

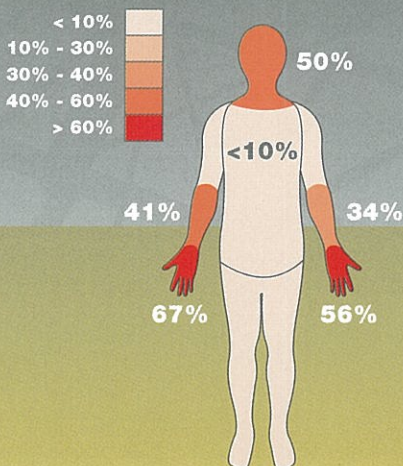
- A loose cable connector
- A forgotten tool
- Or just some dirt getting released when the cabinet door is opened

The Incident – A Disaster

- An explosively expanding heat ball of ionized gas (plasma)
- Droplets of molten particles
- Fragments released by the pressure wave
- High energy heat rays (IR Radiation)
- High values of electro-magnetic radiation

Distribution of thermal injuries:

Aside to the hands, the head, especially the face is the most endangered part of a worker.



Paulson high-tech arc flash protection

The Solution - ArcShield

An arc flash can be hotter than the surface of the sun, so the materials used for the construction of the ArcShield needed to be specialized. To protect the face of the worker from radiation, the ArcShield is a patented blend of multiple materials. This includes special visible dye, laser absorbing compounds, oils and lubricants. The ArcShield is designed to give up it's surface, (so called Ablation) so the intense energy can self protect the balance of material. After an arc flash the ArcShield weighs less than before the blast.

A clear plastic face shield is not sufficient!

Plastic shields manufactured from polycarbonate, propionate or acetate providing a sufficient thickness can protect against:

- Convexional heat (the plasma "Heat Ball")
- Fragments (primarily or secondarily released by the explosion)
- Molten particles (e.g. from the electrodes, "arc feet")

however they are designed to let electromagnetic radiation pass through. With ultra-violet filters (UV blocker) a part of this tremendous energy can be absorbed but scientific findings have proved that this is by far not enough. The intensity of visible light is high enough too irreversibly injure human eyes and the infra-red (IR) radiation can burn eyes and skin.

For optimal protection we need an "intelligent" face protection providing:

- Contrast enhancement
- High visible light transmission (up to VLT 70% !!!)
- True colour impression for a broad range of visible light. Under normal conditions the highest possible absorption of radiation from UV to IR.



PAULSON ArcShield, a patented method allows a controlled surface ablation and through this absorption of that energy a regular face shield would fail to protect the wearer.

