



#### **PRODUCTION FACILITIES ACROSS THE GLOBE**





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# NTENI



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#### HAND PROTECTION IN THE CONSTRUCTION INDUSTRY







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## **PROTECT WHAT MATTERS**

Hands provide 70% of man's total motor abilities.

Endowed with exceptional mobility and agility, the hand is a highly developed tool comprising 27 bones, several metres of blood vessels and thousands of nerve endings. Our skin is the first layer of protection and, efficient though it may be, it offers limited resistance to the cold or other dangers such as cuts and blows.

## Always Innovating. Never Imitating.

Beginning with the world's first PVC and Single Use Nitrile gloves, we've always led the pack with better, safer ways for you to work with your hands.

We combine our technological expertise and mastery of design with an intimate understanding of our customers, their work and the protection they need to go above and beyond. This approach enables us to take protection to the next level with advancements like our cutresistant **Hagane Coil**<sup>®</sup> and **S-TEX** range, which can withstand up to 40N force unlike any other glove on the market. Our standard is the highest standard of performance and safety, providing you the ultimate defense, no matter what task awaits you.

## Quality is woven into every fibre of our organization.

We have full control of our industrial ecosystem, enabling us to maintain consistent quality and achieve perfection at every level. We perform every possible resistance test in our labs to ensure that each glove is fit for work before packaging and delivery. All of our production sites around the world are ISO 9001 certified and embrace our relentless pursuit of excellence.

## BETTER-PROTECTED USERS

It is a mistake to believe that for a glove to be good, it just needs to meet current standards and prevent whatever risk the user is facing. The reality is much more complicated than it appears.

Whatever the industry, working conditions or application, the glove needs to be as comfortable as possible. Comfort is paramount as, without this essential quality, the worker's safety would be considerably reduced.

Historically, a lot of construction workers would not wear gloves because it limited their dexterity and prevented them from doing their jobs correctly. Despite the risks, they found it more practical to work without protective gloves. Faced with this situation, manufacturers of personal protective equipment, especially SHOWA, have developed solutions that enable everyone to benefit from increased comfort and exemplary protection.

By developing ergonomic glove ranges that perfectly follow the shape of the hand and as the first company to develop seamless, coated gloves and certain high-performance fibres, SHOWA is a forerunner in numerous technological advancements. Providing a high level of protection against mechanical and chemical risks, SHOWA gloves always offer more comfort, flexibility and accuracy than any other brand.

# 100%

## Integrated Manufacturer Since 1951

By owning all of our manufacturing, design and inspection processes, we create our own machinery, yarns, coatings, polymers and hand formers. This unchallenged level of control fuels our innovation process, resulting in unreplicable products and technology that give us a significant advantage over our competition.

## **COMMITTED TO FAIR LABOUR**

The Business Social Compliance Initiative (BSCI) is a business-driven initiative for companies committed to social responsibility in their supply chain, regardless of their size, sector or industry. BSCI offers companies one common Code of Conduct and a holistic system to foster better working conditions in global supply chains. The BSCI Code of Conduct is based on the most important international labour standards protecting workers' rights. It sets out 11 core labour rights, which BSCI participants commit to implement and monitor with their business partners within their supply chains.

SHOWA is committed to improving working conditions, engaging with stakeholders and endorsing the BSCI Code of Conduct and Appendices. We believe that compliance with local regulations and core social standards defined by international organisations for labour and human rights is an opportunity for further improving the working conditions in our integrated supply chain.

## SHOWA agrees to respect the following labour principles set out in the BSCI Code of Conduct.

#### **BSCI Principles**



#### THE RIGHTS OF FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING

Our enterprise respects the right of workers to form unions or other kinds of workers' associations and to engage in collective bargaining.



#### FAIR REMUNERATION

Our enterprise respects the right of workers to receive fair remuneration.



#### OCCUPATIONAL HEALTH AND SAFETY Our enterprise ensures a healthy and safe working environment, assessing risks and taking all

environment, assessing risks and taking all necessary measures to eliminate or reduce them.



**SPECIAL PROTECTION FOR YOUNG WORKERS** Our enterprise provides special protection to any workers that are not yet adults.



#### NO BONDED LABOUR

Our enterprise does not engage in any form of forced servitude, trafficked or non-voluntary labour.



#### ETHICAL BUSINESS BEHAVIOUR

Our enterprise does not tolerate any acts of corruption, extortion, embezzlement or bribery.



#### NO DISCRIMINATION

Our enterprise provides equal opportunities and does not discriminate against workers.

Our enterprise follows local laws/regulations



#### NO CHILD LABOUR

Our enterprise does not hire any worker below the legal minimum age.



#### NO PRECARIOUS EMPLOYMENT

**DECENT WORKING HOURS** 

regarding hours of work.

Our enterprise hires workers on the basis of documented contracts according to the law.

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#### PROTECTION OF THE ENVIRONMENT

Our enterprise takes the necessary measures to avoid environmental degradation.

Source: www.bsci-intl.org

## **COMMITTED TO SAFE MANUFACTURING**



REACH is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by

chemicals, while enhancing the competitiveness of the EU chemicals industry. It also promotes alternative methods for the hazard assessment of substances in order to reduce the number of tests on animals. REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH establishes procedures for collecting and assessing information on the properties and hazards of substances. SHOWA's whole manufacturing process is in line with the requirements of the European REACH Regulation. All SHOWA products today and in the future will remain free from substances of very high concern (SVHC).

# EUROPEAN STANDARDS FOR PPE

The **European Directive 89/686/EEC** on PPE has been superseded by the new **PPE Regulation (EU) 2016/425**. This Regulation, that introduces revisions in several PPE standards such as EN 388 and EN 374, was published in the Official Journal of the European Union on 31<sup>st</sup> March 2016 and is being applied as of 21<sup>st</sup> April 2018. The existing certificates according to the Directive will remain valid until 21<sup>st</sup> April 2023. For more information on the revision of the Directive and its implications, please visit the SHOWA group website.

SHOWA has recertified all products according to the new regulations, and these changes can be seen on the technical documentation available from the website.

Please note that products manufactured after the recertification will have the updated norms on the glove stamp. Gloves manufactured before the recertification will have the old norms. This is not a reflection on the quality of the gloves and they can still be used.

#### **CE CATEGORY**

European Directive 89/686/EEC

CE

CATEGORY I CATEGORY II

CATEGORY III

Minor risks. Reversible risks (injury), certified compliant by a notified body. Irreversible risks (corrosion), certified compliant and tested by a notified body whose number is specified.

EN 420 General requirements and test methods • Technical information\*

- Glove markings
- Sizes
- Level of dexterity (1 to 5)
- Innocuousness of the glove



\* Printed on the packaging or on the user instruction of SHOWA gloves. For further details, contact your distributor or visit the website **www.SHOWAgroup.com** 

EN ISO 374-1: 2016

The standard defines requirement for the capability of gloves to protect the user against penetration, permeation and degradation by chemicals and microorganisms. It classifies three types of gloves by level of protection (A, B, and C).

#### EN 16523-1: 2015

(replaces EN 374-3) Resistance to chemical permeation



Transition period until 21st April 2023

ThemRest

See more at ChemRest.com Test method to measure the resistance of the PPE material to permeation by hazardous chemicals at molecular level and under continuous contact. The resulting value is the breakthrough time or the time needed by the hazardous liquid or gas to get in contact with the skin. The glove is classified in terms of breakthrough time performance level 1 to 6.

> 10 1 > 30 2 > 60 3 > 120 4 > 240 5 > 480 6

The standard defines a list of 18 chemicals. The minimum breakthrough time for a Type A glove is 30 mins (Level 2) for 6 chemicals, for a Type B it is 30 mins for at least 3 chemicals, and for Type C it is 10 mins (Level 1) for at least 1 chemical on the list.

Type of gloves	Breakthrough time
А	≥30 min for at least 6 chemicals
В	≥30 min for at least 3 chemicals
С	≥10 min for at least 1 chemical



List of chemicals:

any code letter.

	Letter code	Chemical	CAS number	Class
	А	Methanol	67-56-1	Primary alcohol
	В	Acetone	67-64-1	Ketone
	С	Acetonitrile	75-05-8	Nitrile compound
	D	Dichloromethane	75-09-2	Chlorinated hydrocarbon
	E	Carbon disulphide	75-15-0	Organic compound containing sulphur
	F	Toluene	108-88-3	Aromatic hydrocarbon
	G	Diethylamine	109-89-7	Amine
	н	Tetrahydrofurane	109-99-9	Heterocyclic ether
	I	Ethyl acetate	141-78-6	Ester
	J	n-Heptane	142-82-5	Saturated hydrocarbon
	К	Caustic soda 40%	1310-73-2	Inorganic base
	L	Sulfuric acid 97%	7664-93-9	Inorganic mineral acid
	М	65% Nitric acid	7697-37-2	Inorganic mineral acid, oxidizing
	Ν	99% Acetic acid	64-19-7	Organic acid
	0	25% Ammonium hydroxide	1336-21-6	Organic base
	Р	30% Hydrogen peroxide	7722-84-1	Peroxide
	S	40% Hydrofluoric acid	7664-39-3	Inorganic mineral acid, contact poison
•۲	Т	37% Formaldehyde	50-00-0	Aldehyde

#### EN ISO 374-5: 2016

**VEW CHEMICALS** 

Protection against micro-organisms



VIRUS

Micro-organisms are defined by the standard as bacteria, fungi or viruses. To claim resistance to bacteria and fungi the glove must pass the penetration resistance test according to standard EN 374-5: 2016. If the glove passes ISO 16604: 2004 (method B) test it can claim resistance to viruses as well, and the term "VIRUS" will be added below the biohazard pictogram.

#### EN 388: 2016

Mechanical risks



#### A) ABRASION RESISTANCE (0-4)

Number of cycles required to abrade a hole using abrasive paper in a circular sample of glove material under constant pressure and motion.

#### **B) BLADE CUT RESISTANCE BY COUP TEST (0-5)**

Number of cycles required to cut a sample using a stainless steel circular blade under constant speed and low force of 5 newtons (approx. 510g). For materials that dull the blade, after a certain number of cycles without cut through, the ISO 13997 test is performed and becomes the reference cut resistance value.

#### C) TEAR RESISTANCE (0-4)

Force required to propagate a tear in a rectangular sample of a glove with a starting incision, to a maximum force of 75N (approx. 7,6kg).

#### **D) PUNCTURE RESISTANCE (0-4)**

Force required to puncture the sample with a standard size steel point at a constant speed of 10 cm/min.

#### E) BLADE CUT RESISTANCE BY ISO TEST (A-F)

Force in newtons (N) required to cut through a sample using a rectangular blade in a specified cut test machine such as Tomodynamometer (TDM). This test is optional unless the blade in Coup test becomes dull, whereupon it becomes the reference for cut resistance. A letter value is assigned as follows:

Level of protection	Α	В	С	D	E	F
Force in newtons	>2	≥5	≥10	≥15	≥22	≥30
Cut resistance	LOW	MEDIUM			HIGH	

#### F) IMPACT RESISTANCE (P)

For protective gloves claiming impact resistance. Measures dissipation of force by the area of protection upon an impact of a domed anvil at an impact energy of 5 joules. Testing is carried out in accordance with the impact protection test for motorcycle protective gloves of EN 13594:2015 standard. A letter "P" is added on successful pass, while a fail remains unmarked.

Level X can also be applied for a - f above, which means "not tested".

Level of protection	1	2	3	4	5
Abrasion resistance (number of cycles)	>100	≥500	≥2000	≥8000	-
Blade cut resistance by Coup test (index)	>1,2	≥2,5	≥5	≥10	≥20
Tear resistance (force in newtons)	>10	≥25	≥50	≥75	-
Puncture resistance (force in newtons)	>20	≥60	≥100	≥150	-

#### EN 511: 2011

Cold-related risks



Tested levels of glove performance in terms of the following risks:

- Climatic or industrial cold transmitted by convection (0 to 4).
- Climatic or industrial cold transmitted by contact (0 to 4).
- Impermeability to water (0 or 1).

If the glove shows this symbol, it has achieved a performance index for (from left to right) climatic cold or industrial cold transmitted by convection, climatic cold or industrial cold transmitted by contact, impermeability to water.

"O" means that during the test level 1 was not reached.

"X" means that the test was not performed or not possible.

#### EN 407: 2011

Heat-related risks



Tested levels of glove performance in terms of the following risks:

- Resistance to flammability (0 to 4)
- Resistance to contact heat (0 to 4)
- Resistance to convective heat (0 to 3)
- Resistance to radiant heat (0 to 4)
- Resistance to small splashes of molten metal (0 or 1)
- Resistance to large splashes of molten metal (0 or 1)
- "O" means that during the test level 1 was not reached.
- "X" means that the test was not performed or not possible.

## EN 1149-1

Antistatic properties

Tested level of glove surface resistivity. Measured in ohms/square ( $\Omega$ ), this indicates the capacity of the glove to disperse via a dissipative and/or conductive effect the accumulated static electricity discharges on the operator's hand.

### RISKS RELATED TO FOOD CONTACT

It is applied to materials and articles that, at finished state, are intended to come into contact or are brought into contact with foodstuffs or with water that is for human consumption. According to Regulation 1935/2004: «The materials and articles must be manufactured in accordance with good manufacturing practice so that, under normal or foreseeable conditions for their use, they do not transfer their constituents to food in quantities which could:

- Present a danger to human health,
- Results in an unacceptable change in the composition of the foodstuffs or a deterioration in the organoleptic characteristics thereof.»

All SHOWA gloves with the «food contact» logo are conform to Regulation (EU) No 1935/2004 and the Regulation (EU) No 2023/2006.

## EUROPEAN DIRECTIVE 93/42/EEC Covering medical examination and surgical gloves

<b>EN 455-1</b> Freedom from holes	A random sample of leak penetration tes completely leak pro AQL value, which fo	A random sample of gloves is tested for freedom of holes by undergoing a water leak penetration test. The gloves are filled with 1l of water and must remain completely leak proof over a defined period of time. A failed test results in a higher AQL value, which for medical gloves sold in Europe must be 1,5 or lower.			
	AQL (accepted quality level) is a quality sampling procedure ISO 2859-1 used by manufacturers for measuring the % likelihood of pinhole defects in a batch of single use gloves. An AQL of 1,5 brings a statistical probability that less than 1,5% of the gloves in the batch will have defects.				
<b>EN 455-2</b> Physical properties	Size and tensile strength requirements for single use medical gloves. No less than 240mm in median length and 95mm (±10mm) median width to provide adequate protection along full length of the hand (exception for long cuff gloves).				
	Strength is measured by elongation until breaking point, indicated as Force At Break (FAB) in newtons (N). FAB is measured on standard sample and on a rapid aged sample that is kept at 70°C for 7 days to simulate glove deterioration during prolonged shelf life. FAB requirements differ per glove material and if the glove is for examination or surgical purpose. Indication of median minimum FAB values:				
	Force at break (N) during shelf life				
		<b>Rubbers</b> (e.g. natural latex, nitrile)	<b>Thermoplastics</b> (e.g. PVC, vinyl, butyl)		
	Examination glove ≥ 6,0 ≥ 3,6				
	Surgical glove	≥ 9,0	-		

## EN 455-3

**Biological evaluation** 

A number of important requirements are specified to maintain biological safety of the glove for the medical practitioner as well as the patient. "LATEX" pictogram on packaging for natural latex rubber gloves is mandatory. No terms suggesting relative safety of usage are permitted i.e. low allergenicity, hypoallergenicity or low protein content. Powder residue, which is seen as unwanted contaminant on medical gloves, must not exceed 2mg per glove with "powder-free" claim. Water extractable latex protein content in latex gloves must not exceed 50 microgram per gram of rubber to minimize latex exposure that can cause allergic reactions. The level of endotoxins generated by bacteria on sterile gloves that claim "low endotoxin level" may not exceed 20 EU per glove pair (EU=Endotoxin Units).

#### EN 455-4 Shelf life determination

The standard ensures there is no performance degradation during storage period prior to use. Accelerated aging tests are performed on glove samples to determine shelf life, to enable manufacturers to prove that their product will withstand (usually) up to 3 years and in some cases up to 5 years without losing their strength and protection properties.

# MATERIALS and their PERFORMANCES

SHOWA: a wide range of materials and coatings. Compare the strengths and drawbacks of each and choose the compositions that best meet your needs!



#### COTTON

Natural cellulose fibre. Flexible, soft and non-irritating, it protects against mechanical aggression (impacts, low vibration, iron filings, splinters, glass fragments), absorbs perspiration and gives you great comfort when wearing dipped protective gloves continuously. Cotton fibres are mixed with polyester fibres in order to associate comfort with a higher mechanical resistance and more elasticity.

#### NYLON

A lightweight elastic polyamide which is largely lint-free and washable, dries quickly and is resistant to abrasion and deformation. Mixed with cotton and acrylic, it makes the glove more flexible and extends its lifetime.

#### ACRYLIC

A polymer that is resistant to water, common solvents, acids and weak alkalis, and that is resistant to abrasion and to traction. Soft and warm, it insulates you from the cold. Mixed with cotton, it makes the knit more lightweight.

#### HPPE

High performance polyethylene is flexible, light and durable. As resistant to cutting as a para-aramid but with more resistance to abrasion (ten times more resistant to flexion than a wire), it remains resistant to chemicals, in particular solvents.

#### **KEVLAR®**

It is lightweight, supple, comfortable and washable. It provides effective protection from cuts (above level 5, with stainless steel reinforcing) and from convective heat and offers durability and performance that far exceed that of leather (5 times higher) and cotton (3 times higher).

## EACH COATING HAS ITS QUALITIES!

	Description	Strengths	Weaknesses
NITRILE	Anti-slip vulcanised synthetic rubber	<ul> <li>Excellent abrasion and cut resistance</li> <li>Three times the puncture resistance of latex</li> <li>Good mechanical performance</li> <li>Excellent resistance to oil, grease and hydrocarbons</li> <li>Good resistance to acids, certain organic solvents, pesticides, oils and fuels</li> <li>No latex proteins</li> <li>Heat resistance (but no flame resistance)</li> </ul>	<ul> <li>Relatively rigid</li> <li>Normally low tear resistance</li> <li>No chemical resistance against ketones and some chlorinated hydrocarbons methylene chloride and trichloroethylene)</li> </ul>
NATURAL LATEX	Natural rubber mainly from latex and the rubber tree	<ul> <li>Very flexible and elastic</li> <li>Good grip</li> <li>Excellent resistance to tearing and bending</li> <li>Good resistance to abrasion</li> <li>Very robust</li> <li>Waterproof</li> <li>Protects against weak acids, caustics, alcohols and detergents</li> <li>Protection viruses and bacteria</li> </ul>	<ul> <li>Poor chemical resistance against oils, greases, hydrocarbons and organic solvents</li> <li>Proteins may cause allergies</li> </ul>
POLYURE- THANE (PU)	Plastic that is microporous elastomer	<ul> <li>Very flexible and elastic</li> <li>No latex proteins</li> <li>Clean - does not shed particles like other polymers</li> <li>Good resistance to abrasion</li> <li>Good resistance to oil</li> <li>Does not harden in the cold</li> <li>Does not soften in the heat</li> <li>Excellent perspiration thanks to porous ventilation</li> </ul>	<ul> <li>Low chemical resistance</li> <li>Poor resistance to hot water</li> </ul>
PVC (POLY VINYL CHLORIDE)	Impermeable plastic	<ul> <li>Flexible at even -20°C</li> <li>Material softened by a plasticizer</li> <li>Good electrical insulator</li> <li>High chemical resistance</li> </ul>	<ul> <li>Low resistance to cuts, puncturing and heat</li> <li>Single use PVC gloves might have pinholes</li> <li>Low resistance to solvents</li> </ul>
NEOPRENE	Polychloroprene synthetic rubber	<ul> <li>Flexible and soft like natural rubber</li> <li>No latex proteins</li> <li>Good abrasion and cut resistant</li> <li>Chemical protection against acids, alcohols, fats, ketones, organic and inorganic solvents, oils, greases and petrochemicals</li> <li>Heat resistant and flame resistant</li> </ul>	<ul> <li>Poor grip when wet</li> <li>No chemical resistance against chlorinated hydrocarbon solvents</li> </ul>
BUTYL	Synthetic rubber polymer for heavy chemical protection	<ul> <li>Very elastic, even at low temperatures</li> <li>Excellent chemical resistance against ketones (MEK, acetone) and acids</li> <li>Low gas permeability</li> </ul>	<ul> <li>Limited grip</li> <li>Limited dexterity</li> <li>Poor mechanical resistance</li> <li>Poor resistance to aliphatic hydrocarbons (hexane, diesel, gasoline), aromatic hydrocarbons (benzene, toluene, xylene) and halogenated solvents (chloroform and chlorobenzene)</li> </ul>
VITON	Synthetic rubber polymer – the last resort	<ul> <li>Protects where nothing else protects</li> <li>Chemical protection against PCBs</li> <li>Excellent chemical protection against chlorinated, aliphatic and aromatic hydrocarbons</li> </ul>	<ul> <li>Limited grip</li> <li>Limited dexterity</li> <li>Not suitable for ketones, esters and nitro compounds</li> </ul>

## INVESTING IN TOMORROW

We do all that we can to make a positive impact within our company, through our products and for our planet, always seeking better ways to meet the demands of today without compromising tomorrow.

This is why a large proportion of our research is devoted to biodegradable products and to developing fibres that have a reduced impact on the environment. Our efforts to reuse and conserve resources in Japan have enabled us to obtain the ISO 14001 certification -a global standard in environmental management that helps us to continually improve our operations.

SHOWA R&D reaches a major breakthrough with ECO BEST TECHNOLOGY<sup>®</sup> (EBT<sup>®</sup>). EBT<sup>®</sup> accelerates the biodegradation of nitrile in biologically active landfills and anaerobic digesters as validated by independent certified laboratories using internationally recognized test methods (ASTM D5511). EBT<sup>®</sup> is composed of organic materials designed to make the gloves attractive to microbial activity. These microorganisms upon consuming the EBT<sup>®</sup> material excrete enzymes that depolymerize the nitrile in 1-5 years. The final result is biogases and inert humus.



#### SHOWA NSK24 CHEMICAL GLOVE

Engineered to protect hands and arms from tenacious chemicals, oils and abrasions, the NSK 24 is now also available with our revolutionary EBT\* technology. The double nitrile coating and cotton interlock liner is a no brainer choice for wet and greasy applications in the fishing, petro-chemical or agriculture sectors. Did we mention its EU Food safe approved as well?

## p.74 SHOWA 731 CHEMICAL

GLOVE

Created with premium-grade polymers and nitrile reinforcement, SHOWA 731 is a flock-lined 15 mil nitrile glove that brings you the pinnacle of tactile precision and high-capacity protection against solvents and acids. Using revolutionary EBT\*, this midforearm gauntlet is designed for multiple uses and a range of applications, from food processing to manufacturing, janitorial to refinery operations.

#### SHOWA 707HVO CHEMICAL GLOVE

Crafted with SHOWA's revolutionary EBT, SHOWA 707HVO blends the best of single use and chemical resistant technology to deliver optimum fit, feel and comfort while protecting against chemicals. Its fluorescent orange colour makes it an excellent choice for food, janitorial or sanitation environments, or to separate applications on processing floors.



#### SHOWA 6110PF SINGLE USE GLOVE

The inventors of the world's first single use nitrile glove bring you the world's first biodegradable single use nitrile glove. Regular nitrile gloves cannot attract enough (if any) microbial activity to begin breaking down the polymer's molecular structure, thus leaving the process of reclamation to light, heat, mechanical stress and moisture... unlike the SHOWA 6110PF biodegradable glove.

SWY WEST



## Eco Best Technology®

## Protection & Preservation in **ONE**

Our Eco Best Technology<sup>®</sup> (EBT<sup>®</sup>) is the breakthrough innovation that gave rise to the world's first biodegradable nitrile glove. EBT<sup>®</sup> is composed of organic materials that accelerate the biodegradation of nitrile in biologically active landfills.

#### BIODEGRADABLE IN 1-5 YEARS

Protection is our first priority. With SHOWA's revolutionary Eco Best Technology" (EBT\*), we provide top of the line hand protection, with a reduced environmental impact on our planet. That's because our gloves made from EBT\* biodegrade in 1-5 years, when disposed of in active landfills.

## REDUCED ENVIRONMENTAL IMPACT

When disposed in landfills, microorganisms consume, metabolize and break down EBT\* materials into three natural compounds- organic soil, methane and carbon dioxide. This creates fertilizer, leaving zero waste behind.



EBT\* requires biologically active landfills for biodegradation. Which means gloves with EBT\* cannot even begin to biodegrade prior to disposal. These abilities have been validated by independent certified laboratories using ASTM International test methods (ASTM DSSII).



Consider the number of single use gloves used every day in hospitals, offices, schools, warehouses, labs and even our own homes. The numbers are astronomical. With EBT\*, each glove's bio-degradation process is accelerated by up to 100 years\*. And every glove makes a difference.

when disposed in active landfills. Actual time may vary depending on climate and location of landfill



#### **COMFORT AND SAFETY GO HAND IN HAND**

At SHOWA we continuously work on improving the wearing experience. Ergonomic shape design, seamless knit liner, engineered fibre for flexibility and tactility are just some of the common features found in our gloves. By making our gloves as comfortable as possible without compromising on safety, we hope that our users will keep the gloves on at all times and stay safe in their workplace. This is particularly important in work that requires high cut protection, because accidents here can lead to serious injuries with grave consequences for both the user and the employer.

#### **THE STORY OF HAGANE COIL®**

Our first notable liner for protection against mechanical risks was seamless knit nylon liner in glove B0500. launched back in 1988. Ensuring both comfort and protection was our aim from the get-go. Sturdy nylon combined with world's first polyurethane palm coating offers both dexterity and good abrasion resistance for general purpose use. Encouraged by this success, over time, SHOWA integrated new fibres and fibre combinations specifically for achieving higher cut resistance. Since then our cut protection gloves have come a long way. High Performance Polyethylene (HPPE) fibres first featured in **SHOWA 541** offer good cut resistance. Liners with integrated fibres such as the Kevlar<sup>®</sup> liner in **GP-KV1** offer even better cut protection.

Development of new cut-resistant technology follows increasing demand for higher cut-resistant protection in work processes. While measuring the levels of cut resistance of different materials in the mesh of the glove, it became evident to our researchers that integration of stainless steel in liners could offer exceptional protection. The research led to development of the **S-TEX KV3**. The Hagane Coil<sup>®</sup> engineered liner was born.

## **STEEL PROTECTION**

With Hagane Coil<sup>®</sup> technology we are able to provide high levels of cut resistance without sacrificing comfort. Hagane Coil<sup>®</sup> utilises a unique coiling technique that binds an attending yarn to a stainless steel core. The integrated steel core provides better protection than any natural or synthetic fibres, yet it is thin enough to allow flexibility and free movement as the hand bends and flexes. By utilising different composite yarns we can create different wearing experience. Soft yarns and stainless steel combinations offer more comfort and dexterity, while hard yarns and stainless steel offer superior protection and durability. It is a combination that offers maximum protection, comfort and performance.

Polyester / nylon
 Stainless steel
 Attending yarn (depending on glove)

2

1



VARIABLE LOAD APPLIED FROM BELOW The revised EN 388: 2016 standard for protective equipment against mechanical risks includes the international test method ISO 13997. This test method is widely used in the textile industry in order to gain a better understanding of the levels of protection. A glove sample is tested against a blade at a variable load in a TDM (Tomo Dynamo Meter) machine. The cut resistance is expressed as the cutting force at breakthrough in newtons (N) NEWTONS

40

30

0

At SHOWA, for gloves with high levels of protection we have already been using ISO 13997 as a compulsory test to show our customer a detailed and realistic view of the glove's cut protection performance.



To provide better individual protection against cuts, SHOWA has engineered several liners with Hagane Coil<sup>®</sup>. This has led to the forming of S-TEX Series, a line that features the best cut resistant gloves that we have to offer.



Hagane Coil® / Latex ISO 13 997: F EN 388 Cut Level F



SHOWA

Hagane Coil® / Microporous foam Nitrile ISO 13 997: E EN 388 Cut Level E



Hagane Coil® / Latex ISO 13 997: D EN 388 Cut Level D



Hagane Coil<sup>®</sup> / Foam nitrile over nitrile **ISO 13 997: D** EN 388 Cut Level D



Hagane Coil® / Foam nitrile over nitrile ISO 13 997: D EN 388 Cut Level D







Hagane Coil® / Polyurethane

**ISO 13 997: D** EN 388 Cut Level D



# 

THE REVISION OF THE PPE REGULATIONS IN 2016 RESULTED IN A MARKET-WIDE DOWNGRADE IN EN 388 AND ANSI 105 CUT LEVEL SCORES FOR RE-CERTIFIED PRODUCTS. ACROSS THE BOARD, GENERAL-PURPOSE GLOVES FOR MEDIUM-LOW RISKS DECREASED FROM CUT LEVEL 5-C/A3 TO 5-B/A2 AND UNDER.





Modern day users have access to enough information on the norm changes to take better responsibility for their cut protection needs. This created an increase in demand for more versatile solutions designed to meet safety and comfort requirements, at a lower price. On the other hand, research shows that many users still wear general purpose gloves with low cut resistance levels – the former EN 388 and ANSI cut 5 being B/ A2. This increases the risks of injuries and jeopardizes workers' safety; ultimately a "lose-lose" situation for the industry.

At SHOWA, we saw these changes as an opportunity to seriously evaluate our product offerings and asked ourselves: **Do our customers really want the cheapest hand-protection solution, or the best value for money?** 

We believe the answer is value for money, so our R&D team developed our latest SHOWA technology, DURACoil<sup>®</sup> – a cut resistant liner that increases the cut protection of multi-purpose gloves without compromising on comfort.

DURACoil® is comprised of two words:

- DURABLE = the gloves are designed for maximum comfort, to be worn for extended periods of time
- **COIL =** the wrapping technique where fibers are coiled over the others in layers





#### HOW DOES IT WORK?

The DURACoil<sup>®</sup> liner is engineered by tightly wrapping multifilament polyester around a cut resistant fiber, then reinforcing it with High-Performance Polyethylene (HPPE). The technique is very important to user comfort; if not done correctly, the fibers will irritate the skin. This therefore creates a premium lightweight yarn that offers comfort, durability, and increased cut protection.



#### WHAT IS MULTIFILAMENT YARN?

A high tenacity yarn that consists of many ultra-fine strands or filaments, wound together in an untwisted or unknotted way. These are smoother to touch, ultra-light and used for sturdy products, such as airbags, mooring lines for ships, and the strings of tennis rackets. Typical multifilament examples are Microfiber and Nanofiber.

## IMAGINE ALL YOU CAN DO WITH A CONSOLIDATED CUT SERIES

SHOWA responds to market demands for a one-stop shop solution with a complete series of seven Cut C/A3 glove models, with SHOWA quality and service at a nominal price.

The new DURACoil<sup>®</sup> glove series caters to a wide range of needs and applications, offering a versatile new range that consolidates your glove inventory for optimized productivity and reduced costs.

By combining the fit, dexterity, and grip needed for multipurpose applications, with the upgraded DURACoil<sup>®</sup> cut-resistant liner, we ensure safe, dry, and comfortable hands. Whether performing tasks in dry, greasy, oily, or wet environments, there are no more excuses to not wear gloves.

	Non- Abrasive	Lacerations & Snags	Durability & Tactility	Grip Handling Performance	Wet	& Oil Grip Com	nfort
	Dry and non-abrasive environments, composite handling	Assembling sharp metal parts and components	Handling parts and assembly in dry environments	General maintenance and logistics	Handling parts and assembly in humid environments	Assembling and handling sharp-edged objects and parts in light greasy and oily environments	Assembling and handling sharp-edged objects and parts in heavy oily environments
546X Uncoated	- O	٩			$\leq \leq $		
<b>546</b> Polyurethane	$- \left< \right>$	Ð					$\langle \succ \rangle \prec$
<b>546W</b> White reinforced polyurethane		Ð	Ċ.	Ð			
<b>346</b> Natural latex							
<b>386</b> Microporous nitrile		Ð				Ð	
<b>576</b> 3/4 nitrile, extra foam nitrile		٩					
<b>577</b> Fully dipped nitrile, extra foam nitrile							Ð

# IIII TEMRES®

Liquids

Perspiration

TEMRES® TECHNOLOGY ENABLES OUR GLOVES TO BE BREATHABLE AND WATERPROOF, A COMBINATION OF THE APPARENTLY OPPOSING BUT IMPORTANT FEATURES OFFERED IN A SINGLE GLOVE.

The idea behind TEMRES<sup>\*</sup> came from a challenge faced by Japanese workers who wanted to keep their hands free from sweat while working in wet environments. For many workers in the Japanese fishing industry for example, it was difficult to keep dry hands while at the same time working in wet and oily conditions. However, it is even more difficult to achieve good breathability in fully coated gloves while maintaining oil or water resistance.

As a specialist glove manufacturer SHOWA took on this challenge, and developed the first **TEMRES**<sup>®</sup> **280** glove 19 years ago. The name TEMRES<sup>®</sup> comes from a combination of the Japanese words **Te**, which means "hand", and **Murezu** meaning "no humidity". TEMRES<sup>®</sup> glove was revolutionary at the time of its launch and

its uniqueness and benefits have gradually become recognized in the market. Over the years we have perfected the technology and in 2005 the new **TEMRES**<sup>®</sup> **281** was launched. It features added anti-slip grip and a design for easier donning and doffing.



Scan the QR-code with your smartphone camera to watch the video

- LIQUID (WATER, OIL OR LUBRICANT)

ANTI SLIP FINISH WITH TWO GRAIN SIZE (EXCEPT ON CUFF)

 LIQUIDPROOF POLYURETHANE COATING
 FOAMED POLYURETHANE
 13G KNITTED NYLON LINER

SWEAT AND HEAT

WATER VAPOUR

#### **HOW DOES IT WORK?**

The concept in TEMRES<sup>®</sup> technology comes from differences in physical properties of liquid water and water vapour. Physical properties of water in liquid state, such as cohesion and lower molecular energy, means that water droplets typically range in size between 100  $\mu$ m to 3,000  $\mu$ m. On the other hand, the higher energy of water molecules in vapour means they are excited and moving freely. The size of water molecule is about 0.0003  $\mu$ m. Our engineers used this significant size difference to create two main membranes in the glove that enable the TEMRES<sup>®</sup> effect: one for its breathability and one for water resistance.

Concretely, one membrane is made from porous foamed polyurethane, helping moisture come out easily and allowing the hand to dry promptly. The other one is the outermost layer made from hydrophilic polymer, which is permeable to moisture but not to water. The difference in concentration of water molecules and temperature leads to water vapour transfer from inside the glove to outside. This is the essential mechanism applied to TEMRES<sup>®</sup> gloves. The breathability allows hands to stay dry. At the same time its waterproof property still protects the hands from water and liquids.

SHOWA

p.37

281

**TEMRES**<sup>®</sup>



## **TEMRES<sup>®</sup>** family

<text>



# MICROFIBRE SAY GOODBYE TO SWEATY HANDS

AT SHOWA WE BELIEVE THAT COMFORT IS AS IMPORTANT AS THE PROTECTION, WHICH IS WHY WE REDUCED THE WEIGHT AND IMPROVED THE EFFICIENCY FOR OUR NEW MODELS. IN ORDER TO OFFER THIS PREMIUM COMBINATION, WE ENGINEERED A MICROFIBRE FABRIC.

#### WHAT IS MICROFIBRE?

Microfibre is synthetic fabric with very small fibres or threads. The diameter of microfibre is about 20 times smaller than a human hair. The most common types of microfibres are made from polyesters, polyamides or a combination of polyester, polyamide and polypropylene.

Microfibre is used to make mats, knits, and weaves for apparel, upholstery, industrial filters, and cleaning products. The shape, size, and combinations of synthetic fibres are selected for specific characteristics, including softness, toughness, absorption, water repellency, electrostatics and filtering capabilities.

#### **MICROFIBRE FACTS:**



Breathable fabric



**ICROFIBR** 

Comfort is similar to natural fibres and soft



Enhanced

durability

Easily maintained and cleaned







High performance

moisture wicking

ability



COTTON

Lightweight

On the whole, microfibres are high performance and low maintenance fabrics.

Microfibre fabric is widely used in the clothing industry because of its absorption property. Athletes often use microfibre clothing, such as cycling jerseys, to improve their performances during competitions, as it provides a high capacity to absorb sweat while avoiding irritation.



#### **HOW DOES IT WORK?**



Firstly, the microporous nitrile coating in 381 and 382 grants exceptional grip while allowing warm air and moisture from inside to escape, thus maintaining your hands dry.

Secondly, the microfibre liner absorbs perspiration and moisture quickly. Due to cohesive properties of water, the water molecules are pulled along the thin fibres of the microfibre material. The large surface area created by numerous fibres allows microfibre materials to hold over 6 times their weight in liquid. At the same time the larger surface area and heat from the hand trigger faster evaporation, where drying time is 20% shorter than our standard glove. This results in cooler and dryer hands.

#### TAKE COMFORT AND PROTECTION TO THE NEXT LEVEL

Professionals need optimized grip and maximum comfort when performing tasks that require extended wear and durability while keeping hands dry and cool at the same time. For workers who move between tasks from general handling to intricate assembly, requiring high abrasion performance, dexterity, finger sensitivity and comfort, **SHOWA 381** and **382** are the ideal multipurpose solutions. They are the lightest SHOWA microporous nitrile coated gloves supported by a microfibre liner with an abrasion resistance of level 4. Only fibres smaller than 1 denier can be called microfibres. The microfibre is 0.52 dennier thick and the gloves weigh only 19 grams each. Their comfort is further enhanced as breathability and moisture evaporation has increased by 20% compared to our standard offering.



# BREATHEX FOR THE ULTIMATE OUTDOOR COMPANION

#### INNOVATION MAKES SENSE WHEN IT ACTUALLY CONTRIBUTES TO SOMETHING USEFUL.

We discovered that the majority of workers use latex palm coated gloves for construction, logistics and general handling - outdoor work environments where they are exposed to changeable weather conditions all year round. In fact, companies were either purchasing 2 different types of gloves or workers were using the wrong gloves for the 2 seasons.

#### SO WE SAID: DRY, WET, WARM, COLD... WHY DO WE ALWAYS HAVE TO CHOOSE?

During dry and hot temperatures, wearing gloves causes hands to sweat and creates perspiration inside the glove. In cold and wet seasons, users wear fully coated gloves to keep hands clean, dry and warm. This means shifting gloves depending on climate and outdoor conditions. Users were wearing 2 different types of glove for the same purpose, resulting in double purchases, the wrong glove for each season, or both.

Based on these findings, SHOWA designed the ultimate outdoor companion SHOWA 306 using BREATHEX FOAM TECHNOLOGY - a revolutionary dual latex coating technology that allows the glove to be both BREATHABLE and LIQUID RESISTANT. The combination of full foam latex doubled with latex coating on the palm is the only alternative solution for workers to be protected with one glove. SHOWA 306 provides premium grip and dexterity with breathability in dry or wet environments, whatever the outdoor conditions are.

1



#### **HOW DOES IT WORK?**

Aerated latex foam covers 13 gauge liner to allow warm air to escape, so your hands can breath and perspiration is reduced

- Full foam latex coating is impermeable, protecting from liquid penetrating the glove and therefore keeping your hands dry
- Extra latex coating on palm and fingers provides excellent grip and dexterity.



#### THE ULTIMATE WINTER COMPANION

After the success of SHOWA 306, we took all the great features of this glove and built upon them to create **SHOWA 406**. The new 406 has an added inner liner that is loop knitted, offering additional thermal insulation down to -30°C and a soft texture to the skin. For general handling in cold environment that requires abrasion, liquid, cold and wind resistance, SHOWA 406 is your ultimate companion.

5

BREATHABLE

THERMAL INSULATION

FULL FOAM

LATEX

THERMAL LINER

WATER REPELLENT

#### BENEFITS

Benefits: one solution for all purposes, whatever the outdoor conditions are:

- Aerated latex foam for breathability and reduced perspiration
- Impermeability protects from liquid penetration
- **3** Latex coating offers a high level of grip and abrasion
- Soft comfort and premium fit thanks to SHOWA's hand shape technology
- High level of flexibility due to engineered coating
- G Ergonomic design hand mould that replicates the natural curvature of human hand and so reduces hand fatigue

### RECOMMENDED APPLICATIONS



6

Construction, Logistics & warehousing, Assembly, Agriculture, Gardening, DIY, Refrigeration (406)



SHOWA 306 General purpose p. 33



SHOWA 406 Cold protection p. 89

# GENERAL PURPOSE

To protect the hand from common mechanical or chemical hazards while preserving its mobility: we made our name by providing the very best in all-round, multi-purpose hand protection. Whether the job calls for small parts handling, general maintenance or heavy lifting and contractor work, we have the best glove for the job.

26. Nitrile
 32. Latex
 36. PVC
 37. Polyurethane





## NITRILE



## showa 265R

## Palm nitrile coating over nylon liner

#### **BENEFITS:** Thin nitrile coating

- Ultra-light weight, elastic low-lint glove, resistant to deformation
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Thin nitrile coating provides flexibility and tactility while offering high abrasion resistance
- Excellent level of dexterity and tactility
- Breathable back of hand to reduce perspiration
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### **APPLICATIONS:**

Logistics Automotive Mechanical handling Garden work Construction Roofing

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Nitrile GRIP: Smooth +: Ergonomic design that replicates

the natural curvature of the hand

REF.	SIZE	LENGTH
265R	6/S	240mm
265R	7/M	250mm
265R	8/L	260mm
265R	9/XL	270mm





зноwа **370В** 

Palm nitrile coating over black nylon liner

#### **BENEFITS: Optimal dexterity**

- Ultra-light weight, elastic low-lint glove, resistant to deformation
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Low-soil colour
- Thin nitrile coating provides flexibility and tactility while offering premium abrasion resistance
- Excellent level of dexterity and tactility
- Breathable back of hand to reduce perspiration
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Agriculture Horticulture Construction

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Nitrile

**GRIP:** Smooth

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
370B	6/S	220mm
370B	7/M	230mm
370B	8/L	240mm
370B	9/XL	250mm
370B	10/XXL	260mm





## showa 370W

Palm nitrile coating over white nylon liner

#### APPLICATIONS:

Agriculture Horticulture Construction

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Nitrile GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
370W	6/S	220mm
370W	7/M	230mm
370W	8/L	240mm
370W	9/XL	250mm
370W	10/XXL	260mm







## <sup>showa</sup> **376** R

<sup>3</sup>⁄<sub>4</sub> dipped nitrile with extra foam nitrile coating on palm over polyester/nylon liner

#### BENEFITS: Engineered grip technology platform for applications exposed to oils, greases & lubricants

- A flexible and robust glove that absorbs perspiration to increase comfort
- Foam nitrile protects the hand from oils, hydrocarbons and grease penetration
- Designed for optimal long lasting grip in oil and grease
- Advanced dual coating provides flexibility and tactility while offering abrasion resistance EN 388 level 4
- Excellent level of dexterity and tactility
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Automotive	Public works
Construction	Roofing
Masonry	Petrochemical

#### FEATURES

LINER: 13 gauge seamless knit polyester/nylon COATING: Nitrile/nitrile foam GRIP: Foam +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
376R	6/S	230mm
376R	7/M	250mm
376R	8/L	260mm
376R	9/XL	270mm
376R	10/XXL	280mm





## sноwа **377**

Fully dipped nitrile with extra nitrile foam coating finish over polyester/nylon liner

#### APPLICATIONS:

Construction Painting - Decorating Ship maintenance Automotive Oil platforms Cementing

#### FEATURES

I

LINER: 13 gauge seamless knit polyester/nylon COATING: Nitrile/nitrile foam GRIP: Foam +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
377	6/S	220mm
377	7/M	230mm
377	8/L	250mm
377	9/XL	255mm
377	10/XXL	265mm



## Nitrile Foam Grip Series



+ WINTER VERSION: SHOWA 477 - p.88 Insulated double nitrile coating



+ CUT VERSIONS: SHOWA S-TEX 376 - p.61 with Hagane Coil®



SHOWA S-TEX 377 - p.61 with Hagane Coil®



+ IMPACT VERSION: SHOWA 377IP - p.49 Anti-impact protection



GENERAL PURPOSE | IMPACT | CUT | CHEMICAL | INSULATED | ANTISTATIC SINGLE CS



## NITRILE



## showa 350R

## Palm nitrile coating over polyester/cotton liner

#### **BENEFITS: High mechanical resistance**

- A flexible and robust glove that absorbs perspiration to increase comfort
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
  Thin nitrile coating provides flexibility
- and tactility while offering premium abrasion resistance • Excellent level of dexterity and tactility
- Excellent level of dexterity and tactility
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Agriculture Automotive Construction Labouring Warehousing Metallurgy Transport

#### FEATURES

LINER: 10 gauge seamless knit polyester/cotton COATING: Nitrile GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
350R	7/S	220mm
350R	8/M	230mm
350R	9/L	240mm
350R	10/XL	260mm





380

## Microporous nitrile coating on palm over nylon liner

#### BENEFITS: Designed for dexterity in oily environments

- Ultra-light weight, elastic low-lint glove
- Protects the hand from oils, hydrocarbons and grease penetration
- Embossed palm finish pushes oils away to increase grip
- Optimal long lasting grip in dry and light oil
- Low-soil colour
- Excellent level of dexterity and tactility
- Breathable back of hand to reduce perspiration
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Construction Mechanical Maritime sector Automotive Internal fixing

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Microporous nitrile GRIP: Embossed +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
380	6/S	220mm
380	7/M	220mm
380	8/L	240mm
380	9/XL	260mm





## showa **382**

Microporous nitrile coating over engineered microfiber liner, silicone-free

#### BENEFITS: Ultra-lightweight for silicone-sensitive, dry and oily environments

- Embossed nitrile palm finish disperses oil for increased grip and longevity in light oily environments
- No transfer of silicone contaminations from the gloves to metal parts prior to painting
- No fingerprints left on glass or metal parts
- Microfibre properties boost vapour permeation and enhance breathability for drier, sweat-free hands
- The 0.84mm finger thickness provides an excellent level of tactility and sensitivity
- Ultra-lightweight (19g) and supple with a form-fitting, seamless knit design
- No latex allergy risks

#### APPLICATIONS:

Aerospace Airports & Ports Automotive Glass Mechanical Packaging Warehousing

#### FEATURES

LINER: 13 gauge seamless knit engineered microfiber liner COATING: Microporous nitrile GRIP: Embossed +: Silicone-free and latex-free

REF.	SIZE	LENGTH
382	6/S	220mm
382	7/M	230mm
382	8/L	250mm
382	9/XL	260mm
382	10/XXL	270mm



28



## SHOWA 0

Microporous nitrile coating over engineered microfibre liner

#### **BENEFITS:**

#### APPLICATIONS:

Transport Mechanical Logistics Construction Automotive

#### EATURE

LINER: 13 gauge seamless knit engineered microfibre **COATING:** Microporous nitrile **GRIP:** Embossed +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
381	6/S	220mm
381	7/M	230mm
381	8/L	250mm
381	9/XL	260mm
381	10/XXL	270mm



## ENHANCED BREATHABILITY BOOST VAPOUR +

PERMEATION

#### (+INCREASED GRIP

5000BYE

HANDS

TO SWEAT

DISPERSES LIQUID AWAY



## NITRILE



## showa 4400

## <sup>3</sup>/<sub>4</sub> nitrile coating over cotton jersey liner

#### **BENEFITS:**

- A flexible glove that absorbs perspiration to increase comfort
- Material provides a good mechanical resistance
- Nitrile protects the hand from oils and abrasion while retaining good touch
- Prevents oil and dirt penetration dripping through
- Great freedom of movement for the wrist
- Increased safety in poor lighting conditions
- No latex allergy risks

#### APPLICATIONS:

Agriculture Automotive Construction Distribution Glass Logistics Warehousing

#### FEATURES

LINER: Cut and sewn cotton jersey COATING: Blue Nitrile GRIP: Smooth

REF.	SIZE	LENGTH
4400	7/S	220mm
4400	8/M	230mm
4400	9/L	240mm
4400	10/XL	260mm







## <sup>3</sup>/<sub>4</sub> nitrile coating over cotton jersey liner

#### APPLICATIONS:

Agriculture Automotive Construction Distribution Glass Logistics Warehousing



LINER: Cut and sewn cotton jersey COATING: Yellow Nitrile GRIP: Smooth

REF.	SIZE	LENGTH
4400Y	7/S	220mm
4400Y	8/M	230mm
4400Y	9/L	240mm
4400Y	10/XL	260mm







## showa 7000

Full nitrile coating over cotton jersey liner with knit wrist

#### BENEFITS:

- Provides a good mechanical resistance
- Nitrile protects the hand from oils and abrasion while retaining good touch
- Impermeable for working in damp or greasy environments
- Low-soil colour
- Wrist well protected
- A flexible glove that absorbs perspiration to increase comfort

#### **APPLICATIONS:**

A	griculture
А	utomotive
С	onstructior
R	oofing

Logistics Metallurgy Petrochemical Public sector

#### FEATURES

LINER: Cut and sewn cotton jersey COATING: Nitrile GRIP: Smooth

 REF.
 SIZE

 7000
 10/L

**LENGTH** 260mm





## showa 7066

#### <sup>3</sup>⁄<sub>4</sub> nitrile coating over cotton jersey liner with reinforced safety cuff

#### **BENEFITS:**

- A flexible glove that absorbs perspiration to increase comfort
- Material provides a good mechanical resistance
- Nitrile protects the hand from oils and abrasion while retaining good touch
- Impermeable for working in damp or greasy environments
- Low-soil colour
- Breathable back of hand to reduce perspiration
- Extended safety cuff for a wrist well protected

#### APPLICATIONS:

Agriculture Automotive Construction Transport Distribution Oil platforms Grassy area

#### FEATURES

LINER: Cut and sewn cotton jersey COATING: Nitrile GRIP: Smooth

REF.	SIZE	LENGTH
7066	8/S	240mm
7066	9/M	250mm
7066	10/L	260mm





# showa 7166

Full nitrile coating over cotton jersey liner with reinforced safety cuff

#### BENEFITS:

- A flexible glove that absorbs perspiration to increase comfort
- Provides a good mechanical resistance
- Nitrile protects the hand from oils and abrasion while retaining good touch
- Impermeable for working in damp or greasy environments
- Low-soil colour
- Extended safety cuff for a wrist well protected

LINER: Cut and sewn cotton jersey

LENGTH

260mm

#### APPLICATIONS:

Agriculture Automotive Construction Public works

**FEATURES** 

**COATING:** Nitrile

SIZE

10/L

≟

GRIP: Smooth

REF.

7166

Transport Distribution Oil platforms



## showa 7199NC

Full nitrile coating with nitrile reinforced gauntlet over cotton jersey liner

#### **BENEFITS: Heavy duty protection**

- A flexible glove that absorbs perspiration to increase comfort
- Provides a good mechanical resistance
- Full nitrile coating protects the hand from oils and abrasion while retaining good touch
- Impermeable for working in damp or greasy environments
- Low-soil colour
- Extended safety cuff for a wrist well protected

#### APPLICATIONS:

Agriculture Automotive Glass Logistics Metallurgy Petrochemical Public sector

#### FEATURES

LINER: Cut and sewn cotton jersey COATING: Nitrile GRIP: Smooth

REF.	SIZE
7199NC	10/L

E LENGTH 260mm





## LATEX



## showa **310 Orange**

## Latex palm coating over polyester/cotton liner

## BENEFITS: High finish multipurpose glove

- A flexible and robust glove with good resistance to tearing
- Latex coating protects the hand in damp environments and against detergents or alcohols
- Natural rubber properties offer strong grip performance
- Excellent level of dexterity and tactility
- Designed for easy movement and continuous wear
- Breathable back of hand to reduce perspiration
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Public sector Logistics Metallurgy Distribution Masonry

#### FEATURES

LINER: 10 gauge seamless knit polyester/cotton COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH
3100	7/S	230mm
3100	8/M	240mm
3100	9/L	250mm
3100	10/XL	260mm





# showa **310** Green

Latex palm coating over polyester/cotton liner

#### APPLICATIONS:

Public sector Logistics Metallurgy Distribution Masonry Gardening

#### FEATURES

LINER: 10 gauge seamless knit polyester/cotton COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH
310G	6/XS	220mm
310G	7/S	230mm
310G	8/M	240mm
310G	9/L	250mm
310G	10/XL	260mm
310G	11/XXL	270mm





## showa **310** Black

Latex palm coating over polyester/cotton liner

#### APPLICATIONS:

Public sector Logistics Metallurgy Distribution Masonry

#### FEATURES

LINER: 10 gauge seamless knit polyester/cotton COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH
310B	7/S	230mm
310B	8/M	240mm
310B	9/L	250mm
310B	10/XL	260mm







## зноwа 306

Full foam latex coating doubled with latex on palm over nylon/polyester liner



GENERAL PURPOSE | IMPACT | CUT | CHEMICAL | INSULATED | ANTISTATIC

## LATEX



## SHOWA 305

#### <sup>3</sup>/<sub>4</sub> Latex coating over polyester/cotton liner

#### **BENEFITS: Reinforced coating** on knuckles

- A flexible glove that absorbs perspiration to increase comfort
- Latex coating provides good mechanical resistance
- Protects the hand in damp environments and against aggressive detergents
- Coated knuckles for extended protection on the back of the hand
- · Excellent level of dexterity and tactility
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation

#### **APPLICATIONS:**

Construction Labouring Public sector Gardening

#### **FEATURES**

LINER: 10 gauge seamless knit polyester/cotton **COATING:** Latex **GRIP:** Rough +: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH
305	7/S	230mm
305	8/M	240mm
305	9/L	250mm
305	10/XL	260mm



+: A green latex coating version is available on demand





#### Latex palm coating over polyester liner

#### **BENEFITS: High visibility glove**

- Latex coating provides good mechanical resistance
- Protects the hand in damp environments and against aggressive detergents or alcohols
- Increased safety in poor lighting conditions
- Phosphorescent marking after light-storage
- Excellent level of dexterity and tactility
- Designed for easy movement and extended wear
- Breathable back of hand to reduce perspiration
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Agriculture Automotive Construction Labouring

Public sector Distribution Transport Metallurgy

#### FEATURES

LINER: 10 gauge seamless knit polyester **COATING:** Latex

GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH
317	7/S	230mm
317	8/M	250mm
317	9/L	260mm
317	10/XL	270mm





## SHOWA 330

Latex palm coating over polyester/cotton liner with reinforced coating at thumb crotch

#### **BENEFITS: Designed for scaffoldings** and metal tube handling

- Latex coating protects the hand in damp environments and against aggressive detergents or alcohols
- Reinforced coating at thumb offer more resistance and durability
- Low-soil colour
- Excellent level of dexterity and tactility
- A flexible glove that absorbs perspiration to increase comfort
- Seamless knit designed to prevent irritation
- Designed for easy movement and extended wear

#### **APPLICATIONS:**

Scaffolding Agriculture Automotive Construction Logistics Metallurgy Public sector

#### FEATURES

LINER: 10 gauge seamless knit polyester/cotton **COATING:** Latex **GRIP:** Rough

+: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH
330	7/S	230mm
330	8/M	240mm
330	9/L	250mm
330	10/XL	260mm







## showa **341** Grey

## Latex palm coating over grey nylon/polyester liner

#### BENEFITS: Engineered waterproof latex palm coating

- Technology improvement on existing Grip series coating
- High level of flexibility and softness due to advanced grip technology
- Excellent level of dexterity and tactilityBreathable back hand to reduce
- Breathable back hand to re perspiration
- Soft liner for greater comfort
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Agriculture Logistics Construction Internal fixing Transport

#### FEATURES

LINER: 13 gauge seamless knit nylon/polyester COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
341G	6/S	230mm
341G	7/M	250mm
341G	8/L	260mm
341G	9/XL	270mm





## showa **341** Red

Latex palm coating over red nylon/polyester liner

#### APPLICATIONS:

Agriculture Logistics Construction Internal fixing Transport

#### FEATURES

LINER: 13 gauge seamless knit nylon/polyester COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
341R	6/S	230mm
341R	7/M	250mm
341R	8/L	260mm
341R	9/XL	270mm





## showa **341** Purple

Latex palm coating over purple nylon/polyester liner

#### APPLICATIONS:

Agriculture Logistics Construction Internal fixing Transport

#### FEATURES

LINER: 13 gauge seamless knit nylon/polyester COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
341P	6/S	230mm
341P	7/M	250mm
341P	8/L	260mm
341P	9/XL	270mm







## PVC



## showa 170R

## Unsupported PVC coating over viscose flocked liner

#### **BENEFITS:**

- Seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments
- Excellent dexterity and tactility
- Surface enables a secure grip on slippery objects
- Extended protection on the forearm
- Non-powdered, "slip-on" treatment
- Easy to put on and remove, lint-free, dust-free
- A thin, light glove with a "second skin" feel

#### **APPLICATIONS:**

Petrochemical Janitorial Chemical industry Pharmaceutical & laboratory

#### FEATURES

LINER: Viscose flocked lined COATING: PVC THICKNESS: 0.60mm GRIP: Smooth

REF.	SIZE	LENGTH
170R	8/M	300mm
170R	9/L	300mm
170R	10/XL	300mm





showa

Full PVC coating, extra PVC coating on the entire hand over cotton liner

#### BENEFITS:

- A flexible glove that absorbs perspiration to increase comfort
- Material provides good mechanical resistance
- PVC protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments
- Rough palm finish enhances grip
- Wrist well protected
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Agriculture Viticulture Garden work Waste collector

#### FEATURES

LINER: Seamless knit cotton COATING: PVC GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
600	7/S	240mm
600	8/M	250mm
600	9/L	265mm
600	10/XL	270mm




# POLYURETHANE



SHOWA

# TEMRES® 281

Fully breathable micro-ventilated polyurethane coating with micro-roughened nitrile finish on fingertips over nylon liner

#### BENEFITS: The 1st innovative glove combining waterproof and breathability

- Membrane keeps water out of the glove, while allowing warm air and moisture from inside to escape
- Liquid proof protects hands against liquids and oils
- Fingertips finish increase protection and provide optimal grip
- Level 4 abrasion resistance
- Breathable technology keeps your hands dry
- Flexibility and tactility due to a thin coating technology
- Seamless knit designed to prevent irritation
- Minimal allergy risks

#### APPLICATIONS:

Agriculture Garden work Automotive Maintenance Janitorial Maritime sector Tiling

#### FEATURES

- LINER: Nylon COATING: Breathable PU/nitrile GRIP: Rough
- +: Premium technology offering breathability and waterproof
- +: Ergonomic design hand mould that replicates the natural curves of human hand

REF.	SIZE	LENGTH
TEMRES 281	7/S	270mm
TEMRES 281	8/M	275mm
TEMRES 281	9/L	275mm
TEMRES 281	10/XL	280mm
TEMRES 281	11/XXL	290mm





Scan the QR-code with your smartphone camera to watch the video



+ WINTER VERSION: SHOWA TEMRES® 282 - p.88



# POLYURETHANE



# BIack

Polyurethane palm coating over black nylon liner

### BENEFITS: Thin coating for maximum dexterity

- Ultra-light, elastic low-lint glove, resistant to deformation
- PU protects the hand from oils and abrasion while remaining elastic
- Low-soil colour
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Logistics Automotive Horticulture Construction Internal fixing

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
B0500B	6/S	210mm
B0500B	7/M	220mm
B0500B	8/L	230mm
B0500B	9/XL	250mm
B0500B	10/XXL	265mm





# BO500 White

Polyurethane palm coating over white nylon liner

#### APPLICATIONS:

Logistics Automotive Horticulture Construction Internal fixing

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
B0500W	6/S	210mm
B0500W	7/M	220mm
B0500W	8/L	230mm
B0500W	9/XL	250mm
B0500W	10/XXL	265mm







# B0502 White

Polyurethane palm coating over white nylon/polyester liner

### BENEFITS: A light, elastic low-lint glove

- The finger thickness: 0.79mm provides an excellent level of tactility and sensitivity
- PU coating resists oils and abrasion while remaining elastic
- A flexible glove designed for easy movement and extended wear
- Breathable back of hand to reduce perspiration
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Automotive Construction DIY Logistic and warehousing Horticulture

#### FEATURES

LINER: 13 gauge seamless knit nylon/ polyester COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

SIZE	LENGTH
6/S	210mm
7/M	220mm
8/L	230mm
9/XL	250mm
10/XXL	265mm
	<b>SIZE</b> 6/S 7/M 8/L 9/XL 10/XXL





## showa **B0600**

Polyurethane fingertips coating over nylon liner

#### **BENEFITS: Extreme dexterity**

- PU protects from oils and micro-cuts while remaining flexible
- A light, elastic low-lint glove, resistant to deformation
- No fingerprints left on handled objects
- Great freedom of movement for the wrist
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Automotive Electronic component White room Precious metal manipulation

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
B0600	6/S	185mm
B0600	7/M	190mm
B0600	8/L	200mm
B0600	9/XL	225mm





## showa **В0605**

Polyurethane fingertips coating over nylon liner with long cuff (+50mm)

#### APPLICATIONS:

Automotive Electronic component White room Precious metal manipulation

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
B0605	6/S	235mm
B0605	7/M	240mm
B0605	8/L	250mm
B0605	9/XL	275mm
B0605	10/XXL	295mm





# showa **B0610**

#### Uncoated nylon liner

#### APPLICATIONS:

Logistic Automotive Electronic component Luxury packaging Quality control

#### FEATURES

LINER: 13 gauge seamless knit nylon COATING: Uncoated +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
B0610	6/S	170mm
B0610	7/M	180mm
B0610	8/L	190mm
B0610	9/XL	210mm







# HAND PROTECTION IN THE CONSTRUCTION INDUSTRY

IMPACT CUT CHEMICAL INSULATED ANTISTATIC SINGLE USE

# FACTS AND FIGURES

Even though official figures show there has been a drop in workplace accidents in the building trade, they are still more frequent than in other industries. Most injuries within the construction environment involve the hands and/or arms, and serious accidents or fatalities have a deep social and economic impact on everyone involved: the company, the employer and the employee. It is vital to prevent these from happening in the first place.

Every year, serious and fatal injuries to workers have a devastating social and emotional impact on victims, their families, their colleagues and the company's management. It makes sense for employees to protect themselves at all times, no matter how small the risk. As we all know, it's better to be safe than sorry. Data from France is used for the graphs below; the figures are in fact similar in all main industrialized countries.



Building trade Transport, water, gas, electricity, press, communications Metallurgy
 Wood, paper, textiles, clothing Chemicals, rubber

ERAL PURPOSE | IMPACT | CUT | CHEMICAL | INSULATED | ANTISTATIC | SINGLE US m

On top of these facts and figures, let's not forget there may be other direct and indirect costs that are often underestimated, or even unknown.

#### Labour costs

- Working time lost by the victim and other employees
- Medical visits after the accident and first aid
- Replacing the employee, including recruitment and training

#### **Costs of material losses**

- Damage caused to equipment, tools and work in progress
- The use of first aid medication supplies
- Administrative costs
- The time required for enquiries into the causes of the accident

#### **Production costs**

- Time off work and loss of earnings
- Drops in productivity

#### **Commercial costs**

- Delays in delivery with possible late delivery fines
- Downturns in the quality of work
- Deterioration of the company's image
- Increases in insurance premiums

#### Other miscellaneous costs

- Fixed costs that are incurred even when there is a stoppage in work
- Transport for the victim
- Any possible legal action
- Punitive costs in the event of legal infringements
- Cost of expertise



BREAKDOWN OF OCCUPATIONAL ACCIDENTS LEADING TO PERMANENT DISABILITY ACCORDING TO THE AREA OF INJURY (France 2011 data)

### **A COMPLETE OPTIMISED** RANGE

With the multitude of different public sector and building jobs in mind, SHOWA now offers a range of gloves created entirely around the different applications and needs around each trade of the construction industry. To make it easier to choose the correct glove for the type of application, we have identified a range of trade-specific gloves grouped into 5 main categories of no more than 15 models. This ensures the number of reference materials is optimised and purchase costs are reduced to a minimum, with gloves that meet the specific needs of each different type of work. Grouped by work type, they consider three key factors: work environment, the different hand movements to be performed and the types of protection required.



### **GENERAL HANDLING**



		Driving machines	•	•			
		Maintenance		•			
	PUBLIC WORK	Slingers/signaler					
		Demolition		•			
		Steel fixing					_
		Concreting Steel grapter					
	STDUCTUDE	Steel erector					
	JIROCIORE	Shuttening Douring concrete	-	-			-
	SCAFFOLDER	Scaffolding installation			•		
		Laying brick		•	•		_
	MASON	Cementing					
		Mortar					
		Guttering and drain pipe					
		Roofing application membranes		•		•	T
	ROOFER &	Insulation	•			•	
	CARPENTER	Flashings and seals		•		•	-
		Internal fixing		•		•	
		Wood joinery		•		•	
	GLASS AND	Fixing glass and windows					
	GLAZING	Handling glass and windows					
		Plumbing					
	PLUMBER -	Drainage, piping					
	HEATER	Heating, ventilation	•				
		Installing electrical wiring/components				•	
ELECT	ELECTRICIAN	Using test equipment				•	
		Installing trunking				•	
		Satting tile					
	TILER	Grouting /cloaning off					
		Grouting/cleaning on					
		Painting					
		Washing/cleaning					
		Sanding					
	PAINTER &	Setting screw and nail	•			•	
	/PLASTEREP	Skirting placement	•			•	
		Coating preparation	•				
		Plastering					
		Decoration					

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		CHEM	1ICAL	CUT F	ROTE	CTION	COLD	S	PECIFI	С
			JM)		J		Y	Y		
377	317	660	379	DURACoil® 546	S-TEX 376	S-TEX 581	477	7550	281	377IP
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# IMPACT PROTECTION

#### Impact your protection not your hands!

For oil & gas, construction and mining workers that require an impact protection combined with oil grip and fully impermeable protection against mud, oil and liquids. SHOWA 377IP is the most complete protection so far.

### 48. Nitrile





# NITRILE

# SHOWA 377IP

IMPACT PROTECTION, COMBINED WITH OIL GRIP & IMPERMEABILITY

This glove provides an impact protection on the most fragile parts of the hand: knuckles, thumb and fingers while combining an excellent premium grip that preserves the wearer from grease and liquids penetration.



NITRILE FOAM FILM NITRILE LINER



SHOWA INDUSTRIAL SERIES



ENHANCES GLOVE'S LIFETIME



#### Fully dipped nitrile with extra nitrile foam coating over polyester/ nylon liner reinforced with engineered Anti-impact protection.

#### BENEFITS

- Impact protection reduces shock energy on metacarpals and knuckles, adds pinch-point protection for fingertips
- A flexible, robust glove offering great dexterity combine with good resistance to tearing
- Foam nitrile palm finish disperses oil, sludge and mud away to maximize grip
- Nitrile protects from water, oils, hydrocarbons and grease splashes/ penetration with optimal long-lasting grip
- Excellent fitting due to optimal liner design
- Seamless knit designed to prevent irritation
- No latex minimal allergy risks

#### **APPLICATIONS**

Drilling Digging Deck crew Fitters Riggers Pipe Fitters Handling heavy equipment Demolition

#### FEATURES

LINER: 13 gauge seamless knit polyester/nylon COATING: Nitrile/nitrile foam GRIP: Foam +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGT
377IP	7/M	265mn
377IP	8/L	275mn
377IP	9/XL	275mn
377IP	10/XXL	280mr



#### RECOMMENDED FOR THESE LINES OF WORK:











OIL & GAS

MINING

DEMOLITION

CONSTRUCTION

SHIP BUILDING

DIY

LOGISTIC



# CUT PROTECTION

More than 80% of all hand and arm injuries are due to cuts and lacerations, most of which can be traced to an absence of gloves. To secure the handling of tools or objects with sharp edges or slippery surfaces, we make gloves and protective sleeves that not only resist cuts, but are also comfortable to wear, thus ensuring compliancy as well as safety.

54. Cut Level B
56. Cut Level C
59. Cut Level D
62. Cut Level E
63. Cut Level F

## SHOWA CUT INNOVATIONS FOR PROTECTION & COMFORT

#### DURACoil® SERIES MULTI-PURPOSE CUT PROTECTION FOR CUT LEVEL C/A3

The liner of every DURACoil<sup>\*</sup> glove is engineered by tightly wrapping multifilament polyester around a cut resistant fiber, then reinforcing it with High-Performance Polyethylene (HPPE). The soft properties of HPPE combined with the unique coating styles of each model provides ultracomfortable multi-purpose gloves with durable cut resistant properties for precision handling.



#### S-TEX SERIES STAINLESS STEEL PROTECTION FOR CUT LEVEL D/A4 AND UP

Hagane Coil<sup>\*</sup> technology enables us to provide high levels of cut resistance without sacrificing comfort. The key ingredient in each S-TEX glove is the unique coiling technique that binds an attending yarn to a stainless steel core. This provides better protection than any natural or synthetic fibre, yet is thin enough to allow flexibility and free movement as the hand bends and flexes.



 Polyester / nylon
 Stainless steel
 Attending yarn (depending on glove)

#### 51



## WHAT YOU NEED TO KNOW ABOUT THE NEW GLOBAL CUT STANDARDS

### EN 388: 2016 (ISO 13997)

- Uses Coup Test as well as the TDM-100 cut machine (ISO 13997) to test cut level to accommodate limitations (dulling of the blade) in the Coup Test when testing strong cut-resistant fabrics
- Coup Test measures number of cycles required to cut through the glove
   Reporting is 1 5
- TDM-100 measures NEWTONS of force up to 30+N
   > Reporting is A F



the number of cycles required to cut through

the test sample vs. the reference material.

determine the load required to cut through a glove sample using a straight-edge blade that moves along a straight path within a distance of 20mm. The sample is cut 5x each at three different loads.

## **UNDERSTANDING YOUR CUT GLOVE**





EN 388's testing method using only the Coup Test would at times result in two different gloves both having a cut level 5. However, after being tested with the ISO 13997 method where the TDM machine is used, the same gloves could score a cut level 5/C while the other an 5/E-a difference of up to 2000 grams of force! The new levels make it much easier to identify the different cut protection levels.

METHODS

DIFFERENT TESTING

## ACROSS THE SCALE, **SHOWA** HAS YOU COVERED

ANSI vs. EN

EN 388: measures FORCE using newtons

ANSI/ISEA 105: measures MASS using grams

EN 388: 2016



No <th>EN 388: 201</th> <th>6 <b>A</b></th> <th><b>B</b></th> <th><b>C</b></th> <th><b>D</b></th> <th><b>E</b></th> <th><b>F</b></th>	EN 388: 201	6 <b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
	Tested to ISO 1399	7 2N-5N	5N-10N	10N-15N	15N-22N	22N-30N	30N+
receiving Electrical & repairs	APPLICATIONS APPLICATIONS	Light material handling Small parts assembly (without sharp edges) Cardboard packaging General purpose Shipping & receiving	Aircraft engine building & assembly White goods manufacturing Carbon fiber handling Recycling component dismantling	Metal panels Small parts assembly (with sharp edges) Light automotive body assembly Sheet glass handling in production Electrical	Steel fixing & erecting Medium pressing oily metal parts Canning & bottling Food preparation & processing Automotive maintenance & repairs	Cable trunking Food deboning Glass & window handling Heavy pressing oily metal parts Metal cut-off recycling	30N       35N       40N         Meat processing       4eavy duty glass & bottling         Heavy duty glass & bottling         Pulp & paper         Heavy metal sheet handling         Canning

**INCREASE OF RISK SEVERITY** 



# **CUT LEVEL B**



# showa **540D**

## Polyurethane coating on palm over HPPE liner

#### **BENEFITS: Dexterity and cut protection**

- A flexible glove providing effective protection against cuts and abrasion
- Suitable for dry or light oil applications
- PU coating provides grip and assured handling
- Thin and lightweight glove enhancing dexterity
- Breathable back of hand to reduce perspiration
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation
- Minimal allergy risks

#### APPLICATIONS:

Metallurgy Sheet metal Internal fixing

#### FEATURES

LINER: 13 gauge seamless knit HPPE COATING: Polyurethane

#### **GRIP:** Smooth

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
540D	6/S	210mm
540D	7/M	220mm
540D	8/L	230mm
540D	9/XL	250mm
540D	10/XXL	260mm





SHOWA 541

#### Polyurethane coating on palm over HPPE liner

#### BENEFITS: Premium combination of cut resistance and comfort

- PU coating highly resistant to abrasion
- Thin and lightweight glove enhancing
- dexterity
- PU protects the hand from oils and abrasion while remaining elastic
- Low-soil colour
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Very flexible with a soft liner providing high comfort
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### **APPLICATIONS:**

Public sector	Internal fixing
Metallurgy	Automotive
Sheet metal	Construction
Transport and logistic	

#### FEATURES

([]

LINER: 13 gauge seamless knit HPPE COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
541	6/S	220mm
541	7/M	225mm
541	8/L	235mm
541	9/XL	255mm
541	10/XXL	280mm



#### Polyurethane coating on palm over HPPE liner

#### APPLICATIONS:

Public sector Metallurgy Sheet metal Transport and logistic Internal fixing Automotive Construction

#### FEATURES

LINER: 13 gauge seamless knit HPPE COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that

replicates the natural curves

REF.	SIZE	LENGTH
542	6/S	210mm
542	7/M	220mm
542	8/L	230mm
542	9/XL	250mm
542	10/XXL	260mm





SHOWA INDUSTRIAL SERIES



### SHOWA 545

#### Nitrile coating on palm over HPPE liner

#### **BENEFITS:**

- A flexible, light glove providing effective protection against cuts
- Nitrile protects the hand from oils. hydrocarbons and grease penetration
- Resistant to abrasion with effective long lasting grip in oil
- Enhance handling of oily sharp piece
- Breathable back of hand to reduce perspiration
- Provides easy movement and comfort for an extended wear
- Seamless knit designed to prevent irritation

#### **APPLICATIONS:**

Maritime sector Automotive Internal fixing Maintenance Construction White goods

#### FEATURES

LINER: 13 gauge seamless HPPE knit **COATING:** Nitrile **GRIP:** Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
545	6/S	200mm
545	7/M	210mm
545	8/L	220mm
545	9/XL	230mm





#### SHOWA



#### Seamless knitted HPPE sleeve

#### **RENEEITS**

- Extended protection for the entire arm 45cm length
- Seamless knit designed to prevent irritation
- Minimal allergy risks

#### **APPLICATIONS:**

Automotive Glass Manufacturing Bottling Recycling

#### FEATURES

LINER: Seamless HPPE knit **COATING:** Uncoated

REF. SIZE DS45 One size

LENGTH 450mm







DuPont™ Kevlar.

#### Full PVC coating, extra PVC coating on the entire hand over Kevlar® liner

#### **BENEFITS: Cut and chemical** protection combination

- Unique SHOWA PVC dipping technology provides flexibility and suppleness
- Extended protection on the forearm
- Combined chemical resistance and
- cut protection
- PVC seals and protects the hand against chemicals while remaining flexible
- Suitable for working in damp or greasy environments, enabling you to grip objects securely
- Rough finish enhance grip performance Designed for easy movement and
- continuous wear
- Seamless knit designed to prevent irritation

#### **APPLICATIONS:**

Glass	Petrochemical
Bottling	Chemical based
Utilities	

#### FEATURES

LINER: Seamless Kevlar<sup>®</sup> knit **COATING:** PVC

#### GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
KV660	8/M	300mm
KV660	9/L	300mm
KV660	10/XL	320mm
KV660	11/XXL	320mm





# CUT LEVEL C



### showa DURACoil® 546

Polyurethane foam coating over engineered DURACoil® liner reinforced with HPPE

#### BENEFITS: Ultra-comfortable multi-purpose glove with durable cut resistant properties for precision handling

- Increased cut resistance performance due to engineered DURACoil\* liner
- PU foamed coating protects the hand from oils and abrasions while remaining breathable
- Maximum comfort when performing delicate tasks
- Breathable back of hand reduces perspiration and keeps hands dry
- Cost-efficient gloves that can be laundered and re-used

#### APPLICATIONS:

Aerospace Automotive Engineering Glass Manufacturing Mechanical Metallurgy Railways Warehousing

#### FEATURES

LINER: 13 gauge seamless knit engineered yarn/polyester with HPPE COATING: Polyurethane GRIP: Smooth +: Ergonomic design that replicates the natural hand

REF.	SIZE	LENGTH
DURACoil 546	6/S	220mm
DURACoil 546	7/M	230mm
DURACoil 546	8/L	240mm
DURACoil 546	9/XL	250mm
DURACoil 546	10/XXL	270mm





showa DURACoil® 546W

White reinforced polyurethane coating over engineered DURACoil® liner reinforced with HPPE

#### BENEFITS: White cut level C/A3 glove for general precision handling in dirt-sensitive environments

- Increased cut resistance performance due to engineered DURACoil\* liner
- Reinforced polyurethane coating enhances abrasion and oil resistance compared to regular PU
- Light colour helps indentify soiling and contamination
- Maximum comfort when performing delicate tasks
- Breathable back of hand reduces perspiration and keeps hands dry
- Cost-efficient gloves that can be laundered and re-used

#### APPLICATIONS:

Aerospace Automotive Cleanrooms Laboratory Manufacturing Mechanical Metallurgy Pharmaceutical

#### FEATURES

LINER: 13 gauge seamless knit engineered yarn/polyester with HPPE COATING: Polyurethane

#### GRIP: Smooth

+: Ergonomic design that replicates the natural hand

REF.	SIZE	LENGTH
DURACoil 546W	6/S	220mm
DURACoil 546W	7/M	230mm
DURACoil 546W	8/L	240mm
DURACoil 546W	9/XL	250mm
DURACoil 546W	10/XXL	270mm





### showa DURACoil® 546X

Uncoated engineered DURACoil<sup>®</sup> liner reinforced with HPPE

#### BENEFITS: A flexible, light glove providing effective protection against cuts

- Increased cut resistance performance due to engineered DURACoil\* liner
- Optimal dexterity and tactile feel retained
- Light colour helps indentify soiling and contamination
- Maximum comfort when performing delicate tasks
- Cost-efficient gloves that can be laundered and re-used
- Seamless knit designed to prevent irritation for continuous wear

#### APPLICATIONS:

Aerospace Automotive Cleanrooms Manufacturing Mechanical Warehousing

#### FEATURES

LINER: 13 gauge seamless knit engineered yarn/polyester with HPPE COATING: Uncoated GRIP: Smooth +: Ergonomic design that replicates the natural hand

REF.	SIZE	LENGTH
DURACoil 546X	6/S	220mm
DURACoil 546X	7/M	230mm
DURACoil 546X	8/L	240mm
DURACoil 546X	9/XL	250mm



SHOWA INDUSTRIAL SERIES



### showa DURACoil® **346**

Latex coatingover engineered DURACoil® liner reinforced with HPPE

#### BENEFITS: Lightweight and durable with excellent resistance to tearing

- Increased cut resistance performance due to engineered DURACoil\* liner
- Natural latex coating protects the palm and fingers from liquids, snags, and abrasions
- Rough texturing on palm ensures exceptional grip
- Maximum comfort when performing delicate tasks
- Breathable back of hand reduces perspiration
- Cost-efficient gloves that can be laundered and re-used

#### APPLICATIONS:

ConstructionManufacturingDIYMunicipal ServicesGlassWarehousing

#### FEATURES

LINER: 13 gauge seamless knit engineered yarn/polyester with HPPE

**COATING:** Latex

GRIP: Rough

+: Ergonomic design that replicates the natural hand

REF.	SIZE	LENGTH
DURACoil 346	6/S	220mm
DURACoil 346	7/M	230mm
DURACoil 346	8/L	250mm
DURACoil 346	9/XL	260mm





## DURACoil® **386**

Microporous nitrile coating over engineered DURACoil® liner reinforced with HPPE

#### BENEFITS: Light, supple gloves with good resistance to punctures and nicks

- Increased cut resistance performance due to engineered DURACoil\* liner
- Microporous nitrile coating protects the hand from grease, hydrocarbons, and abrasions while remaining aerated
- Embossed nitrile palm finish disperses oil for increased grip and longevity in light oily environments
- Breathable back of hand reduces perspiration
- Cost-efficient gloves that can be laundered and re-used

#### APPLICATIONS:

AerospaceEngineeringAirports & PortsManufacturingAutomotiveMechanicalConstructionPackaging

#### FEATURES

CE

LINER: 13 gauge seamless knit engineered yarn/polyester with HPPE

**COATING:** Microporous nitrile **GRIP:** Embossed

**+:** Ergonomic design that replicates the natural hand

REF.		SIZE	LENGTH
DURACoil	386	6/S	220mm
DURACoil	386	7/M	230mm
DURACoil	386	8/L	250mm
DURACoil	386	9/XL	260mm
DURACoil	386	10/XXL	270mm



# DURACoil® 576

Foamed nitrile on <sup>3</sup>/<sub>4</sub> dipped nitrile coating over engineered DURACoil® liner reinforced with HPPE



### showa DURACoil® 577

Foamed nitrile on fully dipped nitrile coating over engineered DURACoil® liner reinforced with HPPE

BENEFITS: Durable cut protection and long lasting anti-slip grip in wet and oily conditions

- Increased cut resistance performance due to engineered DURACoil\* wrapping technology
- Foam nitrile over nitrile protects the hand from oils, hydrocarbons and grease penetration
- Advanced dual coating provides flexibility and tactility while offering abrasion resistance EN 388 level 4
- Liquid-proof to end of coated area (577 has full hand and wrist coverage)
- Cost-efficient gloves that can be laundered and re-used

#### APPLICATIONS:

Aerospace	Glass
Automotive	Manufacturing Mechanical
Construction Engineering	Oil & Gas

#### FEATURES

LINER: 13 gauge seamless knit engineered yarn/polyester with HPPE cal cal GRIP: Foam

+: Ergonomic design that replicates the natural hand

REF.	SIZE	LENGTH	REF.	SIZE	LENGTH
DURACoil 576	6/S	220mm	DURACoil 577	6/S	250mm
DURACoil 576	7/M	230mm	DURACoil 577	7/M	265mm
DURACoil 576	8/L	250mm	DURACoil 577	8/L	275mm
DURACoil 576	9/XL	260mm	DURACoil 577	9/XL	275mm
DURACoil 576	10/XXL	270mm	DURACoil 577	10/XXL	280mm





# CUT LEVEL C



DuPont" Kevlar



### Latex coating on palm over Kevlar® liner

### **BENEFITS:** The balance between cut protection and dexterity

- Excellent mechanical performance
- Flexible and supple so allows dexterity
- Offers good abrasion resistance
- Latex protects the hand in damp environments
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation

Recycling

Metallurgy

#### **APPLICATIONS:**

Automotive Glass

notive

#### FEATURES

LINER: 10 gauge seamless knit Kevlar<sup>®</sup> COATING: Latex GRIP: Rough +: Eroonomic design hand mould

that replicates the natural curves

REF.	SIZE	LENGTH
GP-KV1	7/S	230mm
GP-KV1	8/M	245mm
GP-KV1	9/L	255mm
GP-KV1	10/XL	270mm







DuPont<sup>™</sup>

Kevlar.

Nitrile coating on palm over Kevlar<sup>®</sup> liner

#### APPLICATIONS:

Automotive Glass Recycling Metallurgy

#### FEATURES

LINER: 10 gauge seamless knit Kevlar\* COATING: Nitrile GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
GP-KV2R	7/S	220mm
GP-KV2R	8/M	230mm
GP-KV2R	9/L	240mm
GP-KV2R	10/XL	260mm







DuPont<sup>™</sup> Kevlar.

# showa **240**

Sponge neoprene palm coating over Kevlar®, modacrylic, fibreglass liner

#### BENEFITS: Combination of Arc flash and cut protection

- Protects against arc flash: Arc flash level 2
- Kevlar<sup>®</sup> liner increases cut protection: EN 388 level C
- Good resistance against flames and heat
- Provides strong mechanical resistance level
- Flat dipped sponge neoprene coating provides excellent grip while remaining soft and flexible

#### **APPLICATIONS:**

Construction Maritime sector Metallurgy Oil & Gas/Offshore

#### FEATURES

LINER: 13 gauge seamless Kevlar<sup>®</sup>/ modacrylic/fibreglass knit COATING: Sponge neoprene GRIP: Smooth

REF.	SIZE	LENGTH
240	7/S	233mm
240	8/M	260mm
240	9/L	280mm
240	10/XL	285mm
240	11/XXL	290mm



SHOWA INDUSTRIAL SERIES

# CUT LEVEL D





DuPont<sup>™</sup>

### showa 4561

Sponge nitrile palm coating over engineered liner with Kevlar®

#### BENEFITS: Combination of oil grip technology and cut resistance

- A light, elastic low-lint glove, resistant to deformation
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Provides grip performance in oily circumstances with high abrasion resistance
- Engineered fibres knitting provides cut protection level D
- Excellent level of dexterity and tactility
- Breathable back of hand to reduce
   perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Automotive	Manufacturing
Engineering	Mechanical
Glass	Metallurgy

#### FEATURES

LINER: Seamless knit Kevlar® COATING: Sponge nitrile GRIP: Sponge

REF.	SIZE	LENGTH
4561	6/S	220mm
4561	7/M	230mm
4561	8/L	240mm
4561	9/XL	250mm
4561	10/XXL	260mm







Foam nitrile palm coating over spandex/ engineered cut resistant liner reinforced with HPPE

#### BENEFITS: Resilient food-safe glove offering excellent grip and cut protection in dry & greasy environments

- Strong cut resistance performance -EN 388 level D
- Foam nitrile coating protects against oils, hydrocarbons, grease and abrasions, while offering excellent grip in wet and dry conditions
- FDA & EU Food contact approved
- Cooling HPPE properties and breathable back of hand reduces perspiration and keeps hands dry
- Thin and lightweight for enhanced dexterity and longer use
- Launderable for multiple use, less
   waste and cost efficiency
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

AutomotiveGlassConstructionMunicipal ServicesFoodWarehousing

#### FEATURES

LINER: 15 gauge seamless knit spandex/ engineered yarn with HPPE COATING: Nitrile GRIP: Foam

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
234	6/S	220mm
234	7/M	230mm
234	8/L	250mm
234	9/XL	260mm
234	10/XXL	270mm







Uncoated spandex/ engineered cut resistant liner reinforced with HPPE

#### BENEFITS: Comfortable food-safe glove with high cut resistance performance and flexibility

- Strong cut resistance performance -EN 388 level D
- Cooling and breathable HPPE
  properties reduce perspiration and
  keep hands dry
- Designed for use in "knife hand" applications in food processing & food service industries
- Ambidextrous and launderable for multiple use, less waste and cost reduction
- Perforated tag can be removed easily without tearing or damaging the glove
- An ideal inner glove for extra cut protection
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Automotive	Glass
Construction	Mechanical
Food	

#### FEATURES

LINER: 15 gauge seamless knit spandex/ engineered yarn with HPPE COATING: Uncoated +: Ergonomic design hand mould

that replicates the natural curves

REF.	SIZE	LENGTH
234X	6/S	254mm
234X	7/M	264mm
234X	8/L	274mm
234X	9/XL	294mm
234X	10/XXL	314mm





# **CUT LEVEL D**



SHOWA



Palm polyurethane coating over Hagane Coil® liner (stainless steel/polyester)

#### BENEFITS: Better advanced cut protection performance

- Excellent cut resistance performance due to engineered fibre
- PU coating provides high abrasion resistance and excellent grip
- Open back design with breathable palm keeps the hand comfortable and dry
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Automotive Construction Electronics Processing Logistics White goods Glass and glazing

#### FEATURES

LINER: 13 gauge seamless knit stainless steel/polyester COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
S-TEX 541	6/S	220mm
S-TEX 541	7/M	230mm
S-TEX 541	8/L	240mm
S-TEX 541	9/XL	265mm
S-TEX 541	10/XXL	275mm





#### SHOWA

s-tex 300

Palm latex coating over Hagane Coil® liner (stainless steel/polyester)

#### BENEFITS: Patented fibre for advanced cut protection

- Excellent cut resistance performance due to engineered fibre
- A comfortable, supple glove providing effective resistance to abrasion
- Surface provides performant grip
- Wrist well protected
- High visibility
- Breathable back of hand to reduce perspiration
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Glass handling Bottling Sheet metal Internal fixing Metallurgy

#### FEATURES

#### LINER: 10 gauge seamless knit

stainless steel/polyester COATING: Latex GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
S-TEX 300	7/S	240mm
S-TEX 300	8/M	250mm
S-TEX 300	9/L	260mm
S-TEX 300	10/XL	275mm

#### Formerly S-TEX GP1







SHOWA

# s-тех **350**

Palm nitrile coating over Hagane Coil® liner (stainless steel/polyester)

#### **BENEFITS:**

- Excellent cut resistance performance due to engineered fibre
- Nitrile protects the hand from oils, hydrocarbons, grease and abrasion
- Effective long lasting grip in oil
- Wrist well protected
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation

#### **APPLICATIONS:**

Automotive Construction Internal fixing Bottling Metallurgy

#### FEATURES

LINER: 10 gauge seamless knit stainless steel/polyester COATING: Nitrile GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
S-TEX 350	7/S	230mm
S-TEX 350	8/M	250mm
S-TEX 350	9/L	260mm
S-TEX 350	10/XL	270mm

#### Formerly S-TEX GP2



SHOWA INDUSTRIAL SERIES





SHOWA

SHOWA

S-TEX **376** 

Dual nitrile coating technology, <sup>3</sup>/<sub>4</sub> nitrile dipped with extra nitrile foam coating on palm over Hagane Coil® liner (stainless steel/polyester) Double-dipped, fully coated nitrile, with an extra nitrile foam coating on palm over Hagane Coil® liner (stainless steel/ polyester)

S-TEX 377

### BENEFITS: Excellent cut protection performance combined with long lasting grip

- Nitrile coating with a second foamed nitrile coating provides high abrasion resistance EN 388 level 4
- Protects the hand from oils, hydrocarbons, grease and abrasion, with long lasting grip performance under wet and oily conditions
- Anatomical design replicates the natural curvature of the human hand and thus reduces hand fatigue, increasing productivity and dexterity
- Seamless knitting gives no irritation
- Liquid-proof to end of coated area

#### APPLICATIONS:

Aerospace Agriculture Construction Engineering Glass Manufacturing Mechanical

#### FEATURES

LINER: 13 gauge seamless knit stainless steel/polyester COATING: Nitrile/nitrile foam

GRIP: Foam +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH	REF.	SIZE	LENGTH
S-TEX 376	6/S	220mm	S-TEX 377	6/S	220mm
S-TEX 376	7/M	240mm	S-TEX 377	7/M	240mm
S-TEX 376	8/L	250mm	S-TEX 377	8/L	250mm
S-TEX 376	9/XL	260mm	S-TEX 377	9/XL	260mm
S-TEX 376	10/XXL	270mm	S-TEX 377	10/XXL	270mm







## showa **S-TEX 376SC**

Dual nitrile coating technology, <sup>3</sup>/<sub>4</sub> nitrile dipped with extra nitrile foam coating on palm over Hagane Coil<sup>®</sup> liner (stainless steel/ polyester), and PVC/ polyester safety cuff



## зноwа **S-TEX 377SC**

Double-dipped, fully coated nitrile with extra nitrile foam coating on palm over Hagane Coil® liner (stainless steel/ polyester), and PVC/ polyester safety cuff

#### BENEFITS: Easy to remove with excellent cut protection performance and lasting grip

- Excellent cut resistance performance due to engineered fibre
- Nitrile coating with a second foamed nitrile on palm provides high abrasion resistance EN 388 level 4
- Protects the hand from oils, hydrocarbons, grease and abrasions, with long lasting grip performance under wet and oily conditions
- Strong, sturdy cuff that extends protection to the wrist, while enabling quick and easy removal in case of emergency
- Liquid-proof to end of coated area
- Anatomical design that replicates the natural curves of the human hand, thereby reducing hand fatigue and increasing productivity
- Seamless knitting prevents irritation

#### APPLICATIONS:

Automotive Glass Manufacturing

#### FEATURES

**LINER:** 13 gauge seamless knit stainless steel/polyester **COATING:** Nitrile/nitrile foam

GRIP: Foam

+: Safety cuff for extended wrist protection and easy removal

REF.	SIZE	LENGTH	REF.	SIZE	LENGTH
S-TEX 376SC	7/M	300mm	S-TEX 377SC	7/M	300mm
S-TEX 376SC	8/L	300mm	S-TEX 377SC	8/L	300mm
S-TEX 376SC	9/XL	310mm	S-TEX 377SC	9/XL	310mm
S-TEX 376SC	10/XXL	310mm	S-TEX 377SC	10/XXL	310mm





Metal Stamping

**Public Utilities** 

Recycling

61



# CUT LEVEL E





#### SHOWA

# s-тех **581**

Microporous foamed nitrile palm coating over Hagane Coil® liner (stainless steel/ polyester) reinforced with Kevlar®

#### BENEFITS: Lightweight glove with high cut protection performance

- Excellent cut resistance performance due to engineered fibre
- Embossed nitrile palm finish disperses oil away to increase grip and longevity in light oily environments
- Foam nitrile coating provides an abrasion resistance level of 5 and extended usage
- Microporous nitrile coating grants exceptional grip while allowing warm air and moisture from inside to escape, keeping your hands dry
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation

Glass and glazing

Bottling

Metallurgy

#### APPLICATIONS:

Construction Automotive Stamping Masonry

#### FEATURES

LINER: 13 gauge seamless knit stainless steel/polyester with Kevlar\* COATING: Foam nitrile GRIP: Embossed +: Ergonomic design that replicates

the natural curvature of the hand			
REF.	SIZE	LENGTH	
S-TEX 581	6/S	235mm	
S-TEX 581	7/M	245mm	
S-TEX 581	8/L	260mm	
S-TEX 581	9/XL	265mm	

S-TEX 581 10/XXL 270mm



showa 3416

Full neoprene coating over engineered cut protective liner

BENEFITS: Premium combination of mechanical, chemical and cut protection

- Neoprene protects against a wide range of chemicals including acids, caustics, solvents, greases and oils
- Cut protection EN 388 level E
- Rough particle palm finish offers good resistance to abrasion and maintained grip
- Flexible neoprene coating provides great comfort and dexterity
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Metallurgy Chemical bases, acids Petrochemical Offshore Oil & Gas

#### FEATURES

LINER: 13 gauge seamless knit HPPE COATING: Neoprene

**GRIP:** Rough **+:** Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
3416	8/S	355mm
3416	9/M	355mm
3416	10/L	355mm
3416	11/XL	355mm





### зноwа **8110**

#### Uncoated HPPE yarn

#### **BENEFITS: Ambidextrous cut level E**

- High cut performance yarn
- Optimal dexterity and tactile feel retained
- Ambidextrous; can be worn on either hand
- Fully launderable, with effective comfort and durability
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Food Construction Glass handling

#### FEATURES

LINER: 10 gauge seamless knit HPPE COATING: Uncoated

REF.	SIZE	LENGTH
8110	6/XS	240mm
8110	7/S	260mm
8110	8/M	280mm
8110	9/L	300mm
8110	10/XL	320mm



SHOWA INDUSTRIAL SERIES

# CUT LEVEL F



# showa 8127

#### Uncoated HPPE yarn

#### BENEFITS: Ambidextrous cut level F

- High cut performance yarnOptimal dexterity and
- tactile feel retained
- Ambidextrous; can be worn on either hand
- Fully launderable, with effective comfort and durability
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### APPLICATIONS:

Food Construction Glass handling

#### FEATURES

LINER: 7 gauge seamless knit HPPE COATING: Uncoated

REF.	SIZE	LENGTH
8127	6/XS	240mm
8127	7/S	260mm
8127	8/M	280mm
8127	9/L	300mm
8127	10/XL	320mm







# showa **257**

Foam nitrile palm coating over spandex liner reinforced with stainless steel and aramid

#### BENEFITS: Surprisingly soft and flexible glove that can withstand the highest level of cuts and lacerations

- Exceptional cut resistant performance - EN 388 level F
- Foam nitrile coating protects palm & fingers from abrasions, snags & punctures, while offering optimum grip in both dry & oily applications
- Plated-knit liner avoids scratchy fibres touching the skin, for long-lasting comfort
- Excellent dexterity thanks to flexible properties of spandex
- Lightweight, with breathable open back design that reduces sweat and keeps hands dry
- Launderable for multiple use, less waste and cost efficiency

#### APPLICATIONS:

Automotive Manufacturing Construction Mechanical Glass Metallurgy

#### FEATURES

LINER: 13 gauge plated-knit spandex/ aramid/ stainless steel COATING: Nitrile GRIP: Sponge +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
257	6/S	241mm
257	7/M	248mm
257	8/L	260mm
257	9/XL	273mm
257	10/XXL	270mm







Uncoated spandex liner reinforced with stainless steel and aramid

#### BENEFITS: Uncoated soft and flexible glove with cut level F protection

- Exceptional cut resistant performance
- Seamless, plated-knit liner avoids scratchy fibres touching the skin, for longlasting comfort
- Excellent dexterity thanks to flexible properties of spandex
- Lightweight, breathable liner that reduces sweat and keeps hands dry
- An ideal inner glove for extra cut protection
- Ambidextrous and launderable for multiple use, less waste and cost reduction

#### APPLICATIONS:

Automotive Manufacturing Bottling Mechanical Glass Metal Stamping

#### FEATURES

RF

25

25

25

25

25

LINER: 13 gauge plated-knit spandex/ aramid/ stainless steel COATING: Uncoated +: Ergonomic design hand mould that replicates the natural curves

F.	SIZE	LENGTH
7X	6/S	254mm
7X	7/M	264mm
7X	8/L	274mm
7X	9/XL	284mm
7X	10/XXL	294mm





### showa s-tex KV3

Palm latex coating over Hagane Coil® liner (stainless steel/ polyester) reinforced with Kevlar®

#### **BENEFITS: Highest cut** resistance protection

- Excellent cut resistance performance due to engineered fibre
- Latex protects the hand in damp environments
- Wrist well protected
- Surface provides tactile feel and better grip
- Breathable back of hand to reduce perspiration
- Designed for easy movement and continuous wear
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Metallurgy Stamping Glass and glazing

#### FEATURES

LINER: Seamless knit stainless steel/polyester with Kevlar<sup>®</sup> COATING: Latex GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
S-TEX KV3	7/S	240mm
S-TEX KV3	8/M	250mm
S-TEX KV3	9/L	260mm
S-TEX KV3	10/XL	275mm





# CHEMICAL PROTECTION

To protect the hands from direct contact with oils, hydrocarbons, acids and corrosive substances, we provide the solutions to whatever conditions you may be working in. Our chemical resistance guide and website www.chemrest.com features chemical permeation and testing information for over 300 individual chemicals.

### ChemRest

- 68. Nitrile
  74. Biodegradable Nitrile
  76. Neoprene
  78. PVC
  82. Butyl
- 83. Viton





"In a couple of clicks I can find exactly what I am looking for!" - **Gloria from TN** 

"ChemRest has the largest chemical data base that I have ever seen!" - Isaac from NY



ChemRest

# KNOW YOU'RE PROTECTED

### NO ASSUMPTIONS ARE ALLOWED WHILE DEALING WITH HAZARDOUS CHEMICALS.

The risks associated with chemical substances are numerous and their contact with the skin can cause burns, dermatitis, irritation and intoxication. The skin can be greatly damaged by such contact and wearing gloves is the only barrier that prevents hazardous contact with chemicals.

### **FIND THE RIGHT GLOVE**

ChemRest.com is the world's first free, comprehensive chemical resistant research guide for hand protection. It features a userintuitive navigation, an enhanced chemical search and the ability to compare various gloves against each other. Around the world, safety professionals can benefit from:

 A user-friendly chemical directory with 300 chemicals available

- 2 Free (on demand) testing for additional chemicals
- Access to expert chemical data and resources in one place

4 Dedicated technical support

Cost-effective hand protection solution thanks to the accurate chemical glove selection and recommendations

# **HOW TO USE CHEMREST**



### **STEP 1:**

Visit ChemRest.com. Then select your location and language.



### STEP 2:

Search for either 1) the chemical name or CAS number you are interested in or 2) the glove you are using.



### STEP 3:

Select the chemical, product, or CAS and hit search (multiple chemicals can be selected at once).



### **STEP 4:**

See results for the related chemical information and the breakthrough time that it will take the selected chemical to reach your hand through the glove.



### STEP 5:

Register for your free account and download your chemical data.

30%

of hand injuries are caused by wearing the wrong glove

U.S. Bureau of Labor Statistics 2012

See how ChemRest makes finding the right glove easy and convenient. Visit www.ChemRest.com or call our chemical experts on +1 800 241 0323



# NITRILE



### showa 707D

Unsupported full nitrile coating with tractor tread finish unlined

### BENEFITS: Tactile feel retained for optimal dexterity

- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Tractor tread grip for assured grip
- Can be used once or re-used
- Easy to put on and remove, lint-free, dust-free
- A thin, light glove with a "second skin" feel
- Designed for easy movement and extended wear
- EU Food approved

#### **APPLICATIONS:**

Food handling Chemical Laboratory and pharmaceutical Cleaning

#### FEATURES

LINER: Unlined COATING: Nitrile THICKNESS: 0.23mm GRIP: Embossed +: Food safe approved

REF.	SIZE	LENGTH
707D	6/XS	305mm
707D	7/S	305mm
707D	8/M	305mm
707D	9/L	305mm
707D	10/XL	305mm
707D	11/XXL	305mm







Cotton flock lined nitrile gauntlet with tractor tread finish

#### APPLICATIONS:

Food handling Chemical sampling Laboratory and pharmaceutical Cleaning

#### FEATURES

LINER: Cotton flocked COATING: Nitrile THICKNESS: 0.28mm GRIP: Embossed +: Food safe approved

REF.	SIZE	LENGTH
707FL	6/XS	305mm
707FL	7/S	305mm
707FL	8/M	305mm
707FL	9/L	305mm
707FL	10/XL	305mm
707FL	11/XXL	305mm







## showa 707HVO

Unsupported, unlined, biodegradable nitrile engineered with EBT<sup>®</sup> technology

### BENEFITS: Thin, light glove that fits like a "second skin"

- Protects against oils, hydrocarbons, grease and chemicals
- Fluorescent orange colour increases visibility
- Long-lasting grip
- Impermeable for working in damp or greasy environments
- Cuff prevents dirt from entering the glove
- Easy to put on and remove
- Lint-free and dust-free

#### **APPLICATIONS:**

Chemical Food Janitorial Laboratory Municipal Services Pharmaceutical

#### FEATURES

LINER: Unsupported COATING: Biodegradable nitrile THICKNESS: 0.23mm GRIP: Bisque finish +: Food safe approved

REF.	SIZE	LENGTH
707HVO	6/XS	305mm
707HVO	7/S	305mm
707HVO	8/M	305mm
707HVO	9/L	305mm
707HVO	10/XL	305mm
707HVO	11/XXL	305mm





## showa 720R

Full nitrile coating, with extra nitrile coating on the hand over polyester/nylon liner

### BENEFITS: Optimal dexterity with high chemical resistance

- A fine, supple glove (1.10mm thick)
- Rough finish offering high chemical resistance and excellent resistance to abrasion
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Optimized grip for tasks that require manual exertion and complete control over tools
- A light, elastic low-lint glove, resistant to deformation
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Chemical industry Alkaline components Construction Food Painting Petrochemical

#### FEATURES

LINER: Seamless knit polyester/nylon COATING: Nitrile THICKNESS: 1.10mm GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
720R	7/S	300mm
720R	8/M	300mm
720R	9/L	300mm
720R	10/XL	320mm
720R	11/XXL	320mm





## sноwа 771

Full nitrile coating, with extra nitrile coating on the hand over cotton/polyester liner

#### BENEFITS: High chemical and grip resistance

- A very fine, supple glove (0.50mm thick) with a rough palm finish
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Achieves the highest level of resistance to chemicals and abrasion/ Offers a high level of resistance to chemicals and abrasion
- A flexible, robust glove offering great dexterity and with good resistance to tearing
- Extended protection on the forearm

LINER: Cut and sewn cotton/polyester

+: Ergonomic design hand mould that

LENGTH

300mm

300mm

320mm

EN 374-5:2016

EN 374-1:2016/

#### APPLICATIONS:

**FEATURES** 

REF.

771

771

771

E

**COATING:** Nitrile

THICKNESS: 0.50mm GRIP: Rough

SIZE

8/M

9/L

10/XL

replicates the natural curves

Chemical handling Oil-based applications Petrochemical Alkaline components

showa 772

#### Full nitrile coating, with extra nitrile coating on the hand over cotton/polyester liner with extended sleeve and elasticated border

#### APPLICATIONS:

Chemical handling Oil-based applications Petrochemical Alkaline components

#### FEATURES

LINER: Cut and sewn cotton/polyester COATING: Nitrile THICKNESS: 0.50mm GRIP: Rough +: Ergonomic design hand mould that

replicates the natural curves

REF.	SIZE	LENGTH
772	8/M	650mm
772	9/L	650mm
772	10/XL	650mm





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SHOWA 703 Food-safe Ambidextrous

2.9 B

## LIKE A FISH TO WATER!

SHOWA 708 HYBRID TAKES YOU WHERE SAFETY AND COMFORT MEET

At SHOWA we strive to protect what's important, which is why we've introduced the SHOWA 708: a lightweight and strong nitrile glove specifically designed to combat the risks within the food sector, keeping products safe from contamination and hands safe from harm.

The special organic formulation makes SHOWA 708 safe for contact with all food categories in short term repeated contact situations. The glove is liquid proof and ideal for use with fatty and oily foods. It conforms to the shape of the hand, creating a comfortable second-skin feeling for extended use during precise manual operations. Due to its increased thickness and nitrile properties, the 708 provides exceptional resistance to tears and chemicals. The grip pattern creates a webbing that runs through the glove, reinforcing the strength and durability.

The winning combination of exceptional grip, durability and mild material properties makes manual tasks within the food industry using SHOWA 708 comfortable and much safer for both the wearer as well as the product that is being handled.

#### WHY IS BLUE IMPORTANT?

According to Hazard Analysis and Critical Control Points practices, PPE gloves in food handling should be blue because the colour is not found in food. This means that any broken piece can be identified immediately, thus eliminating risk of contamination.

> EXTRA STRENGTH AGAINST TEARS

SUPERIOR FISH SCALE

GRIP

For professionals working in food handling processes, who need strong grip in wet and fatty food environments while eliminating food contamination, our SHOWA 708 is a food-safe blue ambidextrous nitrile glove with a patented grip far superior to traditional single-use gloves. The 0.23mm thickness and unique fish scale pattern provides exceptional durability against wear and tear, while maintaining optimum dexterity and grip with fatty foods.

This SHOWA 708 nitrile hybrid glove, unlike latex and vinyl, has a high chemical resistance, is non-allergen and provides both hands and products excellent protection against food processing risks.

#### **BENEFITS:**

- + Superior fish scale grip inside and out for safer, extended handling in messy, wet and oily conditions
- Fingertip and inner-thumb texturing provides user with excellent grip and tactility to prevent accidents and unintended damage while reducing hand fatigue
- High dexterity makes the glove suitable for use with all food categories in situations where there is short term, repeated contact
- + Unflocked to prevent the risk of food contamination
- + Thicker nitrile compound provides exceptional resistance to chemicals
- + Webbing in the glove from the grip pattern provides extra strength against tears
- + Ambidextrous ergonomic shape for quick and easy donning and waste reduction
- + Lightweight with stretch formula nitrile a comfortable, second-skin feeling
- + Beaded cuff adds to tear resistance and prevents droplets travelling beyond the glove
- Blue colour allows immediate identification of broken pieces, eliminating any risk of contamination (as per HACCP)
- + Fully compatible with other PPE, such as uncoated cut resistant gloves

#### **FEATURES:**

- + Fish scale pattern grip
- + Food-safe organic formulation and blue colour
- Ambidextrous
- + 100% nitrile, latex-free and unflocked
- + Beaded cuff
- + Liquid-proof
- + 300mm long and 0.23mm thick
- + Strong chemical resistance EN ISO 374-1 : JKOPT

#### APPLICATIONS

- Poultry, meat & seafood processing
- Dairy production
- Fruit & vegetable processing
- Food packing and handling
- Sanitation and dishwashing
- Bakeries & delicatessens
- Agriculture
- Catering and food service
- Drinks production and handling
- Grain, mill and starch products
  HoReCa
- Janitorial/Cleaning
- Light assembly of oil-coated pieces

#### **AVAILABLE SIZES**

REF.	SIZE	LENGTH
708	7/S	300mm
708	8/M	300mm
708	9/L	300mm
708	10/XL	300mm
708	11/XXL	300mm
708	12/XXXL	300mm







## NITRILE



### sноwа **727**

## Unsupported, full nitrile coating with textured finish

### **BENEFITS:** Tactile feel retained for optimal dexterity

- Provides good mechanical protection and chemical resistance against a broad range of solvents, oils, animal fats and other chemicals
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- The bisque finish offers a good grip and secure handling
- Wrist well protected
- Designed for easy movement and extended wear
- A thin, light glove with a "second skin" feel
- Chlorinated
- Not contain silicones

#### APPLICATIONS:

Public sector Solvent Automotive Chemical Oil-based

#### FEATURES

LINER: Unsupported COATING: Nitrile THICKNESS: 0.38mm GRIP: Bisque +: EU Food safe approved

REF.	SIZE	LENGTH
727	7/S	330mm
727	8/M	330mm
727	9/L	330mm
727	10/XL	330mm
727	11/XXL	330mm





SHOWA 730

Unsupported full nitrile coating with textured finish over cotton flocked liner

Chemical

Oil-based

EN 374-1:2016/

#### APPLICATIONS:

Public sector Solvent Automotive

#### FEATURES

Cat. III

CE

LINER: Unsupported, cotton flocked COATING: Nitrile, not chlorinated THICKNESS: 0.38mm GRIP: Bisque +: EU Food safe approved

REF.	SIZE	LENGTH
730	6/XS	330mm
730	7/S	330mm
730	8/M	330mm
730	9/L	330mm
730	10/XL	330mm
730	11/XXL	330mm

EN 374-5:201

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EN 388:2016

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## Unsupported, nitrile coating with textured finish

#### APPLICATIONS:

Public sector Solvent Automotive Chemical Oil-based

#### FEATURES

LINER: Unsupported COATING: Nitrile THICKNESS: 0.56mm GRIP: Bisque +: EU Food safe approved

REF.	SIZE	LENGTH
737	9/L	380mm
737	10/XL	380mm
737	11/XXL	380mm





SHOWA INDUSTRIAL SERIES




## Unsupported, full nitrile coating with textured finish

#### **APPLICATIONS:**

Public secto
Solvent
Automotive
Chemical
Oil-based

#### FEATURES

LINER: Unsupported COATING: Nitrile THICKNESS: 0.56mm GRIP: Bisque +: EU Food safe approved

SIZE	LENGTH
9/L	480mm
10/XL	480mm
11/XXL	480mm
	<b>SIZE</b> 9/L 10/XL 11/XXL







## зноwа **379**

Dual nitrile coating technology, fully dipped with extra nitrile foam coating finish over polyester liner

#### BENEFITS: Advanced chemical protection with grip performance

- Enhanced chemical protection
- Nitrile coating provides protection from chemical, oils, hydrocarbons, grease and hexavalent chromium found in concrete
- Foamed nitrile finish provides excellent grip performance and prevents slipping
- A flexible, robust glove offering good resistance to abrasion
- EN 374-5:2016 Chemical protection certified
- Unique design for fit and dexterity
- Seamless knit designed to prevent
- irritation
- No latex allergy risks

#### APPLICATIONS:

ChemicalPetrochemicalConstructionOil & GasMaritime sectorRefining

#### FEATURES

LINER: 13 gauge seamless knit polyester/ cotton

**COATING:** Nitrile/foam nitrile

GRIP: Foam

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
379	8/M	300mm
379	9/L	305mm
379	10/XL	320mm
379	11/XXL	325mm





# NSK 26

Full nitrile coating with rough finish over cotton/ polyester jersey liner with extended sleeve and elasticated border

#### BENEFITS:

- Double nitrile coating provides an excellent chemical and abrasion resistance to the whole arm (620+mm long)
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Impermeable for working in damp or greasy environments
- Extended gauntlet for upper arm protection
- Provides easy movement and extended wear
- Cotton liner absorbs perspiration
   and adds comfort
- No latex allergy risks
- EU Food safe approved

#### **APPLICATIONS:**

Food handling Chemical Oil-based Fishing Agriculture Petrochemical

#### FEATURES

LINER: Seamless knit cotton/polyester COATING: Nitrile GRIP: Rough +: Extended protection to the shoulder

REF.	SIZE	LENGTH
NSK 26	8/S	620mm
NSK 26	9/M	630mm
NSK 26	10/L	640mm
NSK 26	11/XL	650mm





## **BIODEGRADABLE NITRILE**





## showa 707HVO

Unsupported, unlined, biodegradable nitrile engineered with EBT® technology

## BENEFITS: Thin, light glove that fits like a "second skin"

- Protects against oils, hydrocarbons, grease, and abrasion
- Fluorescent orange colour increases visibility
- Long-lasting grip
- Impermeable for working in damp or greasy environments
- Cuff prevents dirt from entering the glove
- Easy to put on and remove
- Lint-free and dust-free

#### APPLICATIONS:

Chemical Food Janitorial Laboratory Municipal Services Pharmaceutical

#### FEATURES

LINER: Unsupported COATING: Biodegradable nitrile THICKNESS: 0.23mm GRIP: Bisque finish +: Food safe approved

REF.	SIZE	LENGTH
707HVO	6/XS	305mm
707HVO	7/S	305mm
707HVO	8/M	305mm
707HVO	9/L	305mm
707HVO	10/XL	305mm
707HVO	11/XXL	305mm



sноwа **731** 

Unsupported, biodegradable nitrile coating (EBT®) with textured finish over cotton flocked liner

#### **BENEFITS: Chemical protection** engineered with EBT\*

- High protection against solvents and acids
- Impermeable for working in wet, greasy and oily environments
- World's first biodegradable chemical resistant glove
- Textured finish provides better grip
- Excellent precision for handling small parts
- Product biodegrades when placed in an active landfill due to EBT\* technology

Agriculture

Automotive

Janitorial

#### APPLICATIONS:

Petrochemical Manufacturing Refinery operations

#### FEATURES

LINER: Cotton flocked COATING: Biodegradable nitrile THICKNESS: 0.38mm GRIP: Embossed

REF.	SIZE	LENGTH
731	7/S	355mm
731	8/M	355mm
731	9/L	355mm
731	10/XL	355mm
731	11/XXL	355mm





# NSK 24

Biodegradable nitrile coating (EBT<sup>®</sup>) with rough finish on the hand over cotton/polyester jersey liner

#### **BENEFITS:**

- Double nitrile coating provides an excellent chemical and abrasion resistance to the forearm (350mm long)
- Nitrile protects the hand from oils, hydrocarbons and grease penetration
- Impermeable for working in damp or greasy environments
- Provides easy movement and extended wear
- Cotton liner absorbs perspiration
   and adds comfort
- No latex allergy risks
- EU Food safe approved
- Product biodegrades when placed in an active landfill due to EBT\* technology

#### **APPLICATIONS:**

Food	Fishing
Chemical	Agriculture
Oil-based	Petrochemical

#### FEATURES

LINER: Seamless knit cotton/polyester COATING: Biodegradable nitrile GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
NSK 24	8/S	350mm
NSK 24	9/M	360mm
NSK 24	10/L	360mm
NSK 24	11/XL	360mm



SHOWA INDUSTRIAL SERIES



## PROTECTION AND PRESERVATION IN ONE

Sustainability isn't just a commitment - it's part of SHOWA's legacy. Our revolutionary Eco Best Technology<sup>®</sup> (EBT<sup>®</sup>) is the innovation that gave rise to the world's first biodegradable nitrile glove. EBT<sup>®</sup> uses organic materials that accelerate the biodegradation of nitrile in active landfills.



100+ years

\* when disposed in active landfills. Actual time may vary depending on climate and location of disposal.



## **NEOPRENE**



## SHOWA 6781R

#### Full neoprene coating over cotton jersey liner

#### **BENEFITS: Chemical and heat resistant**

- Neoprene coating provides resistance to abrasion and a wide range of chemicals
- Protects the hand from oils, hydrocarbons and grease penetration
- Provides a high mechanical resistance while insulating against heat and cold
- Insulation against intermittent heat up to 100°C
- Wrist well protected
- Minimal allergy risks

#### **APPLICATIONS:**

Chemical Petrochemical Automotive Metallurgy

#### **FEATURES**

LINER: Cut and sewn cotton **COATING:** Neoprene GRIP: Rough

REF.	SIZE	LENGTH
6781R	10/L	305mm





## SHOWA CHM

Unsupported latex/ neoprene coating with embossed grip over cotton flocked liner

#### **BENEFITS: Double dipped for long** lasting resistance

- Resistant to a broad range of chemicals, this gloves features a neoprene-over-natural rubber latex layering that also provides excellent abrasion, tear and puncture resistance
- Impermeable for working in damp or greasy environments
- A self-flushing tractor-tread grip encourages the run off of fluids enhancing grip effectiveness

#### **APPLICATIONS:**

Petrochemical Chemical industry Janitorial Automotive

#### FEATURES

LINER: Cotton flocked **COATING:** Neoprene on latex THICKNESS: 0.66mm **GRIP:** Embossed

REF.	SIZE	LENGTH
CHM	7/S	305mm
CHM	8/M	305mm
CHM	9/L	305mm
CHM	10/XL	305mm

Type A





SHOWA INDUSTRIAL SERIES



## зноwа **3415**

## Full neoprene coating over polyester liner

#### BENEFITS: Flexible Neoprene coating with rough particle finish

- Innovative neoprene coating offers great flexibility, comfort and dexterity
- Fully coated neoprene gauntlet
- Rough particle finish offers good resistance to abrasion
- Seamless knit designed to prevent irritation
- Low-soil colour
- No latex allergy risks

#### APPLICATIONS:

Solvents & Caustics Small parts handling Refining operations Offshore Oil & Gas

#### FEATURES

LINER: 15 gauge seamless knit polyester COATING: Neoprene GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH	
3415	8/S	355mm	
3415	9/M	355mm	
3415	10/L	355mm	
3415	11/XL	355mm	





#### Cut Level E

## зноwа **3416**

Full neoprene coating over engineered cut resistant liner

#### BENEFITS:

- Neoprene protects against a wide range of chemicals including acids, caustics, solvents, greases and oils
- Flexible neoprene coating provides great comfort and dexterity
- Rough particle finish offers good resistance to abrasion
- SHOWA 3416 offers cut protection EN 388 level E
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Metallurgy Chemical bases, acids Petrochemical Recycling

#### FEATURES

LINER: 13 gauge seamless knit HPPE COATING: Neoprene GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
3416	8/S	355mm
3416	9/M	355mm
3416	10/L	355mm
3416	11/XL	355mm



#### CHEMICAL RESISTANCE GUIDE SHOWA 3415 AND 3416

CHEMICAL AGENT	CAS Number	ттр
ACETONE	67-64-1	15
ACETALDEHYDE	75-07-0	9
BENZENE	71-43-2	23
BUTANONE	78-93-3	16
BUTANONE OXIME	96-29-7	>480
CYCLOHEXANOL	108-93-0	>480
CYCLOHEXANONE	108-94-1	107
CYCLOHEXANE	110-82-7	146
DIBK	108-83-8	103
ETHANOL	64-17-5	>480
HEPTANE	142-82-5	>480
HEXANE	110-54-3	>480
HYDROCHLORIC ACID, 37%	7647-01-0	>480
HYDROFLUORIC ACID, 48%	7664-39-3	>480
ISOPROPYL ALCOHOL	67-63-0	>480
МЕК	78-93-3	16
METHANOL	67-56-1	230
METHYL ETHYL KETONE	78-93-3	16
METHYL ISOPROPYL KETONE	563-80-4	12
METHYLENE CHLORIDE	75-09-2	8
OLEUM	8014-95-7	180
PENTANE	109-66-0	332
PHENOL	108-95-2	400
SODIUM HYDROXIDE, 50%	1310-73-2	>480
SULFURIC ACID, 96%	7664-93-9	285
TETRACHLOROETHYLENE	127-18-4	103
TOLUENE	108-88-3	4
TOLUENE DIISOCYANATE	584-84-9	23
XYLENE	1330-20-7	51

#### **SEE MORE ON PAGE 104.**



## PVC



## sноwа 610

Full PVC coating, extra PVC coating on the entire hand over cotton liner

## BENEFITS: Flexible chemical resistant glove

- PVC seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments
- Rough finish enable to objects securely
- Provides good mechanical resistance
- Excellent level of dexterity and tactility
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Maritime sector Painting Construction Chemical industry

#### FEATURES

LINER: 13 gauge seamless knit cotton COATING: PVC THICKNESS: 1.10mm GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
610	8/M	250mm
610	9/L	250mm
610	10/XL	270mm
610	11/XXL	270mm





SHOWA 620

Full PVC coating, extra PVC coating on the entire hand over cotton liner, long cuffs

#### APPLICATIONS:

Maritime sector Painting Construction Chemical industry

#### FEATURES

LINER: 13 gauge seamless knit cotton COATING: PVC THICKNESS: 1.10mm GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
620	8/M	300mm
620	9/L	300mm
620	10/XL	300mm
620	11/XXL	300mm
620	9/L	340mm
620 620	10/XL 11/XXL	360mm 360mm





## sноwа 640

Full PVC coating, extra PVC coating on the entire hand over cotton liner, with extended bonded sleeve, elasticated border and eyelet for ventilation and hanging

#### **APPLICATIONS:**

Maritime sector Painting Construction Chemical industry

#### FEATURES

LINER: 13 gauge seamless knit cotton COATING: PVC THICKNESS: 1.10mm GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
640	8/M	600mm
640	9/L	600mm
640	10/XL	600mm







## SHOWA 650

Full PVC coating with extra PVC rough finish on the hand over cotton liner

#### **BENEFITS: Available in 4 lengths from** 250mm to 660mm

- PVC seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments
- Ultra-supple and waterproof glove with a rough finish
- High abrasion resistance EN 388 level 4
- Comfortable and soft, allows objects to be gripped firmly
- Designed for easy movement and extended wear
- A flexible, soft glove that absorbs perspiration for comfort
- · Seamless knit designed to prevent irritation

#### **APPLICATIONS:**

Chemical industry	Painting
Construction	Public works
Metallurgy	Petrochemical
Fishing & agriculture	

#### **FEATURES**

LINER: 13 gauge seamless knit cotton COATING: PVC GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
650	8/M	250mm
650	9/L	250mm
650	10/XL	270mm
650	11/XXL	270mm





## SHOWA 660

#### Full PVC coating with extra rough finish over cotton liner

#### **APPLICATIONS:**

Chemical industry Construction Fishing & agriculture Metallurgy

Painting Public works Petrochemical

#### **FEATURES**

LINER: 13 gauge seamless knit cotton COATING: PVC GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

#### **AVAILABLE IN VARIOUS LENGTHS:** 30CM, 34CM, 36CM

REF.	SIZE	LENGTH
660	8/M	300mm
660	9/L	300mm
660	10/XL	300mm
660	11/XXL	300mm
660	9/L	340mm
660	10/XL	360mm
660	11/XXL	360mm







SHOWA 690

Full PVC coating with extra rough finish over cotton liner, extended bond sleeves, elasticated border and eyelet ventilation

#### **APPLICATIONS:**

Chemical industry Painting Construction Fishing & agriculture Metallurgy

Public works Petrochemical

#### FEATURES

LINER: 13 gauge seamless knit cotton COATING: PVC **GRIP:** Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
690	8/M	660mm
690	9/L	660mm
690	10/XL	660mm
690	11/XXL	660mm





# PV



## showa **160R**

#### Unsupported PVC glove

#### **BENEFITS:**

- Seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments
- Excellent dexterity and tactility
- Surface enables a secure grip
   on slippery objects
- Extended protection on the forearm
- Non-powdered, "slip-on" treatment
- Easy to put on and remove, lint-free, dust-free
- A thin, light glove with a "second skin" feel

#### **APPLICATIONS:**

Petrochemical Janitorial Chemical industry Pharmaceutical & laboratory

#### FEATURES

LINER: Unsupported COATING: PVC THICKNESS: 0.30mm GRIP: Smooth +: Slip on treatment for easy to put

on/off			
REF.	SIZE	LENGTH	
160R	8/M	300mm	
160R	9/L	300mm	





# BO700R

#### Unsupported PVC glove

## BENEFITS: Chemical protection with second skin feel

- Ultra-thin, light glove with a "second skin" feel
- PVC seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments
- Raised finished enables a secure grip on slippery objects
- Extended protection on the forearm
  Easy to put on and remove, lint-free, dust-free
- Designed for easy movement and extended wear
- Non-powdered, "slip-on" treatment

#### **APPLICATIONS:**

Pharmaceutical Healthcare Electronics

#### FEATURES

LINER: Unsupported COATING: PVC THICKNESS: 0.30mm GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curvature

REF.	SIZE	LENGTH	
B0700R	7/S	300mm	
B0700R	8/M	300mm	
B0700R	9/L	300mm	
B0700R	10/XL	300mm	





Unsupported PVC glove with extended bonded sleeve, elasticated border and eyelet for ventilation and hanging

#### **APPLICATIONS:**

Pharmaceutical Healthcare Electronics

#### FEATURES

LINER: Unsupported COATING: PVC THICKNESS: 0.30mm GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curvature

SIZE	LENGTH
7/S	600mm
8/M	600mm
9/L	600mm
10/XL	600mm
	<b>SIZE</b> 7/S 8/M 9/L 10/XL







# 660ESD

Full PVC coating with extra PVC rough finish on the hand over cotton liner

#### BENEFITS:

- Protects objects from static electricity to avoid product damage and explosion
- PVC seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments, enabling you to grip objects securely
- In accordance with EN 1149, vertical resistivity < 10°  $\Omega$
- Wrist well protected
- Designed for easy movement and extended wear
- A flexible, soft glove that absorbs perspiration for comfort
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Petrochemical Automotive Refining Oil & Gas

#### FEATURES

LINER: Seamless knit cotton COATING: PVC GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
660ESD	9/L	300mm
660ESD	10/XL	320mm



## SHOWA EXPERTISE

#### **Chemical Terms and Processes to Note**

#### Permeation

The process by which a chemical moves through protective clothing materials at the molecular level. The passage of a liquid or gas through protective clothing consists of three steps; absorption, diffusion and desorption.

#### Penetration

The process by which a substance moves through a closure, seam or pinhole in protective clothing on a non-molecular level.

#### **Breakthrough Time**

The number of minutes from initial contact with a test chemical until it is first detected on the inside of the protective clothing measured using sensitive analytical testing. It is essentially the number of minutes until your skin is exposed inside the gloves or other protective clothing.

#### Degradation

The deleterious change in one or more physical properties of a protective clothing material due to contact with a chemical. Degradation changes may include delaminating, discoloration, hardening or loss of tensile strength.

#### Concentration

The amount or mass of a constituent divided by the total mass of a solution. Normally all Organic Solvents tested in this site are 100% pure. Acids and Caustics are solutions in water. In permeation testing of acids, in particular, the concentration will affect the breakthrough time. More concentrated acids will permeate sooner than dilutions.

#### **Heavy-Exposure**

In permeation testing this term refers to constant total immersion of the protective clothing material in the test chemical which represents the worst type of heavy exposure. The ASTM F739 Test Standard and EN 374 European Test Standard refers to this type of exposure.

#### **Intermittent Exposure**

ASTM F 1383 Standard Test Method for Permeation of Liquids or Gases through Protective Clothing Materials under Conditions of Intermittent Contact. SHOWA used a contact time of 1 minute where the glove material was fully immersed and 9 minutes of purge time where the glove material was unexposed to the chemical which was repeated for 240 minutes.



## BUTYL





## Unlined, unsupported butyl coating

## BENEFITS: Acetone and ketone resistance

- Butyl provides superior resistance to highly corrosive acids and is excellent for handling ketones and esters
- This synthetic rubber also provides the highest permeation resistance to gases and water vapours
- A thin, light glove with a "second skin" feel provides an excellent tactility and dexterity
- Cuff prevents dirt from entering the glove
- Designed for easy movement and extended wear

#### APPLICATIONS:

Chemical industry Acetone & ketone components Acid components Police & army Mustard gas protection

#### FEATURES

LINER: Unsupported COATING: Butyl THICKNESS: 0.35mm GRIP: Smooth

REF.	SIZE	LENGTH
874	7/S	350mm
874	8/M	350mm
874	9/L	350mm
874	10/XL	350mm
874	11/XXL	350mm





## showa 874R

Unlined, unsupported butyl coating with rough grip finish

#### APPLICATIONS:

Chemical industry Acetone & ketone components Acid components Police & army Mustard gas protection

#### FEATURES

LINER: Unsupported COATING: Butyl THICKNESS: 0.35mm GRIP: Rough

REF.	SIZE	LENGTH
874R	7/S	350mm
874R	8/M	350mm
874R	9/L	350mm
874R	10/XL	350mm
874R	11/XXL	350mm





# showa 878

## Unlined, unsupported butyl coating

#### APPLICATIONS:

Chemical industry Acetone & ketone components Acid components Police & army Mustard gas protection

#### FEATURES

LINER: Unsupported COATING: Butyl THICKNESS: 0.70mm GRIP: Smooth

REF.	SIZE	LENGTH
378	8/M	350mm
378	9/L	350mm
378	10/XL	350mm
378	11/XXL	350mm





## VITON



# showa 890

## Unlined viton over butyl coating with longue sleeves

## BENEFITS: PCB and hydrocarbon resistant

- Heavy-duty yet flexible, viton gloves were developed for the highest chemical-resistance barrier to aromatic hydrocarbons such as benzene, toluene, xylene and to most chlorinated solvents and aliphatic hydrocarbons
- Protects the hand from a wide array of chemical hazards
- Impermeable for working in damp or greasy environments
- Cuff prevents dirt from entering the glove
- Designed for easy movement and extended wear
- A thin, light glove with a "second skin" feel
- No latex allergy risks

#### APPLICATIONS:

Petrochemical Chemical industry PCBs

#### FEATURES

LINER: Unsupported COATING: Viton THICKNESS: 0.70mm GRIP: Smooth

REF.	SIZE	LENGTH
890	9/L	350mm
890	10/XL	350mm





# showa 892

Unlined viton over butyl coating

#### APPLICATIONS:

Petrochemical Chemical industry PCBs

#### FEATURES

LINER: Unsupported COATING: Viton THICKNESS: 0.30mm GRIP: Smooth

REF.	SIZE	LENGTH
892	7/S	300mm
892	8/M	300mm
892	9/L	300mm
892	10/XL	300mm
892	11/XXL	300mm







# 

# INSULATED

## **COLD PROTECTION**

The human body is in a comfortable situation when the heart is beating at a regular speed. This happens at a mean blood temperature of 37°C. Using the right cold protection equipment is not a luxury. It will protect the wearer against cold blisters, slipping and under-cooling, while providing a satisfying level of comfort and protection.

86. Latex86. PVC88. Nitrile88. Polyurethane

## **HEAT PROTECTION**

Burns to the hand and forearm can result into irreparable scar tissue. Prevent pain and scars by protecting yourself with heat resistant gloves. Insulated gloves protect up to 260°C. SHOWA also offers protection to Arc Flash with SHOWA 240.

90. Neoprene90. Sponge Neoprene





## **COLD PROTECTION**



## зноwа **451**

#### Latex palm coating over acrylic/cotton/polyester liner

#### **BENEFITS: Multipurpose winter glove**

- A comfortable, flexible glove that is very pleasant to wear in cold weather
- Protects the hand in damp & wet environments
- Surface provides tactile feel and better grip
- Breathable back of hand to reduce perspiration and increase comfort
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Agriculture Garden work Logistics Automotive Construction Public works Warehousing Distribution

#### FEATURES

LINER: Seamless knit acrylic/cotton/ polyester knit

#### COATING: Latex

**GRIP:** Rough **+:** Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
451	7/S	220mm
451	8/M	240mm
451	9/L	260mm





showa

Full PVC coating, extra coating on entire hand over cotton/fixed acrylic liner

### BENEFITS: Combination of cold and chemical protection

- A flexible, soft glove that absorbs perspiration, for ultra-comfortable extended wear and with good mechanical resistance
- PVC seals and protects the hand against chemicals while remaining flexible, up to -20 °C
- Impermeable for working in damp or greasy environments, enabling you to grip objects securely
- Extended protection on the forearm
- Fixed acrylic lining
- Designed for easy movement and continuous wear

#### APPLICATIONS:

Maritime sector Petrochemical Transport Fishing Logistics



LINER: Seamless knit fixed acrylic lining/cotton knit COATING: PVC

THICKNESS: 1.10mm GRIP: Rough

**+:** Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
460	8/M	300mm
460	9/L	300mm
460	10/XL	300mm





<sup>showa</sup>

## Removable cotton/acrylic liner with full PVC coating

#### APPLICATIONS:

Maritime sector Petrochemical Transport Logistics Fishing

#### FEATURES

LINER: Seamless cotton knit and removable acrylic liner COATING: PVC THICKNESS: 1.10mm GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
465	8/M	300mm
465	9/L	300mm
465	10/XL	300mm





SHOWA INDUSTRIAL SERIES



# showa

Full PVC coating, extra coating on entire hand over cotton/fixed acrylic liner

#### BENEFITS: Combination of cold and chemical protection

- A flexible, soft glove that absorbs perspiration, for ultra-comfortable extended wear and with good mechanical resistance
- PVC seals and protects the hand against chemicals while remaining flexible, up to -20 °C
- Impermeable for working in damp or greasy environments, enables a secure grip
- Extended protection on the forearm
- Fixed acrylic lining
- Flexible and soft PVC for ultra-comfort
- Designed for easy movement and continuous wear

#### APPLICATIONS:

Agriculture	Mechanical
Construction	Petrochemical
Marine	Transportation

#### FEATURES

LINER: Seamless knit fixed acrylic lining/cotton knit COATING: PVC THICKNESS: 1.50mm GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
490	8/M	300mm
490	9/L	300mm
490	10/XL	300mm





## <sup>showa</sup>

Full PVC coating, extra coating over entire hand on cotton/ removable acrylic liner

#### APPLICATIONS:

Maritime sector Petrochemical Transport Logistic Fishing

#### FEATURES

LINER: Seamless cotton knit and removable acrylic liner COATING: PVC THICKNESS: 1.50mm GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
495	8/M	300mm
495	9/L	300mm
495	10/XL	300mm









## **COLD PROTECTION**



showa

Full nitrile coating combined with nitrile foam on palm on polyester/nylon/insulated acrylic liner

#### BENEFITS: Premium combination of cold protection and oil resistant grip ideal for changeable weather conditions

- Insulated liner provides a barrier from cold ensuring warmth and comfort all day long
- Fully double engineered coating protects against liquids and water penetration
- Impermeable for working in damp or greasy environments, keeps your hands dry
- Dual nitrile coating technology provides optimal grip longevity
- Fixed acrylic terry liner
- Highly flexible and resistant to abrasion and tearing
- Seamless knit designed to prevent irritation

Mechanical

Petrochemical

Transportation

#### APPLICATIONS:

Agriculture Construction Marine

FEATURES

LINER: Seamless knit polyester/nylon/ insulated acrylic liner COATING: Nitrile/nitrile foam

#### **GRIP:** Foam

+: Ergonomic design hand mould that replicates the natural curves

SIZE	LENGTH
7/M	280mm
8/L	280mm
9/XL	285mm
10/XXL	290mm
	<b>SIZE</b> 7/M 8/L 9/XL 10/XXL





SHOWA

**TEMRES®** 282

Fully breathable microventilated polyurethane coating with micro roughened nitrile finish on fingertips over nylon/insulated acrylic liner

#### BENEFITS: Provides warmth with protection from liquids & oils in cold conditions while allowing comfort of a breathable glove

- Insulated liner provides a barrier from cold ensuring warmth and comfort all day long
- TEMRES® Waterproof technology
- High level of handling precision and optimal grip
- Fixed insulated acrylic liner
- Premium comfort and flexibility of PU
- Breathable technology allows warm air and moisture from inside to escape to keep your hands dry
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Construction Agriculture Offshore Logistics Transport Fishing

#### FEATURES

LINER: Seamless knit nylon/insulated

**COATING:** Breathable PU

#### GRIP: Rough

+: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
TEMRES 282	8/M	275mm
TEMRES 282	9/L	280mm
TEMRES 282	10/XL	285mm
TEMRES 282	11/XXL	300mm



For the first time warmth, breathability, waterproof and flexibility have all been combined into a revolutionary glove by using SHOWA's innovative technology platform.



#### COLD PROTECTION

Insulated liner provides barrier from cold ensuring warmth and comfort all day long.



#### BREATHABLE

Breathable micro-ventilated TEMRES\* technology: membrane fixed between coating and liner allows warm air and moisture from inside to escape to keep your hands dry.



#### WATERPROOF

Waterproof technology provides a barrier against water and liquids in wet environments.



PU coating on glove with micro roughened nitrile coating finish ensures strong grip.





Scan the QR-code with your smartphone camera to watch the video

## showa 406

Full foam latex coating doubled with latex on palm coating over nylon outer liner with insulated acrylic/nylon inner liner

## BENEFITS: Triple protection and comfort improves productivity and reduces cost

- Designed to protect at temperature down to -30°C, for short or intermittent contact
- Water-repellent surface combined with thermal insulating liner keep hands warm and dry enhancing productivity and allowing for longer work per
- Aerated material reduces heat loss via conduction and eliminates convection by trapping warm air inside the glove
- Engineered liner and foam latex moisture permeability dissipate sweat and prevent hands getting cold inside the glove
- Dual latex coating provides high abrasion resistance and comfort in longer use
- Coating technology enhances high level of flexibility and reduces fatigue
- SHOWA ergonomic design for premium fit

#### APPLICATIONS:

Winter general purpose Construction Logistic & warehousing Assembly Agriculture Lawn and garden DIY Refrigeration

#### FEATURES

LINER: Seamless knit nylon/insulated acrylic, nylon COATING: Latex foam / latex GRIP: Rough

REF.	SIZE	LENGTH
406	7/M	250mm
406	8/L	270mm
406	9/XL	290mm
406	10/XXL	290mm

BREATHABL

- FULL FOAN LATEX - THERMAL

LINER

RMAL JLATION



GENERAL PURPOSE IMPACT CUT | CHEMICAL | INSULATED | ANTISTATIC | SINGLE USE



## **HEAT PROTECTION**



# showa 6781R

## Full neoprene coating over cotton jersey liner

#### **BENEFITS: Chemical and heat resistant**

- Neoprene coating provides resistance to abrasion and a wide range of chemicals
- Protects the hand from oils, hydrocarbons and grease penetration
- Provides a high mechanical resistance while insulating against heat and cold
- Insulation against intermittent heat up to 100°C
- Wrist well protected
- Minimal allergy risks

#### APPLICATIONS:

Chemical Petrochemical Automotive Metallurgy

#### FEATURES

LINER: Cut and sewn cotton COATING: Neoprene GRIP: Rough

REF.	SIZE	LENGTH
6781R	10/L	305mm





SHOWA 8814

## Full neoprene spray coating over non-woven liner

#### **BENEFITS: Food safe approved**

- A comfortable, supple glove providing effective protection against abrasion
- High mechanical resistance while insulating against cold and intermittent heat up to 260°C
- Low-soil colour
- Wrist well protected
- Easy to put on and remove
- Suitable for food processing
- No latex allergy risks

#### APPLICATIONS:

Automotive Food processing Hot metal sheets Castings

#### FEATURES

LINER: Non-woven cut and sewn COATING: Neoprene spray GRIP: Rough

REF.	SIZE	LENGTH
8814	7/S	355mm
8814	8/M	355mm
8814	9/L	355mm
8814	10/XL	355mm





DuPont<sup>™</sup> Kevlar.

## зноwа **240**

Sponge neoprene palm coating over Kevlar<sup>®</sup>, modacrylic, fibreglass liner

#### BENEFITS: Combination of Arc flash and cut protection

- Protects against arc flash: Arc flash level 2
- Kevlar\* liner increases cut protection: EN 388 level C
- Good resistance against flames
   and heat
- Provides strong mechanical resistance level
- Flat dipped sponge neoprene coating provides excellent grip while remaining soft and flexible

#### **APPLICATIONS:**

Construction Maritime sector Metallurgy Oil & Gas/Offshore

#### FEATURES

LINER: 13 gauge seamless Kevlar\*/ modracrylic/fibreglass knit COATING: Sponge neoprene GRIP: Smooth

SIZE	LENGTH
7/S	233mm
8/M	260mm
9/L	280mm
10/XL	285mm
11/XXL	290mm
	<b>SIZE</b> 7/S 8/M 9/L 10/XL 11/XXL



SHOWA INDUSTRIAL SERIES





Forged with flame and cut-resistant materials, SHOWA 240 is the ultimate armor for arc flash protection in high-risk industries. Featuring a 13-gauge seamless knit liner reinforced with Kevlar<sup>®</sup> and sponge neoprene palm coating inherently flame-resistant.



## O SECONDS AFTERGLOW TIME







#### ASTM D6413 STANDARD TEST METHOD FOR FLAME RESISTANCE OF TEXTILES (VERTICAL TEST)

#### Afterflame time:

number of seconds during which there is a visible flame remaining on the fabric.

#### Afterglow time: the number of seconds during which there is a visible glow

remaining on the fabric.

#### Char length:

less than 6 inches

the length in inches of fabric

destroyed by the flame. Pass if

#### Melt/drip:

recorded occurrence of melting or dripping, if any.

#### ASTM F2675 TEST METHOD FOR RESISTANCE OF TEXTILES FROM ELECTRIC ARC FLASH

 Arc thermal protective value (ATPV): the amount of heat (cal./ cm<sup>2</sup>) that is sufficient to cause second-degree burn injury, based on the Stoll Curve at 50% probability. Arc rating: Level 1 > 4 cal./cm<sup>2</sup>, level 2 > 8.0 cal./cm<sup>2</sup>, level 3 > 24.9 cal./cm<sup>2</sup>, level 4 > 40 cal./cm<sup>2</sup>

#### 91

# 4

# ANTISTATIC

## **ANTISTATIC PROTECTION**

The human body, including the hand, charges itself with electrical charges. These charges can damage components (like semiconductors or printed circuit boards). That is why SHOWA offers a complete range of gloves to protect these components against static electricity.

Select the right liner and the right quality. The liner prevents electrostatic charges from migrating from the hand to the handled objects by channelling them towards the body to be dispersed in the air and discharged into the ground.

### 94. Antistatic





## ANTISTATIC



# showa **A0170**

Polyurethane palm coating over antistatic nylon/acrylic liner

#### **BENEFITS:** Antistatic properties

- Allows precision tasks to be performed and products to be transported with an extremely secure grip
- Surface resistivity between 105 and 107  $\Omega$  according to EN 1149-1
- A light, elastic low-lint glove with antistatic properties
- Protects the hand from oils and abrasion while remaining elastic and breathable
- Breathable back of hand to reduce perspiration
- Designed for easy movement and extended wear
- Seamless knit designed to prevent irritation
- No latex allergy risks

#### **APPLICATIONS:**

Automotive Electronics Printing

#### FEATURES

LINER: Seamless nylon/acrylic COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
A0170	6/S	210mm
A0170	7/M	220mm
A0170	8/L	230mm
A0170	9/XL	250mm







Polyurethane fingertips coating over antistatic nylon/acrylic liner

#### APPLICATIONS:

Automotive Electronics Printing

#### FEATURES

LINER: Seamless nylon/acrylic COATING: Polyurethane GRIP: Smooth +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
A0160	6/S	185mm
A0160	7/M	190mm
A0160	8/L	200mm
A0160	9/XL	220mm





# showa **A0150**

Uncoated antistatic nylon/acrylic liner

#### APPLICATIONS:

Automotive Electronics Printing

#### FEATURES

LINER: Seamless nylon/acrylic COATING: Uncoated +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
A0150	6/S	170mm
A0150	7/M	180mm
A0150	8/L	190mm
A0150	9/XL	210mm





Cross-sectional view

Because polyurethane is not dissipative, the dissipative acrylic fibre is placed at the surface of the knit and protrudes from the coating to give the glove the same surface resistivity in the knitted and coated areas.



# showa 660ESD

Full PVC coating with extra PVC rough finish on the hand over cotton liner

#### BENEFITS:

- Protects objects from static electricity to avoid product damage and explosion
- PVC seals and protects the hand against chemicals while remaining flexible
- Impermeable for working in damp or greasy environments, enabling you to grip objects securely
- Vertical resistivity < 10<sup>8</sup>  $\Omega$
- Wrist well protected
- Designed for easy movement and extended wear
- A flexible, soft glove that absorbs perspiration for comfort
- Seamless knit designed to prevent irritation

#### APPLICATIONS:

Petrochemical Automotive

#### FEATURES

LINER: Seamless knit cotton COATING: PVC GRIP: Rough +: Ergonomic design hand mould that replicates the natural curves

REF.	SIZE	LENGTH
660ESD	9/L	300mm
660ESD	10/XL	320mm





# showa 7550

Single use glove, 100% nitrile, antistatic properties, powder free, silicone free, 240mm long by 0.10mm thick

#### BENEFITS:

## •Antistatic properties: surface resistivity between 1011 and 1012 $\Omega$

Lightweight glove

#### APPLICATIONS:

Intricate parts handling Police & defense Aerospace Printing industry Painting & spray workshops Mechanical engoneering Automotive repairs and maintenance Petrochemical Food industry/HoReCa Electronics Tattooing Light chemical handling in agriculture, horticulture

#### FEATURES

COATING: Nitrile THICKNESS: 0.10mm GRIP: Textured

REF.	SIZE	LENGTH
7550	7/S	240mm
7550	8/M	240mm
7550	9/L	240mm
7550	10/XL	240mm

#### Cat. III EN 338: EN 374-5: EN 374-1: 2016 2016/Type C 0120 1000X



## showa 7565

Single use glove, 100% nitrile, antistatic properties, powder free, silicone free, 300mm long by 0.15mm thick

#### BENEFITS:

 Antistatic properties: surface resistivity between 10<sup>10</sup> and 10<sup>11</sup> Ω

#### APPLICATIONS:

Intricate parts handling Police & defense Aerospace Printing industry Painting & spray workshops Mechanical engoneering Automotive repairs and maintenance Petrochemical Food industry/HoReCa Electronics Tattooing Light chemical handling in agriculture, horticulture

#### FEATURES

COATING: Nitrile THICKNESS: 0.15mm GRIP: Textured

REF.	SIZE	LENGTH
7565	7/S	300mm
7565	8/M	300mm
7565	9/L	300mm
7565	10/XL	300mm





# SINGLE USE

### **DISPOSABLE GLOVES**

SHOWA is one of the most accomplished innovators and manufacturers of single use hand protection ever. The first to create single use nitrile, biodegradable nitrile and accelerator-free nitrile hand protection – we offer the broadest line of single use choices available within the industry.

We offer 11 different styles with 4 thicknesses and 2 lengths, suitable for environments such as medical, industrial and cleanroom, as well as the option of silicone- and accelerator-free.

All our single use gloves are 100% nitrile and designed to provide users with a latex allergy-free risk protection whatever task is at hand.

100. Cobalt blue series
102. Biodegradable nitrile
103. Cleanroom
103. Antistatic
104. Chemical resistance guide





## SHOWA SINGLE USE NITRILE RANGE

Combining years of expertise and market insight, SHOWA introduces the most comprehensive single use nitrile solution. The range offers a broad choice of single use gloves, composed of 11 different styles with 4 thicknesses, 2 lengths, from XS to XXL sizes, suitable for laboratory, pharmaceutical, cleanroom, food industry, automotive and harmful chemical usage and in compliance with all CE standards.

The single use range is designed to feature all the following physical properties and benefits:



## KEY FEATURES & PHYSICAL PROPERTIES

- 100% nitrile without plasticizers, powder-free and silicone-free
- Avoids latex allergies risks type I
- SHOWA quality AQL 0.65 to 1.5
- Force at break > 10N
- Elongation > 500%
- Dual labelling for expanded specific functions

#### COMFORT & PERFORMANCES

- High chemical performance against permeation and degradation
- Chlorinated glove offers easy donning, increased chemical resistance and improved physical properties
- Second skin feel, softer textureLow-modulus formulation
- to improve fit and reduce fatigue
- Textured finish on fingertips to enhance grip

As the original inventor of N-DEX<sup>®</sup>, the world's first single use nitrile glove in 1991, SHOWA has continued over the last two decades to bring further innovation to single use nitrile.

We analysed trends and growth drivers to become more competitive by offering the broadest lines of superior quality single use gloves and comprehensive solutions, complying with market requirements:

- Powder-free and latex-free
- Easy donning and doffing
- Chemical resistant
- Multiple choice colours, lengths and thicknesses
- Dual labelling
- High tensile strength

- Safe for workers' skin
- Comfort in use and high sensitivity
- Ergonomic fit
- Durable and cost-effective glove
- Accelerator-free
- Antistatic

## SINGLE USE NITRILE SERIES RANGE SUMMARY

						Ŷ			Y		
	7540	7545	7555	7580	7585	7505PF	7570	6110PF	C9905	7550	7535
THICKNESS (mm)	0.10	0.10	0.12	0.20	0.20	0.10	0.10	0.10	0.12	0.10	0.15
LENGTH (mm)	240	300	300	240	300	240	240	240	300	240	300
SIZES	XS-XXL	S-XXL	XS-XL	S-XXL	S-XXL	XS-XXL	XS-XL	XS-XXL	XS-XL	S-XL	S-XL
CE CATEGORY					III		III	III	III		III
EN 388	1000X	1000X		2001X	2001X					1000X	2000X
EN 374-5	•	•	•	•	•	•	•	•	•	•	•
EN 374-1	•	•	•	JKL	JKL	JKPT		КРТ	•	•	•
EN 455	•	•	•	•	•		•			•	•
FOOD APPROVED (EC No. 1935/2004)	•	•	•	•	•	•	•	•		•	•
EN 1149										•	•
SILICONE FREE	•	•	•	•	•	•	•		•	•	•
ACCELERATOR FREE							•				
ULTIMATE TENSILE STRENGTH (MPa)	≥ 14	≥ 14	≥ 14	≥ 14	≥ 14	≥ 14	≥ 14	≥ 20	≥ 14	≥ 14	≥ 14
ELONGATION AT BREAK (%) MIN.	500	500	500	500	500	500	500	550	500	500	500
FORCE AT BREAK (N)	10	10	16	20	20	6	11	6	16	10	16
GLOVES PER DISPENSER	100	100	50	50	50	100	100	100	100	100	50
DISPENSERS PER CARTON	20	20	20	20	20	10	20	10	10	20	20

disi Per



## **COBALT BLUE SERIES**



## 7540

Single use glove, 100% nitrile, powder-free, silicone-free, 240mm long by 0.10mm thick

#### BENEFITS:

- Dual labelling: PPE and medical device
- Ideal for chemical splash protection
- Laboratory, food industry, pharmaceutical, medical, electronic

#### APPLICATIONS:

Laboratory & analysis Pharmaceuticals & API Emergency services Medical Chemical industry Printing industry Painting and spray workshops Electronics Intricate parts handling Light assembly of oil-coated pieces Glass manufacturing Food industry/HoReCa Aerospace Cytostatics

#### FEATURES

COATING: Nitrile THICKNESS: 0.10mm GRIP: Textured

REF.	SIZE	LENGTH	
7540	6/XS	240mm	
7540	7/S	240mm	
7540	8/M	240mm	
7540	9/L	240mm	
7540	10/XL	240mm	
7540	11/XXL	240mm	





Single use glove, 100% nitrile, powder-free, silicone-free, 300mm long by 0.10mm thick

#### BENEFITS:

- Dual labelling: PPE and medical device
- Ideal for chemical splash protection
- Laboratory, food industry, pharmaceutical, medical, electronic

#### APPLICATIONS:

Laboratory & analysis Pharmaceuticals & API Emergency services Medical Chemical industry Printing industry Painting and spray workshops Electronics Intricate parts handling Light assembly of oil-coated pieces Glass manufacturing Food industry/HoReCa Aerospace Cytostatics

#### FEATURES

COATING: Nitrile THICKNESS: 0.10mm GRIP: Textured

REF.	SIZE	LENGTH
7545	7/S	300mm
7545	8/M	300mm
7545	9/L	300mm
7545	10/XL	300mm
7545	11/XXL	300mm





## 7555

Single use glove, 100% nitrile, powder-free, silicone-free, 300mm long by 0.12mm thick

#### BENEFITS:

- Dual labelling: PPE and medical device
- Ideal for chemical splash protection
- Laboratory, food industry, pharmaceutical, medical, electronic

#### APPLICATIONS:

Laboratory & analysis Pharmaceuticals & API Emergency services Medical Chemical industry Printing industry Painting and spray workshops Electronics Intricate parts handling Light assembly of oil-coated pieces Glass manufacturing Food industry/HoReCa Aerospace Cytostatics

#### FEATURES

COATING: Nitrile THICKNESS: 0.12mm GRIP: Textured

REF.	SIZE	LENGTH
7555	6/XS	300mm
7555	7/S	300mm
7555	8/M	300mm
7555	9/L	300mm
7555	10/XL	300mm



SHOWA INDUSTRIAL SERIES



## 7580

Single use glove, 100% nitrile, powder-free, silicone-free, 240mm long by 0.20mm thick

#### BENEFITS:

- Thicker glove provide more resistance to chemicals
- Chemical industry, printing,
- aerospace, heavy chemical handling
- Dual labelling: PPE and medical device

#### APPLICATIONS:

Laboratory & analysis Pharmaceuticals & API Emergency services Medical Chemical industry Printing industry Painting and spray workshops Electronics Intricate parts handling Light assembly of oil-coated pieces Glass manufacturing Food industry/HoReCa Aerospace Cytostatics

#### FEATURES

COATING: Nitrile THICKNESS: 0.20mm GRIP: Textured

REF.	SIZE	LENGTH
7580	7/S	240mm
7580	8/M	240mm
7580	9/L	240mm
7580	10/XL	240mm
7580	11/XXL	240mm





## showa 7585

Single use glove, 100% nitrile, powder-free, silicone-free, 300mm long by 0.20mm thick

#### BENEFITS:

- Thicker glove provide more resistance to chemicals
- Chemical industry, printing, aerospace, heavy chemical handling
- Dual labelling: PPE and medical device

#### APPLICATIONS:

Laboratory & analysis Pharmaceuticals & API Emergency services Medical Chemical industry Printing industry Painting and spray workshops Electronics Intricate parts handling Light assembly of oil-coated pieces Glass manufacturing Food industry/HoReCa Aerospace Cytostatics

#### FEATURES

COATING: Nitrile THICKNESS: 0.20mm GRIP: Textured

REF.	SIZE	LENGTH
7585	7/S	300mm
7585	8/M	300mm
7585	9/L	300mm
7585	10/XL	300mm
7585	11/XXL	300mm







## BIODEGRADABLE



5HOWA

Single use glove, 100% nitrile, powder-free, silicone-free, 240mm long by 0.10mm thick

#### **BENEFITS: Chemical protection**

- 0.10mm thickness protects from a wide array of chemical hazards while avoiding latex allergies
- Patented low-modulus formulation to improve fit and reduce fatigue
- Easy to put on and remove
- Ambidextrous; can be worn on either hand

#### **APPLICATIONS:**

Electronic components Integrated circuits Chemical industry Laboratory & pharma Quality control Automotive

#### FEATURES

COATING: Nitrile THICKNESS: 0.10mm GRIP: Textured

SIZE	LENGTH
5-6/XS	240mm
6-7/S	240mm
7-8/M	240mm
8-9/L	240mm
9-10/XL	240mm
10-11/XXL	240mm
	<b>SIZE</b> 5-6/XS 6-7/S 7-8/M 8-9/L 9-10/XL 10-11/XXL





7570

Accelerator free single use glove, 100% nitrile, powderfree, silicone-free, 240mm long by 0.10mm thick

#### BENEFITS:

- Fluorescent High Visibility: Increased safety in poor lighting conditions
- Lightweight glove
- Accelerator-free formulation: protect very sensitive skins

#### APPLICATIONS:

Pharmaceutical Laboratories Hospital & medical care Pharmaceuticals & API Emergency services Agriculture, Horticulture Light assembly Chemical industry Petrochemical Automotive repairs and maintenance

#### FEATURES

COATING: Nitrile THICKNESS: 0.10mm GRIP: Textured

REF.	SIZE	LENGTH
7570	6/XS	240mm
7570	7/S	240mm
7570	8/M	240mm
7570	9/L	240mm
7570	10/XL	240mm





# showa 6110PF

Biodegradable single use glove, 100% nitrile with EBT® technology, powder-free, 240mm long by 0.10mm thick

#### BENEFITS: The world's first

biodegradable single use nitrile glove

- EBT\* maintain the same properties as regular nitrile
- EBT\* technology: accelerates the biodegradation of nitrile in biologically active landfills
- EBT\* is composed of organic materials designed to make 6110PF attractive to microbial activity
- The microorganisms upon consuming the EBT\* material excrete enzymes that depolymerize the nitrile in 1-5 years
- Second skin feel
- Ambidextrous; can be worn on either hand
- EU Food safe approved

#### **APPLICATIONS:**

Janitorial/Sanitation Laboratory Analysis Intricate Parts Handling Automotive Technical Maintenance Food Processing

#### FEATURES

**COATING:** Biodegradable nitrile **THICKNESS:** 0.10mm **GRIP:** Smooth

REF.	SIZE	LENGTH
6110PF	6-7/S	240mm
6110PF	7-8/M	240mm
6110PF	8-9/L	240mm
6110PF	9-10/XL	240mm
6110PF	10-11/XXL	240mm



SHOWA INDUSTRIAL SERIES

## CLEANROOM ANTISTATIC



## showa C9905PF

Single use glove, 100% nitrile, powder-free, silicone-free, 300mm long by 0.12mm thick

#### BENEFITS:

- Certified and suitable for use in Class 100 cleanroom environment.
- Process : Laundered with 0.2 micron filtered high resistivity D.I. water and packed in certified cleanroom environment
- White colour for cleanroom where high standards of industrial hygiene are required

#### APPLICATIONS:

Pharmaceuticals & API Biotechnology Optics Microelectronic Semiconductors Quality control Integrated circuits Laboratory & pharma Life sciences

#### FEATURES

COATING: Nitrile THICKNESS: 0.12mm GRIP: Textured

REF.	SIZE	LENGTH
C9905PF	6/XS	300mm
C9905PF	7/S	300mm
C9905PF	8/M	300mm
C9905PF	9/L	300mm
C9905PF	10/XL	300mm





# <sup>showa</sup>

Single use glove, 100% nitrile, antistatic properties, powder-free, silicone-free, 240mm long by 0.10mm thick

#### BENEFITS:

## •Antistatic properties: surface resistivity between 1011 and 1012 $\Omega$

• Lightweight glove

#### APPLICATIONS:

Intricate parts handling Police & defense Aerospace Printing industry Painting & spray workshops Mechanical engoneering Automotive repairs and maintenance Petrochemical Food industry/HoReCa Electronics Tattooing Light chemical handling in agriculture, horticulture

#### FEATURES

I

COATING: Nitrile THICKNESS: 0.10mm GRIP: Textured

REF.	SIZE	LENGTH	
7550	7/S	240mm	
7550	8/M	240mm	
7550	9/L	240mm	
7550	10/XL	240mm	





## showa 7565

Single use glove, 100% nitrile, antistatic properties, powder-free, silicone-free, 300mm long by 0.15mm thick

#### BENEFITS:

 Antistatic properties: surface resistivity between 10<sup>10</sup> and 10<sup>11</sup> Ω

#### APPLICATIONS:

Intricate parts handling Police & defense Aerospace Printing industry Painting & spray workshops Mechanical engoneering Automotive repairs and maintenance Petrochemical Food industry/HoReCa Electronics Tattooing Light chemical handling in agriculture, horticulture

#### FEATURES

COATING: Nitrile THICKNESS: 0.15mm GRIP: Textured

REF.	SIZE	LENGTH
7565	7/S	300mm
7565	8/M	300mm
7565	9/L	300mm
7565	10/XL	300mm

#### Cat. III EN 388: EN 374-5: 2016 2016 2016/Type C 0493 2000X EN 374-5: 2016/Type C EN 374-1: 2016 2016/Type C EN 455 MD CLASS 1

# (2)

## CHEMICAL RESISTANCE GUIDE SINGLE USE NITRILE SERIES

#### The level (0 to 6) indicates the time required for different chemicals to permeate through the glove.

BREAKTHROUGH TIME		PERFORMANCE LEVEL
≤ 1 minute	Level 0	Not recommended
1 to 5 minutes	Level 0+	Splash protection only; change the glove immediately after contact!
6 to 10 minutes	Level 0++	Splash protection only; change the glove immediately after contact!
> 10 minutes	Level 1	Short contact only; change the glove after 10 minutes max!
> 30 minutes	Level 2	Medium protection, 30 minutes contact.
> 60 minutes	Level 3	Medium protection, 60 minutes contact.
> 120 minutes	Level 4	Good protection level.
> 240 minutes	Level 5	Very good protection level.
> 480 minutes	Level 6	Excellent protection level.

TTL: total immersion chemical permeation breakthrough time.

INT : intermittent contact chemical permeation breakthrough time, one minute immersion out of every ten, repeatedly.



			0		0		/	
CHEMICAL AGENT	CAS Number	TTL	INT	TTL	INT	TTL	INT	
ACETALDEHYDE	75-07-0	<1	1	1	2	1	6	
ACETIC ACID (84%)	64-19-7	11	37	22	73	29	98	
ACETONE	67-64-1	<1	2	1	4	2	6	
ACETONITRILE	75-05-8	4	13	5	14	7	15	
ACETOXYACETYL CHLORIDE	13831-31-7	4	8	8	25	15	30	
ACRYLAMIDE	79-06-1	>120	>240	>240	>240	>480	>240	
ACRYLONITRILE	107-13-1	<1	<1	<1	1	<1	3	
ALKASOL 27	90111-76-3	>120	>240	>240	>240	>480	>240	
ALLYL ALCOHOL	107-18-6	<1	4	1	6	4	16	
ALODINE 1000 SOLUTION	97631-99-6	>120	>240	>240	>240	>480	>240	
ALODINE 1200S SOLUTION	93755-29-8	>120	>240	>240	>240	>480	>240	
AMMONIUM HYDROXIDE (29%)	1336-21-6	9	30	18	60	54	164	
AMYL ACETATE	628-63-7	<1	1		4	3	11	
AMYL ALCOHOL	71-41-0	24	37	48	93	72	149	
ANILINE	62-53-3	<1	<1	<1	<1	<1	3	
ANTIMONY TRIBUTYRATE (95%)	53856-17-0	>120	>240	>240	>240	>480	>240	
BATTERY ACID (47%)	7664-93-9	>480	>240	>480	>240	>480	>240	
BENZALDEHYDE	100-52-7	2	8	5	16	9	31	
BENZENAMINE	62-53-3	<1	<1	<1	<1	<1	3	
BENZENE	71-43-2	<1	<1		2	2	3	

showa 7505	showa 7540	showa 7545	showa 7550	showa 7555	showa 6110	showa 7570	showa C9905	sно 75	SHOWA 7565		SHOWA
<u></u>									)		
CHEMIC	AL AGEN	Т		CAS Nur	nber	TTL	INT	TTL	INT	TTL	INT
BENZYL ALC	OHOL			100-51-6		<1	<1	1	2	6	20
BLASOCUT 2	2000 UNIVER	SAL (70%)		98608-26-6		>120	>240	>240	>240	>480	>240
BLASOCUT 4	4000			94742-52-7		>120	>240	>240	>240	>480	>240
BLEACH: SO	<b>DIUM НҮРОС</b>	HLORITE (4-6	5%) (6%)	7681-52-9		>480	>240	>480	>240	>480	>240
BOEING ALKASOL 27 (10%)			90111-76-3		>120	>240	>240	>240	>480	>240	
<b>BOEING ALODINE 1000 SOLUTION (1%)</b>			97631-99-6		>120	>240	>240	>240	>480	>240	
<b>BOEING ALODINE 1200S SOLUTION (2%)</b>			93755-29-8		>120	>240	>240	>240	>480	>240	
BOEING BLA	SOCUT 4000	)		94742-52-7		>120	>240	>240	>240	>480	>240
BORIC ACID	-SULFURIC A	CID (6%)		90043-35-4		>120	>240	>240	>240	>480	>240
BROMOETH	YL ACETATE, 2	2-		927-68-4		2	7	4	12		35
BROMOFOR	м			75-25-2		<1	<1	1	2	3	11
BUTANOL				71-36-3		13	43	17	57	24	80
BUTOXYPRO	PANOL			5131-66-8		6	20	8	27		36
BUTOXYTRIC	GLYCOL			143-22-6		6	20	8	27	11	36
BUTYL ACET	ATE			123-86-4		<1	<1	<1	<1	<1	<1
BUTYL ACRY	(LATE			141-32-2		1	3	2	4	4	6
BUTYL ALCO	HOL			71-36-3		13	43	17	57	24	80
BUTYL ETHA	NOATE			123-86-4		<1	<1	<1	<1	<1	<1
BUTYL TOLU	IENE P-TERT-			98-51-1		11	37	14	47	20	67
BUTYLAMIN	E			109-73-9		<1	<1	<1	<1	<1	<1
CAPRINUS U	MULTIGRAD	E RAILROAD	OIL	66532-00-0		>480	>240	>480	>240	>480	>240
CARBON TE	TRACHLORID	E		56-23-5		1	2	2	6	7	24
CASCADE CO	OLUMBIA 3 PA	ART A		90112-34-7		35	115	69	230	138	>240
CELLOSOLVI	E ACETATE			111-15-9		<1	2	1	4	3	9
CHEVRON JI	ET FUEL A			94742-80-1		>120	>240	>240	>240	>480	>240
CHLOROBEN	ZENE			108-90-7		<1	2		4	2	6
CHLOROFOF	RM			67-66-3		<1	<1	<1	<1	<1	<1
CHROMIC AC	CID			1333-82-0		<1	<1	<1	<1	<1	<1
CHROMIUM	TRIOXIDE (50	)%)		1333-82-0		<1	<1	<1	<1	<1	<1
CITRA-SAFE	DEODORIZE	R		95989-27-5		6	21	13	42	25	83
CITRIC ACID	(30%)			77-92-9		>480	>240	>480	>240	>480	>240
CITRUS TERI	PENES MIXTU	IRE		68956-56-9		65	216	130	>240	259	>240
CRESOLS				1319-77-3		<1	<1	<1	<1	<1	<1
CRESYLIC A	CID			79-10-7		<1	<1	<1	<1	<1	<1
CUMENE				98-82-8		2	4	5	7	9	14
CYCLOHEXA	NE			110-82-7		10	33	20	67		>240
CYCLOHEXA	NOL			108-93-0		80	>240	160	>240	275	>240
CYCLOHEXA	NONE			108-94-1			3	2	4	2	6
CYCLOHEXY	L KETONE			108-94-1		1	3	2	4	2	6
DARACLEAN	1 282			90112-34-9		>120	>240	>240	>240	>480	>240
DESOCLEAN	45 MIXTURE	(50%)		90067-63-1		<1	2		3	3	10
DIACETONE	ALCOHOL			123-42-4		<1	<1	<1	<1	<1	<1
DIBUTYL PH	THALATE N-			84-74-2		60	200	85	>240	120	>240
DICHLOROB	ENZENE O-			95-50-1		<1	<1	<1	<1	<1	<1
DICHLOROE	THANE 1,2-			107-06-2		<1	2		3	4	15
DIESEL FUEL	_			77650-28-3		>480	>240	>480	>240	>480	>240
DIETHANOL	AMINE			111-42-2		24	80	48	160	128	>240
DIETHYL ETH	HER			60-29-7		<1			2	2	3
DIETHYLAM	INE			109-89-7		<1	2	1	4	4	10
DIETHYLENE	E GLYCOL			111-46-6		>120	>240	>240	>240	>480	>240









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CHEMICAL AGENT	CAS Number	TTL	INT	TTL	INT	TTL	INT
DI-ISOBUTYL KETONE	108-83-8	19	62	37	123	74	>240
DIMETHYL FORMAMIDE	68-12-2	<1	2	1	4	3	9
DIMETHYL SULFATE	77-78-1	8	25	15	32	30	40
DIMETHYL-4-HEPTANONE, 2,6-	108-83-8	19	62	37	123	74	>240
DIMETHYLACETAMIDE N,N-	127-19-5	2	8	5	15	9	30
DIMETHYLSULFOXIDE	67-68-5	23	77	46	153	61	204
DINITROL AV30 SPRAY	94894-36-1	>120	>240	>240	>240	>480	>240
DINITROL AV8 MOD	94742-48-1	>120	>240	>240	>240	>480	>240
DINITROTOLUENE (40% IN ROH) (40%)	121-14-2	1	3	2	7	6	21
DIOXANE 1,4-	123-91-1	2	6	4	12	7	14
DIVINYL BENZENE	1321-74-0	5	17	10	33	20	66
DMAC	127-19-5	2	8	5	15	9	30
DMF	68-12-2	<1	2		4	3	9
DMSO	67-68-5	23	77	46	153	61	204
DONAX TG TRANSMISSION FLUID	60486-00-0	>480	>240	>480	>240	>480	>240
DOWTHERM, BIPHENYL (27%)	92-52-4	<1	<1	<1	<1	<1	<1
DUBL-CHEK PENETRANT MIXTURE	68131-40-8	>120	>240	>240	>240	>480	>240
ETHANOL	64-17-5	7	23	14	47	24	80
ETHANOLAMINE	141-43-5	6	20	12	40	24	80
ETHIDIUM BROMIDE (5%)	1239-45-8	>480	>240	>480	>240	>480	>240
ETHYL ACETATE	141-78-6	<1	4	2	7	4	14
ETHYL ALCOHOL	64-17-5	7	23	14	47	24	80
ETHYL ALDEHYDE	75-07-0	<1			2	1	6
ETHYL BENZENE	100-41-4	<1	<1		2	2	4
ETHYL BUTANOL	97-95-0	<1	3		6	3	
ETHYL ETHER	60-29-7	<1			2	2	3
ETHYLAMINE	75-04-7	<1	<1	<1	<1	<1	<1
ETHYLENE DICHLORIDE	107-06-2	<1	2		3	4	15
ETHYLENE GLYCOL	107-21-1	>480	>240	>480	>240	>480	>240
ETHYLENEDIAMINE (99%)	107-15-3	<1	2	1	5	4	13
FCC-55	90108-10-2	2	5	3	10	6	20
FLUOBORIC ACID (49%)	16872-11-0	10	30	20	67	30	100
FORMALDEHYDE (37%)	50-00-0	>480	>240	>480	>240	>480	>240
FORMIC ACID	64-18-6	<1	2	1	4	9	30
FREON 113	76-13-1	3	10	6	20	12	40
FURFURAL	98-01-1	<1	2		3	2	9
FURFURALDEHYDE	98-01-1	<1	2		3	2	9
GASOLINE (PREMIUM UNLEADED)	8032-32-4	9	30	18	60	39	130
GASOLINE (UNLEADED)	8006-61-9	1	2	2	7	6	20
GLACIAL ACETIC ACID (84%)	64-19-7	11	37	22	73	29	98
GLUTARALDEHYDE	111-30-8	30	100	60	200	120	>240
HEPTANE	142-82-5	31	103	62	207	100	>240
HEXALIN	108-93-0	80	>240	160	>240	275	>240
HEXANE	110-54-3	11	30	15	50	20	85
HEXENE	592-41-6	<1	<1	<1	<1	<1	<1

CHE         CAS Number         TTL         INT         TTL         INT         INT         INT         INT           HURDSMAN DMETNYLCOMEXYLAININE         99.92         4         13         9         29         95         90         90         90           HURDSMAN DMETNYLCOMEXYLAININE         92.92.92         130         -200         220         420         400         900         920         -200         220         420         920         -200         220         420         920         -200         920         -200         920         -200         920         -200         920	showa 7505	showa 7540	showa 7545	showa 7550	showa 7555	showa 6110	showa 7570	showa C9905	sно 75	showa 7565		SHOWA 7585
CHEMICAL AGENTCAS NumberTTLINTITLINTITLINTITLINTHURTSMAN DIMETRYLYCLOREXYL AMME96.94.2410620100100HURTSMAN HETRYLOREXOL AMME106.041420100200200400400HURTSMAN HETRYLORENODE152.291109240924092409440944094409440HURTSMAN HETRYLORENOLINE725.29110924092409440944094409440HURTSGALMER CONSCI (57)747-10-0924094409440944094409440HURTSGALMER CONSCI (57)772-24-192041020920 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>~</th> <th></th> <th></th> <th colspan="2"></th> <th></th>							~					
NUMPSMAL DIMETRY LAYELONEXYL LAMINE99.94.241565561080NUMPSMAL DIFFERENCE0.09.9138.020.010.040.0	CHEMIC	AL AGEN	т		CAS Nur	nber	TTL	INT	TTL	INT	TTL	INT
HUNTSAMA DIMETIN'LIPERAZINE105 9141162717471747174717471747174717471747 <th>HUNTSMAN</th> <th>DIMETHYLCY</th> <th>CLOHEXYL A</th> <th>MINE</th> <th>98-94-2</th> <th></th> <th>4</th> <th>13</th> <th>8</th> <th>25</th> <th>15</th> <th>50</th>	HUNTSMAN	DIMETHYLCY	CLOHEXYL A	MINE	98-94-2		4	13	8	25	15	50
NUMESHAM LEFEAT DYNDE445 91444974.09.09.004.00NUMESHAM LEFEAT DYNDE750-74700<	HUNTSMAN	DIMETHYLPI	PERAZINE		106-58-1		8	25	15	50	30	100
NUMERAL NUMBERA 	HUNTSMAN .	JEFFCAT DMI	DEE		6425-39-4		4	13	8	25	15	50
NYPRORUNCIAL (DYN)SO2012SO20P200 <th< th=""><th>HUNTSMAN</th><th>METHYLMOR</th><th>PHOLINE</th><th></th><th>7529-22-8</th><th></th><th>113</th><th>&gt;240</th><th>227</th><th>&gt;240</th><th>453</th><th>&gt;240</th></th<>	HUNTSMAN	METHYLMOR	PHOLINE		7529-22-8		113	>240	227	>240	453	>240
NYPROCHLORIC ACID (37%)7440144009.2409.4409.2409.4409.2409.4409.240 <th colspan="3">HYDRAZINE HYDRATE (85%)</th> <th>302-01-2</th> <th></th> <th>&gt;120</th> <th>&gt;240</th> <th>&gt;240</th> <th>&gt;240</th> <th>&gt;480</th> <th>&gt;240</th>	HYDRAZINE HYDRATE (85%)			302-01-2		>120	>240	>240	>240	>480	>240	
NYDROPLLONIC ACID (48%)756.43-3.72.34.404.708.4009.2009.2008.4509.2009.2008.4509.2009.2008.4509.200	HYDROCHLO	ORIC ACID (37	7%)		7647-01-0		>480	>240	>480	>240	>480	>240
NYPORCEN PEROXIDE (30%)772-04-11400.0400 </th <th colspan="3">HYDROFLUORIC ACID (48%)</th> <th>7664-39-3</th> <th></th> <th>7</th> <th>23</th> <th>14</th> <th>47</th> <th>19</th> <th>50</th>	HYDROFLUORIC ACID (48%)			7664-39-3		7	23	14	47	19	50	
Sign APYL ACETATE125-0-2121337Sign APYL ACCHOL125-0-5122456Sign BUTANOL125-0-540012501001260<	HYDROGEN	PEROXIDE (3	0%)		7722-84-1		>480	>240	>480	>240	>480	>240
ISD AUYLALCONOL       123 51-31       1       2       2       4       5       6         ISD-BUTANOL       78-851       40       133       800       >2400       800       >2400       800       >2400       800       >2400       800       >2400       100	ISO AMYL AG	CETATE			123-92-2		<1	2		3	3	7
B3-BUTANOL     ?243:1     400     133     800     ?240     820     820     820       ISO-CTARE     540-64-1     100     ?240     740     720     720     720       ISOPENTANOL     25 513     1     2     2     4     5     7       ISOPENTALCETATE     107-74     1     3     3     3     5     10       ISOPROPULACETATE     107-74     2     4     5     7     9     12       ISOPROPULACETATE     9474-70-7     8     720     740     9     10       IFFUELPA     9472-70-7     8     720     740     9     10       IFFUELPA     9472-70-7     8     280     720     740     9     10       ILCTCACID (85%)     502-15     7     70     9     10     10     12     700     740       ILMONERE O-     9809-75     1     8     740     700     720     720     720       ILMONERE O-     9809-75     1     2     7     8     720     720       ILMONERE O-     989-75     1     2     7     7     7     7       ILMONERE O-     993-3     1     1     1     7     7 </th <th>ISO AMYL AL</th> <th>COHOL</th> <th></th> <th></th> <th>123-51-3</th> <th></th> <th></th> <th>2</th> <th>2</th> <th>4</th> <th>5</th> <th>6</th>	ISO AMYL AL	COHOL			123-51-3			2	2	4	5	6
sobeCTANE     Subel	ISO-BUTANC	DL			78-83-1		40	133	80	>240	88	>240
INDERIVANOL       125-13       1       2       4       5       6         ISOPERVALACETATE       125-97-2       1       2       1       3       8       5       10         ISOPROPYLACETATE       109214       1       3       8       5       10         ISOPROPYLACETATE       19924       2       4       5       7       9       14         ISOPROPYLACETATE       9422400-1       700       7200       <	ISO-OCTANE				540-84-1		120	>240	240	>240	389	>240
SIDENTYL ACETATE125-92-2IIJJJ<	ISOPENTANO	DL			123-51-3		1	2	2	4	5	6
ISOPROPYL ACETATE10%27-4133659ISOPROPYL ALCOHOL67-63-028934.31.436002000ISOPROPYL ENCZENE98-82-4Z457.7944JET FUEL JA94742-479-182240-2400-240022402240JET FUEL JP-99008-20-672002240-2400-240024002240JET FUEL JP-99008-20-68250169203.00000LACTC ACID (85%)50-21-582240-44802240-24002240ILONONE D-9899-27-582240-44802240-24002240-2400MADRELLA P ISO 0IL5930-00-08-4802240-44802240-2400-2400MEK/SBA9007-92-36-11132-5MEK/SBA9007-92-36-11149301METHANOL6756-11225735METHANOL6756-11225735METHANOL6756-11225735METHANOL6756-11225735METHAUCAUDIC75-511325METHAUCAUDIC75-511325METHAUCAUDIC76-51142735 <tr<< th=""><th>ISOPENTYL</th><th>ACETATE</th><th></th><th></th><th>123-92-2</th><th></th><th>&lt;1</th><th>2</th><th></th><th>3</th><th>3</th><th>7</th></tr<<>	ISOPENTYL	ACETATE			123-92-2		<1	2		3	3	7
SoppopyLALCOHOL67-63-020934.31.4360200ISOPROPYLBENZENE99-82-824S791.4JET FUEL JA94742-80-112052403-243-24	ISOPROPYL	ACETATE			108-21-4			3	3	8	5	10
ISOPROPYLEENZENE98-82-82457914JET FUEL A94/42-07-1>D20>2400>2400>2400>24002400JET FUEL JP-A94/42-47-988281750533100JET FUEL JP-B9008-20-6>D80>2400>2400>24005002000LACTC ACID (95%)50-21-594002240A48002240A48002240A48002240LACTC ACID (95%)50-21-594002240A48002400A48002240A48002240MARENE D-5939-27-58261692312240MARENE D-5939-27-582611322400MARENE D-5939-27-5826111322400MARENE D-5939-27-5864127252400MEKY ACID (90%)64-18-6112214950METHANOL67-5-1122571515159030121515151516151612125151515161516121122515 <td< th=""><th>ISOPROPYL</th><th>ALCOHOL</th><th></th><th></th><th>67-63-0</th><th></th><th>28</th><th>93</th><th>43</th><th>143</th><th>60</th><th>200</th></td<>	ISOPROPYL	ALCOHOL			67-63-0		28	93	43	143	60	200
FYELA         94/42-80-1         720         220         720         720         7400         7400           JET FUEL JP-4         94/42-80-1         8         28         17         55         33         110           JET FUEL JP-4         96008-20-6         8         28         17         55         33         110           JET FUEL JP-8         96008-20-6         8         28         15         50         30         2000           KEROSENE         8006-20-5         80         2200         2400         2200         210         210	ISOPROPYLE	BENZENE			98-82-8		2	4	_5	_7	9	14
Def Fuel D-4       94742-47-9       8       220       17       50       53       50         JET FUEL JP-8       98009-20-6       -200       -220       -2200       -2200       -2200       -2200       -2200       2200	JET FUEL A				94742-80-1		>120	>240	>240	>240	>480	>240
Linker (1)       100       100       100       100       100       100         Lip FueL, 19-8       9006-20-6       8       25       15       50       300       100         Lic Tic AciD (65%)       50-21-5       9480       2240       2480	JET FUEL JP	-4			94742-47-9		8	28	17	55	33	110
Normality         Dist         Dis         Dist         Dist	JET FUEL JP	-8			98008-20-6	5	>120	>240	>240	>240	>480	>240
Actic Actio (205%)     50-21-5     7480     3-240     3-240     5-240     3-240	KEROSENE	-			8008-20-6		8	25	15	50	30	100
Into Name D-       Sole of the set o		(85%)			50-21-5		>480	>240	>480	>240	>480	>240
NUMERIC       100       240       240       3480       220       5480       240         MADRELLA P ISO OL       56930-00-00       5480       1       1       3       2       5         MEK       78-93.3       -1       1       1       3       2       5         MEK/SBA       90078-92.3       2       6       4       12       7       23         METHANOL       67-56-1       1       2       2       5       7       13         METHYLACETATE       79-09-9       -1       2       1       4       9       30         METHYLACETATE       79-05-8       4       13       5       14       7       15         METHYLACETATE       79-05-8       4       13       5       14       2       7       15         METHYLACETATE       79-05-8       4       1       1       3       2       5       7       15         METHYL KETONE       75-05-8       4       1       1       1       2       5       15         METHYL KETONE       10-01-01       1       4       2       76       52       15         METHYL KETONIME       <		)-			5989-27-5		8	26	16	52	31	>240
Mixik         Distance         Distance <thdistance< th="">         Distance         <th< th=""><th>MADRELLA</th><th>P 150 OIL</th><th></th><th></th><th>56930-00-0</th><th>)</th><th>&gt;480</th><th>&gt;240</th><th>&gt;480</th><th>&gt;240</th><th>&gt;480</th><th>&gt;240</th></th<></thdistance<>	MADRELLA	P 150 OIL			56930-00-0	)	>480	>240	>480	>240	>480	>240
MRK       M	MFK				78-93-3		<1	1	1	3	2	5
Number         Non-Carlo (200%)         Carlo (200%) <th>MEK/SBA</th> <th></th> <th></th> <th></th> <th>90078-92-3</th> <th></th> <th>2</th> <th>6</th> <th>4</th> <th>12</th> <th>7</th> <th>23</th>	MEK/SBA				90078-92-3		2	6	4	12	7	23
Minimutering (2.17)       Constrained (2.17)       Constrained (2.17)       Constrained (2.17)         METHANOL       67-56-1       1       2       2       5       7       13         METHYLACETATE       79-20-9       C1       2       1       2       5       7       13         METHYLACETATE       79-20-9       C1       2       2       5       7       13         METHYLACETATE       79-20-9       C1       2       2       5       7       13         METHYLACETATE       79-20-9       C1       2       2       5       14       7       15         METHYLACETATE       75-58-1       1       1       1       5       2       5         METHYLETHYLETHYLETHYLETONE       78-93-3       C1       1       1       1       2       5       5       16         METHYLIODIDE       74-88-4       C1       C1       C1       C1       C1       2       1       2       5       15         METHYLISOBUTYL KETOXIME       108-062-6       C1       2       1       3       9       3       9       3       9       3       9       3       9       3       1	METHANOIC	ACID (90%)			64-18-6		<1	2		4	9	30
NUMBER       NOVE	METHANOL				67-56-1			2	2	5	7	13
METHYLALCOHOL       67-56-1       1       2       2       5       7       13         METHYLALCOHOL       67-56-1       1       2       2       5       7       13         METHYLALCOHOL       75-05-8       4       13       5       14       7       15         METHYLETHYLKETONE       78-93-3       11       1       1       3       2       5         METHYLODID       74-88-4       1       1       1       3       2       5         METHYLIODIDE       74-88-4       1       4       2       7       5       15         METHYLISOBUTYLKETONE       108-10-1       1       4       2       7       5       15         METHYLISOBUTYLKETONE       108-10-1       1       4       2       7       5       15         METHYLISOBUTYLKETONE       108-10-1       1       4       2       7       5       15         METHYLISOBUTYLKETONE       107-98-2       6       20       8       27       10       33       9         METHYLPROPASU SOLVENT       107-98-2       6       20       8       27       10       3       10         METHYLPROPAULACONDE		TATE			79-20-9		<1	2	1	2	, Z	3
METHYL CYANIDE       75-05-8       4       13       5       14       7       15         METHYL CYANIDE       75-05-8       4       13       5       14       7       15         METHYL CYANIDE       78-93-3       1       1       1       3       2       5         METHYL ETHYL KETONE       96-29-7       19       53       38       127       76       2240         METHYL IODIDE       74-88-4       <1       <1       <1       <1       <1       2       7       5       15         METHYL ISOBUTYL KETONE       108-10-1       1       4       2       7       5       15       15         METHYL ISOBUTYL KETONIME       105-44-2       >480       >240       >480       >240       >480       2240       >480       2240       >480       2240       3       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       10       33       9       33       10       33       10       33       10       33 <th></th> <th>000</th> <th></th> <th></th> <th>67-56-1</th> <th></th> <th></th> <th>2</th> <th>2</th> <th>5</th> <th>7</th> <th>13</th>		000			67-56-1			2	2	5	7	13
METHYL ETHYL KETONE       78-93-3        1       1       3       2       5         METHYL ETHYL KETONE       96-29-7       19       53       38       127       76       >240         METHYL IETHYL KETONIE       96-29-7       19       53       38       127       76       >240         METHYL IODIDE       74-88-4       <1       <1       1       <1       <1       <1       2         METHYL ISOBUTYL KETONE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONIE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONIE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONIE       108-62-6       <1       2       1       3       3       9         METHYL PROPASOL SOLVENT       107-87-9       <1       1       1       2       3       10         METHYL PROPYL KETONE       107-87-9       <1       1       1       2       1       4         METHYL PROLIDONE N-       872-50-4       2       6       4       12       7       240	METHYL CYA				75-05-8		4	13	5	14	, 7	15
METHYL ETHYL KETOXINE       96-29-7       19       53       38       127       76       >240         METHYL IODIDE       74-88-4       <1       <1       <1       <1       <1       2       76       >240         METHYL IODIDE       74-88-4       <1       <1       <1       <1       <1       <1       2       76       >240         METHYL ISOBUTYL KETONE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONE       106-44-2       >480       >240       >480       >240       >480       >240       >480       >240       3       9         METHYL PROPASOL SOLVENT       107-98-2       6       20       8       27       10       33       9         METHYL PROPASOL SOLVENT       107-98-2       6       20       8       27       10       33       10         METHYL ENCIDONE N-       872-50-4       2       6       4       12       7       24         METHYL ENCIDONE N-       872-50-4       2       6       4       12       7					78-93-3		<1	1	1	3	2	5
MILLINE LINE KLOWING       30 20 7       10 30 30 10 10 100       10 40 100 100       10 40 1000			F		96-29-7		19	57	78	127	76	>240
METHYL ISOBUTYL KETONE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONE       108-10-1       1       4       2       7       5       15         METHYL ISOBUTYL KETONIE       105-44-2       >480       >240       3       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       9       33       10       10       33       3       9       30       10       33       10       10       4       4       2       7       24       4       4       4       10       1       <			-		74-88-4		<1	<1	<1	<1	<1	2
METHYL ISOBUTYL KETOXIME       105-44-2       >480       >240       >480       >240       >480       >240         METHYL ISOBUTYL KETOXIME       105-44-2       >480       >240       >480       >240       >480       >240         METHYL METHACRYLATE       80-62-6       <1	METHYL ISO	BUTYL KETO	NE		108-10-1			4	2	7	5	15
MINIMULATION       No. 1.2       No. 1.2 </th <th>METHYL ISO</th> <th>BUTYL KETO</th> <th></th> <th></th> <th>105-44-2</th> <th></th> <th>&gt;480</th> <th>&gt;240</th> <th>&gt;480</th> <th>&gt;240</th> <th>&gt;480</th> <th>&gt;240</th>	METHYL ISO	BUTYL KETO			105-44-2		>480	>240	>480	>240	>480	>240
MINIMULTIC       OUTCOME       OUTCOME <th>METHYL MET</th> <th>THACRYLATE</th> <th></th> <th></th> <th>80-62-6</th> <th></th> <th>&lt;1</th> <th>2</th> <th>1</th> <th>3</th> <th>3</th> <th>9</th>	METHYL MET	THACRYLATE			80-62-6		<1	2	1	3	3	9
METHYL PROPYL KETONE       107-87-9       <1	METHYL PRO	OPASOL SOLV	'ENT		107-98-2		6	20	8	27	10	33
METHYL PYRROLIDONE N-       872-50-4       2       6       4       12       7       24         METHYL ENE CHLORIDE       75-09-2       <1       1       1       2       1       4         METHYLENE CHLORIDE       50-00-0       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240       >480       >240        50       50       15       9       30       18       60       60       60       200       18       60       200       14       1	METHYL PRO	OPYL KETONE			107-87-9		<1	1	1	2	3	10
METHYLENE CHLORIDE       75-09-2       <1	METHYL PYR		-		872-50-4		2	6	4	- 12	7	24
METHYLENE OXIDE (37%)       50-00-0       >480       >240       >480       >240       >480       >240         METHYLENE OXIDE (37%)       50-00-0       101-77-9       5       15       9       30       18       60         METHYLENEDIANILINE 4,4- (190 C)       101-77-9       5       15       9       30       18       60         METHYLMORPHOLINE (65%)       7529-22-8       113       >240       227       >240       453       >240         METHYL-TERT-BUTYL ETHER       1634-04-4       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1	METHYLENE	CHLORIDE			75-09-2		<1	1	1	2		4
METHYLENEDIANILINE 4,4- (190 C)       101-77-9       5       15       9       30       18       60         METHYLMORPHOLINE (65%)       7529-22-8       113       >240       227       >240       453       >240         METHYLTERT-BUTYL ETHER       1634-04-4       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1	METHYLENE	OXIDE (37%)	)		50-00-0		>480	>240	>480	>240	>480	>240
METHYLMORPHOLINE (65%)       7529-22-8       113       >240       227       >240       453       >240         METHYL-TERT-BUTYL ETHER       1634-04-4       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1 <th>METHYLENE</th> <th>DIANILINE 4</th> <th>4- (190 C)</th> <th></th> <th>101-77-9</th> <th></th> <th>5</th> <th>15</th> <th>9</th> <th>-30</th> <th>_18</th> <th>60</th>	METHYLENE	DIANILINE 4	4- (190 C)		101-77-9		5	15	9	-30	_18	60
METHYL-TERT-BUTYL ETHER     1634-04-4     <1	METHYLMOR	RPHOLINE (6)	5%)		7529-22-8		113	>240	227	>240	453	>240
METRICIDE (50%)       111-30-8       30       100       60       200       120       >240         MIBK       108-10-1       1       4       2       7       5       15         MICROCUT 26       98330-12-9       >120       >240       >240       >240       >480       >240         MINERAL SPIRITS       64475-85-0       >480       >240       >480       >240       >480       >240	METHYL-TER	T-BUTYL ETH	IER		1634-04-4		<1	<1	_<1	_<1	_<1	<1
MIREK       108-10-1       1       4       2       7       5       15         MICROCUT 26       98330-12-9       >120       >240       >240       >240       >480       >240         MINERAL SPIRITS       64475-85-0       >480       >240       >480       >240       >480       >240	METRICIDE	(50%)			111-30-8		30	100	-60	200	120	>240
MICROCUT 26     98330-12-9     >120     >240     >240     >240     >480     >240       MINERAL SPIRITS     64475-85-0     >480     >240     >480     >240     >480     >240	MIRK				108-10-1		1			_7	_5	15
Mineral spirits         64475-85-0         >480         >240         >480         >240         >480         >240           MONORIITY AMINE         109-73-9         1 <th>MICPOCUT</th> <th>26</th> <th></th> <th></th> <th>98770-12-0</th> <th></th> <th>&gt;120</th> <th>&gt;240</th> <th>&gt;240</th> <th>&gt;240</th> <th>&gt;//80</th> <th>&gt;240</th>	MICPOCUT	26			98770-12-0		>120	>240	>240	>240	>//80	>240
MONORIITYI AMINE 109-73-9 21 21 21 21 21 21 21 21	MINEDAL CD				64475-85-0		>480	>240	>/80	>240	>480	>240
	MONOBILTVI				109-73-9		<1	<1	_<1	_<1	_<1	<1



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CHEMICAL AGENT	CAS Number	TTL	INT	TTL	INT	TTL	INT				
MONOCHLOROBENZENE	108-90-7	<1	2	1	4	2	6				
MONOETHANOLAMINE	141-43-5	6	20	12	40	24	80				
MORPHOLINE	110-91-8	<1	<1	<1	<1	<1	<1				
МРК	107-87-9	<1			2	3	10				
МТВЕ	1634-04-4	<1	<1	<1	<1	<1	<1				
MURIATIC ACID (10% HCL) (10%)	7647-01-0	>480	>240	>480	>240	>480	>240				
NAPHTHA	8032-32-4	9	30	18	60	39	130				
NINHYDRIN	485-47-2	>480	>240	>480	>240	>480	>240				
NITRIC ACID (23%)	7697-37-2	>120	>240	>240	>240	>480	>240				
NITRIC ACID (70%)	7697-37-2	2	7	4	13	5	18				
NITRIC/HYDROFLUORIC PICKLING SOLUTION (50%)	97697-37-4	>120	>240	>240	>240	>480	>240				
NITROBENZENE	98-95-3	<1	2	1	3	2	9				
	75-52-5	د1		1	र र	- z	5				
	79-46-9	<1	<1	<1	<1	<1	<1				
	972 50 4	2	6	1	12	7	24				
	872-30-4	1	7	4	12	, F	17				
	90064-17-7	1	3	2	. 240	5	17				
	111-87-5	>480	>240	>480	>240	>480	>240				
	112-80-1	>480	>240	>480	>240	>480	>240				
ORTHO DICHLOROBENZENE	95-50-1	<1	<1	<1	<1	<1	<1				
OXALIC ACID (s)	144-62-7	>480	>240	>480	>240	>480	>240				
OXYBISBENZENE, 1,1- (DOWTHERM) (73%)	101-84-8	<1	<1	<1	<1	<1	<1				
PENTANE	109-66-0	4	13	8	27	21	59				
PENTANONE, 2-	107-87-9	<1			2	3	10				
PENTYL ACETATE	628-63-7	<1	1	1	4	3	11				
PENTYL ALCOHOL	71-41-0	24	37	48	75	72	149				
PERACETIC ACID (39%)	79-21-0	2	7	5	17	13	44				
PERCHLOROETHYLENE	127-18-4	6	20	7	23	9	27				
PETROL	8006-61-9	1	2	2	7	6	20				
PETROLEUM ETHER	8032-32-4	9	30	18	60	39	130				
PHENOL	108-95-2	2	6	4	8	8	10				
PHENYL ALCOHOL	108-95-2	2	6	4	8	8	10				
PHENYL HYDRIDE	71-43-2	<1	<1		2	2	3				
PHENYLETHANE	100-41-4	<1	<1		2	2	4				
PHOSPHORIC ACID (85%)	7664-38-2	>480	>240	>480	>240	>480	>240				
POTASSIUM HYDROXIDE (45%)	1310-58-3	>480	>240	>480	>240	>480	>240				
PROPANEAMIDE (50%)	79-06-1	>120	>240	>240	>240	>480	>240				
PROPANEDIAMINE, N,N'-DIMETHYL	109-55-7	3	10	6	20	15	50				
PROPANOL N-	71-23-8	7	12	10	24	15	48				
PROPANOL, 2-	67-63-0	28	93	43	143	60	200				
PROPANONE, 2-	67-64-1	<1	2	1	4	2	6				
PROPYL ACETATE	109-60-4	1	3	2	7	7	15				
PROPYL ALCOHOL	71-23-8	7	12	_10	24	15	48				
PROPYL CARBINOL	71-36-3	_13	43	_17	57	_24	80				
PROPYL CELLOSOLVE N-	2807-30-9	6	_8	_13	21	_25	_35				
	57-55-6	>480	>240	>480	>240	>480	>240				
	5131-66-8	6	20	8	27	11	36				
			20				00				
showa 7505	showa 7540	showa 7545	showa 7550	showa 7555	showa 6110	showa <b>7570</b>	showa C9905	с 510 510 510	65	SHOWA 7580	SHOWA 7585
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(									)		
CHEMIC	AL AGEN	т		CAS Nur	nber	TTL	INT	TTL	INT	TTL	INT
PROPYLENE	OXIDE			75-56-9		<1	1	1	2	2	7
PSEUDOCUM	IENE			95-63-6		3			22	13	84
P-TERT BUTY	L TOLUENE			98-51-1		11	37	14	47	20	67
PYRIDINE				7291-22-7		<1	1		2		6
ROUNDUP (C	ONCENTRAT	ED)		1071-83-6		>480	>240	>480	>240	>480	>240
SAFROTIN				31218-83-4		>120	>240	>240	>240	>480	>240
SHELL AERO	SHELL GREA	SE 22		56280-00-0	)	>480	>240	>480	>240	>480	>240
SHELL ALVA	NIA GREASE	3		57120-00-0		>480	>240	>480	>240	>480	>240
SHELL DIALA	OIL AX BAS	E OIL		60030-00-0	D C	>480	>240	>480	>240	>480	>240
SHELL FIRE &	& ICE 2000 10	OW OIL		60015-00-0		>480	>240	>480	>240	>480	>240
SHELL HVI 10	00 NEUTRAL	MQ		63050-00-0		>480	>240	>480	>240	>480	>240
SHELL ROTE	LLA T MULTI	15W OIL		71630-00-0		>480	>240	>480	>240	>480	>240
SHELL SPIRA	X S 85W-140	OIL		86404-00-0	D	>480	>240	>480	>240	>480	>240
SHELL TURB	O T 68 HYDR	AULIC FLUID		60220-00-0		>480	>240	>480	>240	>480	>240
SHELLWAX 1	00			8210-00-0		>480	>240	>480	>240	>480	>240
SKYDROL LD	-4 HYDRAUL	IC FLUID		2528-36-1		27	90	54	180	71	237
SODIUM HYD	ROXIDE (50	%)		1310-73-2		>480	>240	>480	>240	>480	>240
STODDARD S	SOLVENT			8052-41-3		126	>240	252	>240	>480	>240
STYRENE				100-42-5		<1	1	1	3		6
SULFURIC A	CID (97%)			7664-93-9		8	27	16	53	25	83
TANNIC ACIE	)			1401-55-4		>480	>240	>480	>240	>480	>240
TETRACHLO	ROETHYLENE			127-18-4		6	20	7	23	9	27
TETRACHLO	ROMETHANE			56-23-5			2	2	6		24
TETRAHYDR	OFURAN			109-99-9		<1			2	2	7
THF				109-99-9		<1			2	2	7
TOLUENE				108-88-3		<1			2	2	5
TOLUENE/M	EK MIXTURE	(65:3 RATIO)	(65%)	90108-88-5			3	2	7		23
TOLUIDINE,C	)-			95-53-4			3	2	7	4	14
TOLUOL				108-88-3		<1			2	2	5
TRIBROMOM	IETHANE			75-25-2		<1	<1		2	3	11
TRICHLORO	BENZENE 1,2,	4-		120-82-1		<1	<1		3	4	14
TRICHLORO	ETHANE 1,1,1-			71-55-6		<1	<1		3	2	8
TRICHLORO	ETHYLENE			79-01-6		<1	<1		3	3	11
TRICHLORO	FLUOROETH	NE		76-13-1		3	10	6	20	12	40
TRICHLORO	METHANE			67-66-3		<1	<1	<1	<1	<1	<1
TRIETHANOI	LAMINE			102-71-6		9	30	18	60	24	80
TRIETHYLAM	1INE			121-44-8		10	33	20	67	39	130
TRIETHYLEN	E GLYCOL MO	ONOBUTYL E	THER	143-22-6		6	20	8	27		36
TRIMETHYL	BENZENE (98	3%)		95-63-6		3	11	7	22	13	84
TRIMETHYLP	PENTANE, 2,2	,4-		540-84-1		120	>240	240	>240	389	>240
TURCO 5351	MIXTURE			90075-09-4	Ļ 🔤	1	2	2	7	5	17
TURPENTINE	I			8006-64-2		52	173	104	>240	152	>240
VINYL ACET	ATE			108-05-4			2	2	7	5	14
VINYL BENZ	ENE			100-42-5		<1			3		6
VINYL CYAN	IDE			107-13-1		<1	<1	<1		<1	3
VINYL PYRR	OLIDINONE			88-12-0		<1	<1	<1	<1	<1	<1
VINYL STYRE	ENE			1321-74-0		5	17	10	33	20	66
VINYLBUTYF	ROLACTAM			88-12-0		<1	<1	<1	<1	<1	<1
VINYLIDENE	CHORIDE			75-35-4		<1	<1		2		6
XYLENE				1330-20-7			2	3	8	5	11

## **GLOVE SIZE CHART**

IT IS CRUCIAL TO GET THE GLOVE SIZE RIGHT FOR MAXIMUM DEXTERITY. HERE ARE A FEW RECOMMENDATIONS TO HELP YOU IN FINDING THE RIGHT SIZE OF GLOVES YOU NEED.

Glove size	Hand (mr	Glove (mm)		
EN 420	Palm circumference	Length	Minimum length	
6	152	160	220	
7	178	171	230	
8	203	182	240	
9	229	192	250	
10	254	204	260	
11	279	215	270	

#### COLOUR-CODED CUFF

Some styles of SHOWA gloves have a colour-coded cuff. These cuffs enable the size recognition in the factory and the pairing after washing the gloves.

#### **TESTING PRIOR TO USING**

If the glove is too small, it cuts off the blood circulation and restricts the movement of the hand. On the other hand, oversized gloves slip off at the slightest movement and make your handling very imprecise. To be sure of your size and fit, do not hesitate to ask for samples from your SHOWA distributor.

8 9 10

(11

7



Place your right hand on the diagram: the green line should be between your thumb and index finger. The size is indicated on the right.

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#### MATERIALS

#### GENERAL PURPOSE

Nitrile26	
Latex	
PVC	
Polyurethane	

#### IMPACT PROTECTION

#### CUT PROTECTION

Cut level B	54
Cut level C	56
Cut level D	59
Cut level E	62
Cut level F	

#### CHEMICAL PROTECTION

Nitrile	.68
Biodegradable nitrile	.74
Neoprene	.76
PVC	.78
Butyl	.82
Viton	.83

#### INSULATED

Latex	86
PVC	86
Nitrile	88
Polyurethane	88
Neoprene	90
Sponge neoprene	90

#### ANTISTATIC

Antistatic protection94	4
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#### SINGLE USE

Cobalt blue series	100
Biodegradable nitrile	102
Cleanroom	103
Antistatic	103
Chemical resistance guide	104

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234X	59	3416	62, 77
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281 TEMRES <sup>®</sup>	37	6781R	76, 90
282 TEMRES <sup>®</sup>	88	7000	30
305	34	7066	31
306	33	7166	31
310	32	7199NC	31
317	34	7505PF	102
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341	35	7545	100
350R		7550	95, 103
370		7555	100
376R	27	7565	95, 103
377	27	7570	102
377IP	49	7580	101
379	73	7585	101
380		8110	62
381	29	8127	63
382		8814	90
406	89	A0150	94
451		A0160	94
460	86	A0170	94
465		B0500	
477		B0502	
490	87	B0600	
495	87	B0605	
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620	78	DURACoil <sup>®</sup> 546	W 56
640	78	DURACoil <sup>®</sup> 546	X 56
650	79	DURACoil® 346	57
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707FL	68	GP-KV1	58
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# SHOWA INDUSTRIAL SERIES



### **4 WEEK TRIAL PROGRAM**

Free intricate assessment process designed to identify potential cost savings by:



Adopting new technologies

Improving employees safety and satisfaction

Adopting best practices for use and control

The SHOWA 4WTP consists of a strategic plan whereby glove trials can be managed effectively through 4 timed processes. These processes evaluate the performance of SHOWA a glove vs. an existing glove and indicate user preferences and advantages in terms of comfort, dexterity, fit and longevity. After 4 weeks a cost-efficient custom-made plan for your hand protection needs will be presented.

