KCL Products & Services




We take care of your Hands!

version
3.5

KCL-
Products & Services

Contents

Fields of protection

Chemical protective gloves -› page 42

736
Tricotril®

Special protective gloves -› page 74

646
RewoSpec® 646

Heat resistant gloves -› page 93

950
KarboTECT®

Electrical protective gloves -› page 102

584
Electro

Other protective gloves -› page 106

537
Nimm-den

Mechanical protective gloves -› page 58

100
Sahara®

Cut resistant gloves -› page 79

912
PolyTRIX N

Cold resistant gloves -› page 98

691
IceGrip®

Household gloves -› page 105

701
Super

For the assessment of the productive efficiency of our products, please use the pull-out page with explanations regarding the pictograms or the detailed comments on the applicable EN standards from page 20

Special applications

Handling Food

Camatex
Art.-no. 450, 451
natural latex, cotton
p. 68

Examination Glove
Art.-no. 651, 652
natural latex
p. 107

IceGrip
Art.-no. 691
Thinsulate®,
PVC, nylon
p. 100

TeboCold® 693
Art.-no. 693
Thinsulate®,
polyamide, PVC,
polyester
p. 100

Super
Art.-no. 701
natural latex
p. 105

Extra
Art.-no. 702
natural latex
p. 105

Lapren®
Art.-no. 706
natural latex,
chloroprene
p. 48

Cama Clean
Art.-no. 708
natural latex
p. 48

Perfect
Art.-no. 712
natural latex
p. 105

Camatril®
Art.-no. 729
nitrile
p. 50

Camatril® Velours
Art.-no. 730, 732,
733
nitrile
p. 50, p. 51

Tricotril®
Art.-no. 736, 737,
738, 739
nitrile, cotton
p. 42, p. 43, p. 98

Dermatril®
Art.-no. 740, 741,
743
nitrile
p. 52

Ideal
Art.-no. 752
natural latex
p. 105

K-NIT® Glas
Art.-no. 861
para-aramid, nitrile
p. 83

Working in clean rooms

Camapur® Comfort R
Art.-no. 610
polyamide,
polyurethane
p. 78

Dermatril® LR
Art.-no. 742
nitrile
p. 53, S. 78

Protective gloves for sterile workstations

Dermatril® LS
Art.-no. 747
nitrile
p. 53

Special applications

Requirement for antistatic/discharge capacity/ESDS

Sahara®
Art.-no. 100
nitrile, cotton
p. 58

Camapur® Comfort Antistatic
Art.-no. 623, 624, 625
polyamide, polyurethane
p. 76

Dermatril®
Art.-no. 740
nitrile
p. 52

Dermatril®
Art.-no. 741, 743
nitrile
p. 52

PolyNox® ESD N
Art.-no. 925, 926
polyamide, polyester, special steel
p. 77

Gloves for chemical protective clothing

Vitoject®
Art.-no. 890
fluorocarbon rubber
p. 55

Camatril®
Art.-no. 730, 731, 732, 733
nitrile
p. 50, p. 51

Nitopren®
Art.-no 717
nitrile, chloroprene
p. 46

Butoject®
Art.-no 897, 898
butyl
p. 56

Vibration workplaces

WaveBreaker
Art.-no. 633
artificial leather, elastomer, Cordura®, Tyvek®, Outlast®
p. 75

Health and safety regulations adopted in Europe state that skin protection is a fundamental requirement. Using the products and services of KCL, you can make a special contribution to effective hand protection against most hazards commonly found around the workplace.

For more than 75 years we have taken special responsibility in developing safe working gloves for the workplace.

For many decades KCL has been setting active and leading pace of development in this sector. Our management team stands for:
- representation of all employees
- great competence
- years of experience
- extensive know-how
- close customer relations
- continuity

KCL offers solutions to sophisticated problems due to own research and development. We stand for innovations and individual solutions to problems in hand protection.

For example the extremely successful and awarded innovative glove concept is a personal development for the past 12 years. Another key element in our success story has been the loyality and high quality of our distributor network.

In an industrial market place with high demands from our customers for quality, service, research, development and innovation in glove technology, KCL have consciously developed a “made in Germany” culture. We are intensely proud of our culture and the exceptional benefits enjoyed by our customers, as a result of the true pride and enjoyment that all of the KCL team have in our work.

We invite you to participate in this culture!

We take care of your hands.

Guaranteed! Qualified!

This central guideline of our corporate culture is the aim of all of our activities.

The KCL consulting culture

"We analyse individual protection problems and give advice to our customers on site."

In the beginning there is always a problem. KCL very often face the individual demands of an enormous range of industries. With our expert advisers we can carry out a risk-hazard-analysis for our customers on site.

In close co-operation with the companies' Safety Managers, KCL and our advisers will develop company specific solutions and concepts for all applications. The glove user with his/her special demands is always the key focus of our efforts. Only in this way can maximum protection be achieved and accepted when introduced on site.
Our customers are involved in all phases of the concept development process.

"Customer's demands and problems...

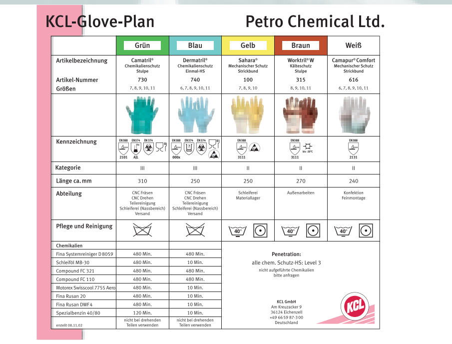
as well as tests and evaluations in our own laboratory...

along with glove trials result in customer's feedback...

Our support services and consulting work may even offer immediate economic advantages to our customers. Quicker solutions to problems, excellent selection systems and quality products from the initiation to the introduction on site have a direct influence in the customer's costs. Getting hand protection wrong can be an expensive mistake.

Consulting: qualified and certified!

and define the KCL-Glove Plan,...



KCL-Glove-Plan — Petro Chemical Ltd.

	Grün	Blau	Gelb	Braun	Weiß
Artikelbezeichnung	Camatril® Chemikalienschutz Stulpe	Dermatril® Chemikalienschutz Einmal-HS	Sahara® Mechanischer Schutz Strickbund	Worktril® W Kälteschutz Stulpe	Camapur® Comfort Mechanischer Schutz Strickbund
Artikel-Nummer	730	740	100	315	616
Größen	7, 8, 9, 10, 11	6, 7, 8, 9, 10, 11	7, 8, 9, 10	8, 9, 10, 11	6, 7, 8, 9, 10, 11
Kennzeichnung	EN388 2101, EN374 AJL, EN374	EN388 000x, EN374, EN374	EN388 3111	EN388 3111, bis -20°C	EN388 2131
Kategorie	III	III	II	II	II
Länge ca. mm	310	250	250	270	240
Abteilung	CNC Fräsen CNC Drehen Teilereinigung Schleiferei (Nassbereich) Versand	CNC Fräsen CNC Drehen Teilereinigung Schleiferei (Nassbereich) Versand	Schleiferei Materiallager	Außenarbeiten	Konfektion Feinmontage
Pflege und Reinigung			40°	40°	40°
Chemikalien					
Fina Systemreiniger D 8059	480 Min.	480 Min.	Penetration: alle chem. Schutz-HS: Level 3 nicht aufgeführte Chemikalien bitte anfragen		
Schleiföl MB-30	480 Min.	10 Min.			
Compound FC 321	480 Min.	480 Min.			
Compound FC 110	480 Min.	480 Min.			
Motorex Swisscool 7755 Aero	480 Min.	10 Min.			
Fina Rusan 20	480 Min.	10 Min.			
Fina Rusan DWF 4	480 Min.	10 Min.			
Spezialbenzin 40/80	120 Min.	10 Min.			
erstellt 08.11.02	nicht bei drehenden Teilen verwenden	nicht bei drehenden Teilen verwenden			

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that leads to optimum hand protection."

The KCL safety Culture

"We plan your safety in detail and always guarantee our service proposals."

Scientific studies examining the frequency of work-related injuries show just how important hand protection is. According to these studies up to 50 % of all accidents at work involve a hand injury. Many of these injuries could have been avoided with an adequate hand protection system such as the KCL concept. Our ChemPro® database forms the basis of this system and includes permeation data on over 200,000 hazardous chemicals and our recommendations.

"With hand protection concepts for customers throughout Europe...

and tools, such as ChemPRO®,...

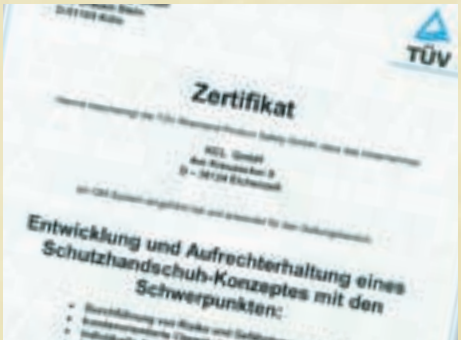
our chemical manager...

With our own high KCL quality standards, we exceed the required standards in many cases by some distance. This contributes significantly to a reduction in hand injuries. Naturally, we are regularly audited and certified within the scope of the quality management system according to DIN EN ISO 9001 as well as other external quality inspections.

we care for your safety with our guarantee consent."

or the comprehensive preventive management system PMS...

Qualified and certified by the Technical Inspection Authority!



The KCL innovation culture

"The close proximity of our customers to our in-house research and development sets the standards for future glove technology."

KCL continues to prove its innovative excellence with expert testing and analytical work, backed by continuous research and development in the brand new lab facility in Eichenzell. We welcome the most demanding of challenges to further test our skills and knowledge of the world glove markets to create new and exciting solutions to modern industrial problems.

The data recorded during our extensive research and development programmes at KCL forms the basis of new glove innovations and we continue to push the boundaries of glove technology. Our new 600 m^2 laboratory facility further illustrates our commitment to the cause and our collaborations with other like-minded organisations and scientific projects and studies

"Our qualified employees of research + development and lab...

research,...

develop,...

demonstrates the unrivalled ambition of our company. Continuous improvement, new product innovation, excellence in our products and services and the proximity of our work with our customers is what we stand for at KCL. Experience it for yourself and join the many new customers who are trying KCL for the first time. You may be pleasantly suprised!

for the production of innovative gloves."

and analyse...

test,...

The KCL manufacturing culture

"We produce our gloves with special manufacturing methods, which fulfil the most demanding requirements."

For KCL, the manufacturing culture plays a very important role in the continued success of the company. One key factor is that of the close proximity of the research and development and sales support systems to our production plant in Germany, where the majority of the KCL range is still manufactured.

This creates synergies and close channels of communication between the entire team in Eichenzell, ensuring that all departments take equal and joint ownership of the responsibilities to manufacture excellent quality products at all times.

"Our high-quality protective gloves are produced in a dipping process,...

by an injection moulding process...

or as knitted gloves with the latest fibres and...

The close relationships with our customers ensures that we are constantly striving to meet new levels of safety for the glove user. This will always remain a central pillar of our manufacturing culture.

under continuous control ensuring highest possible quality!”

A MATTER OF COURSE AT KCL:
CUSTOMER’S AUDIT IN THE PRODUCTION AREA

Qualified and certified!

The KCL communication culture

"The KCL Academy provides unrivalled training and education programs to our customers."

Many safety managers have trouble finding organisations who can provide practical and technical hand protection training for their workforce. The KCL Academy and our highly trained advisors can offer this service, both on site and at our headquarters in Germany.

Attendees will be offered excellent practical and technical training relevant to all areas of hand protection and tailored to meet individual customer needs. Training is carried out by KCL's very own team of experts, all of whom have years of knowledge and experience in the Industrial market-place.

"Trainings in our KCL academy,...

KCL regularly publishes information relating to new standards, technologies, products, as well as interesting news about the company and the glove industry in general on the internet. Our multilingual communication culture ensures that our customers are among the most informed in Europe. Be a part of it and sign up today....www.kcl.de

specific customer advisory service on site,...

multilingual technical information on the internet and newsletter...

as well as leaflets are essential components of our communication culture."

We are there for you – advice and service

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European standards

General requirements

All protective gloves have to meet EN 420 – General requirements for gloves. The only exceptions are insulating protective gloves for working with electricity and disposable gloves (medical disposable gloves). The EN 420 regulates the minimum requirements for a glove. Instructions for use must be enclosed with every glove and must contain information about storage and transport, cleaning, handling and disposal. This basic norm fixes the recommended values for chrome VI (max. 10 mg/kg) and the pH-value (between 3.5 and 9.5). Furthermore, EN 420 intends a dexterity test (min. 0, max. 5) for the protective glove.

Categories

In order to fulfil many different kinds of requirements in the commercial sector, protective gloves are separated into 3 categories:

category I	**minimum risks** less demands on protection
category II	**medium risks** protection required, e.g. against mechanical risks
category III	**high risks** protection against irreversible injuries and mortal danger, e.g. damage by chemicals

This classification is followed by the assigned special norm including the corresponding glove marking and documentation. Generally, protective gloves for the commercial sector are at least assigned to category II.

Among other things, even authorisation instructions and documentation of the products are behind the category. In the PPE manufacturer's guideline 89/686/EWG, the basic requirements and classification into categories is settled.

category		**requirement**
category I		declaration of conformity
category II		declaration of conformity + single test certificate of the model type
category III	art. A	declaration of conformity + single test certificate of the model type
	art. B	declaration of conformity annual test certificate of the model type + ISO 9000 following

The glove manufacturer must provide the required documentation upon request.

KCL with its quality philosophy fulfils the highest customer's demands because KCL takes the more difficult way. This means, that the products are authorised by a test certificate of the model type. There is an annual audit of the quality system according to article 11B of the manufacturers' guideline, which is carried out by the trade association institute for safety at work (BGIA).

Standard survey

Operating manual, instructions for use (please see information leaflet)

All protective gloves are marked with CE and must fulfill EN 420

Protective gloves for mechanical risks

Protective gloves against chemical risks FULL PROTECTION

Protective gloves against chemical risks SIMPLE PROTECTION

Protective gloves against bacteriological risks

Protective gloves against risks due to cold

Protective gloves against ionizing radiation

Protective gloves against radioactive contamination

Protective gloves for thermal risks

Insulating protective gloves for working with electricity

Protection against static electricity

Protective gloves for working with hand knives

Protective gloves for users of hand-guided chain-saws

electrostatics

EN 60903 IEC 61482-1 Protective garment agains electric arcs

Sterilisation of products

Clean rooms

Protective gloves free from silicone

Protective gloves for firemen

EN 12477 Protective gloves for welders

EN 10819 Protective gloves against vibration

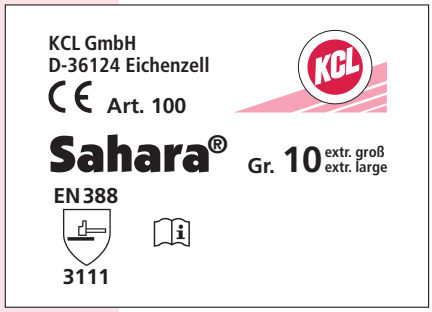
EN 455 Medical disposable gloves

European standards

Marking of gloves

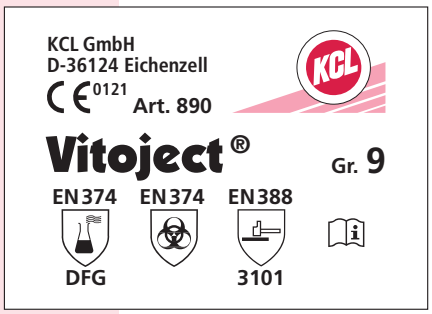
Category I

CE-sign
item no.
size
article
address of the manufacturer



Category II

CE-sign
item no.
size
article
address of the manufacturer
pictograms with levels



Category III

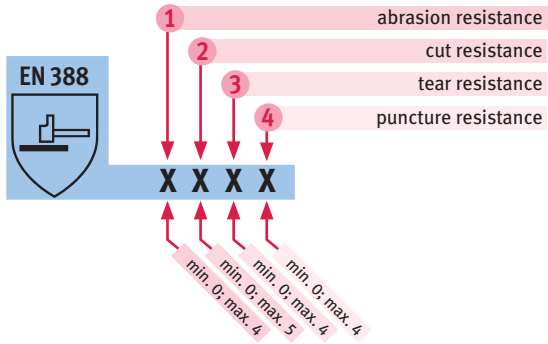
CE-sign
item no.
size
article
address of the manufacturer
pictograms with levels
identification number of the testing authority

EN 388 – Protective gloves for mechanical risks

From category II, the performance levels with the corresponding pictogram must be shown

- on the protective glove
- on the instruction manual
- on the packaging

Only if these preconditions are fulfilled can you be sure to have a glove according to category II or a higher category. The sequence of the performance levels must be kept and the digits must be shown beside the special norm's pictogram.



Test	Level 1	Level 2	Level 3	Level 4	Level 5
abrasion resistance (cycles)	100	500	2.000	8.000	
cut resistance (index)	1,2	2,5	5,0	10,0	20,0
tear resistance (Newton)	10	25	50	75	
puncture resistance (Newton)	20	60	100	150	

Level X means that this test cannot be carried out on this particular glove.

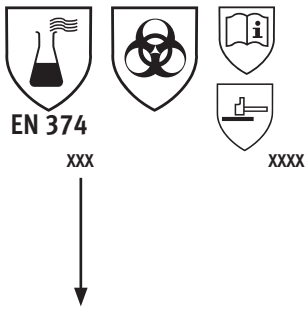
European standards

EN 374 – Protective gloves for chemical and bacteriological risks

Since 2004, the revised version of the EN 374 is valid. According to this version, chemical protective gloves are classified as simple or full chemical protective gloves. A list of 12 test chemicals is also new. A full chemical protective glove must reach a permeation level of 2 for at least 3 of the test chemicals. Consequently, due to their composition many protective gloves can no longer be regarded as full chemical protective gloves. The thickness of 0.1 mm of nitrile disposable gloves is also no longer sufficient.

KCL reacted early and developed for example the Dermatril® P with a thickness of 0.2 mm. This glove shows the required resistance and is regarded as a full chemical protective glove in the disposable glove range.

Full chemical protection



Simple chemical protection

The pictograms for simple chemical protection are shown on gloves that are waterproof and offer a slight protection against chemical risks.

code letter	test chemical	CAS no.	class
A	methanol	67-56-1	primary alcohol
B	acetone	67-64-1	ketone
C	acetonitrile	75-05-8	nitrile
D	dichlormethane	75-09-2	chlorinated paraffin
E	carbon disulphide	75-15-0	sulphurous organic compound
F	toluene	108-88-3	aromatic hydrocarbon
G	diethyl amine	109-89-7	amine
H	tetrahydrofuran	109-99-9	heterocyclic and ether compounds
I	ethyl acetate	141-78-6	ester
J	n-heptane	142-82-5	aliphatic hydrocarbon
K	caustic soda 40 %	1310-73-2	inorganic base
L	sulphuric acid 96 %	7664-93-9	inorganic acid

A chemical protective glove offers protection against bacteria and moulds if the protective glove reaches at least a penetration level of 2.

A chemical protective glove which is declared as simple chemical protection, definitely protects against defined hazardous substances. For this, a clear manufacturer's resistance statement for contact with a hazardous substance is necessary for this protective glove.

Definition of terms to EN 374

Permeation

Permeation is the invisible microscopic diffusion of a chemical substance through the protective glove. A protective glove can be permeated on molecular base within seconds.

Level 1 ≥ 10 min.
Level 2 ≥ 30 min.
Level 3 ≥ 60 min.
Level 4 ≥ 120 min.
Level 5 ≥ 240 min.
Level 6 ≥ 480 min.

Attention: Permeation can begin with the first chemical contact.

The test according to the norm is not sufficient to determine the exact wearing time of a chemical protective glove. Factors such as temperature and stretching have a great influence in the resistance period. Therefore KCL recommends a deduction of 25 % for safety reasons.

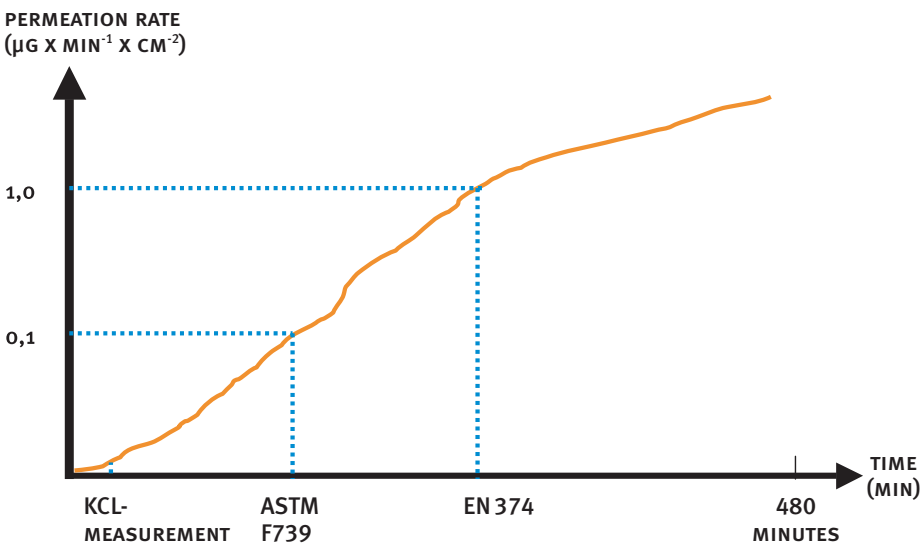
KCL developed the KCL-Permacel process for a wearing time of more than 480 minutes. Here protective gloves are tested in permanent use for up to 90 days in order to receive reliable information.

1 minute

120 minutes

With this test method KCL even goes one step further. While the norm EN 374 accepts a tolerance and allows a permeation of 1,0 µg per min^{-1} and cm^{-2}, KCL already stops the test upon breakthrough of the first molecule.
This is a clear safety advantage for the glove user.

Permeation rate/breakthrough time

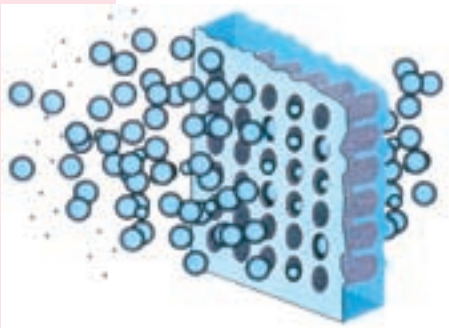


European standards

Penetration

Penetration is the macroscopic permeation of a protective glove. This means the chemical protective glove has a leak or a hole.

Level	AQL	Example
1	4,0	‹ 4,0 faults per 100 units
2	1,5	‹ 1,5 faults per 100 units
3	0,65	‹ 0,65 faults per 100 units



The test is carried out according to ISO 2859-1:1989, which demands spot checks for the test of one production line regarding the acceptable quality level (AQL).

KCL carries out the penetration tests air tightness and water resistance according to EN 374. These tests are laid down necessarily for chemical protective gloves. While chemical protective gloves with cotton liner pass the air tightness test, the water resistance test often show that they are not tight. Therefore KCL developed Tricotril® and Tricopren® years ago. The concerned articles are chemical protective gloves with a liner, which is 100 % tight due to the production process.

Swelling

Swelling can take place independent of permeation and penetration. As a swollen protective glove is unusable, only protective gloves with low swelling should be used. Swelling depends on the respective chemical the protective glove had contact with.

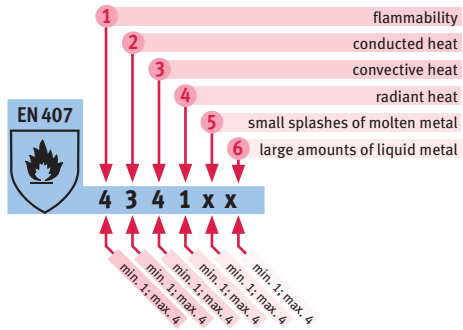
KCL is aware of its role as leader in the market and took up swelling a measurement method in the customers' interest, although it is not demanded by the norm EN 374, and recommends protective gloves with a swelling of less than 15 %, only.

sample before chemical contact

swelling after 8 hours

swelling	assessment
‹ 7 %	resistant
‹ 15 %	partially resistant
≥ 15 %	non resistant

EN 407 – Protective gloves for thermal risks



This standard defines the thermal properties of protective gloves for protection against heat and/or flames. At the same time, a minimum level 1 is prescribed for abrasion and tear resistance according to EN 388 for protective gloves against thermal risks.

Protective gloves in accordance with EN 407 should be flame resistant. The protective glove material should transmit the heat only slowly in order to guarantee a protection effect against radiant, convective and conducted heat. Furthermore, it must offer a high temperature resistance (no melting, shrinking or degradation at thermal load.) EN 407 is not valid for specific uses of protective gloves (e.g., fire fighting or welding).

EN 407 informs about the performance of the protective glove during the influence of heat or flames by six level descriptions:

A Flammability

This level informs about the period the material keeps on burning or glowing after the removal of the flame from the test specimen. The seams of the protective glove must not dissolve after a burning period of 15 seconds.

B Conducted heat

The most used level in this norm is the conducted heat. This means the marginal value period in seconds (100, 250, 350 and 500°C), whereas the increase must not be more than 10°C in 15 seconds.

Level	conducted heat	marginal value period
1	100 °C	≥ 15
2	250 °C	≥ 15
3	350 °C	≥ 15
4	500 °C	≥ 15

As, in practice, often neither the contact period nor the exact material temperature is known, a higher level of conducted heat should always be chosen. Thermal sensation is very individual; therefore the gloves must always be tested in a trial with the users.

C Convective heat

The level informs about the period a protective glove can delay the heat transmission of a flame. A performance level is only shown if level 3 or 4 for flammability is achieved.

D Radiant heat

This level only describes the period a protective glove can delay the heat transmission of a radiant heat source. A performance level is only shown if level 3 or 4 for flammability is achieved.

E Resistance against small splashes of liquid metal

The level informs about the number of splashes of liquid metal, which are required to heat the inner side of the protective glove by 40°C. A performance level is only shown if level 3 or 4 for flammability is achieved.

F Resistance against large amounts of liquid metal

This level informs about the amount of liquid metal, which would be necessary to breach a PVC foil (which is intended to simulate the human skin) that is clamped behind the protective glove specimen. This test is carried out with molten iron, however, it has to be carried out with another metal if required. A performance level is only shown if level 3 or 4 for flammability is achieved.

EN 1149 – Antistatic properties

At European level (CEN TC 162/WG1/PG2: Electrostatic properties of protective clothing) currently a new concept development of the norm serial EN 1149 is worked on. It is planned that EN 1149 should consist of 5 norm parts in the future. The first 4 parts will exclusively be test norms without requirement parameter. Part 5 will include all requirement and structuring parameter as well as the corresponding evaluation. Therefore, the following future composition results:

Norm	Definition	Requirement
EN 1149 – 1	Surface resistance	(materials that are not surface conductive)
EN 1149 – 2	Contact resistance	
EN 1149 – 3	Discharge	(all materials that are not surface conductive)
EN 1149 – 4	Garment test	(no concept is available yet)
EN 1149 – 5	Testing parameter, evaluation, structuring, definitions, application	

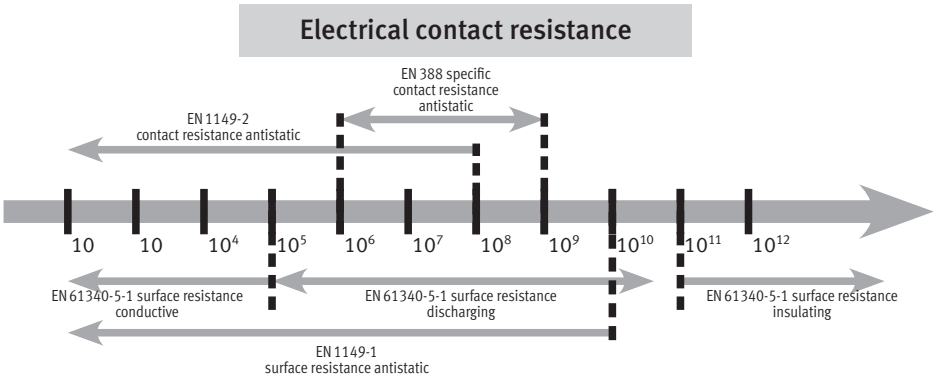
Electrostatic conductive material must fulfil at least one of the following requirements:

t_{50} ‹ 4s or S › 0,2 tested according to EN 1149-3, test method 2
(electrostatic induction charge)
(this also includes the simultaneous compliance of both parameters)
(t_{50} half-life of discharge, S protection factor)

or

a surface resistance on at least one surface of less or equal 2,5 x 109 Ω, tested according to EN 1149-1 .

Regarding material with conductive fibres in a stripe or fence pattern, the distance between the conductive fibres in one direction must not be more than 10 mm.



EN 1149 is a garment norm and was not conceived especially for gloves. Therefore, before antistatic gloves are used the working conditions are to be described concretely and must be compared with the performance of antistatic protective gloves.

EN 61340 – Discharge capacity (electrostatic discharges)

EN 61340-5-1:2001 serves as basis for this sector. It confirms the basic requirements for materials which come in contact with or damage component parts that are sensitive to electrostatic discharges (ESDS). These requirements include protective clothing and with that also protective gloves. It describes test methods and shows values according to which a material is harmless regarding ESD.

Requirements for ESD protective elements regarding gloves:

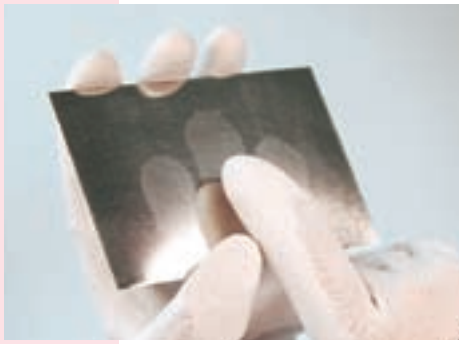
1. Discharge test by measurement of the voltage of a charged condensor cake over the worn glove of the earthed tester.

   From U_o = 1000 V to $U_{(t)}$ = 100 V in T <= 2 seconds

2. System requirements: worn gloves

   Resistance to a grounding point R_g 7,5 x 10^5 <= R_g <= 1 x 10^{12}

The limit values are standard limit values, higher demands for the processing of very sensitive components may require other limit values.



Lacquer compatibility

Glove surface free from silicone tested according to automotive test method

Coated surfaces of our customers' products should show a definite surface structure after the drying process. They must not show any contaminations, as otherwise this will lead to defective goods. As employees need to wear protective gloves during e.g. the painting process, it is important that these gloves do not release any substances that disturb the lacquer wetting.

Many KCL protective gloves fulfil the requirements of the lacquer compatibility. Within the quality assurance extensive test methods were developed in order to test the surface compatibility especially to metals and glass under the influence of chemicals and temperatures.

During the production process of latex mixtures, foam is developed. Foam (= bubbles in the latex mixture) must be regarded as critical during the manufacturing process of gloves. Especially very small bubbles (micro foam) in the latex compound can lead to inhomogeneities in the thickness setup and to leaks in the finished glove.

In order to prevent this, every glove manufacturer uses defoamers. Especially defoamers with a so-called "silicone top" are very effective regarding the dangerous micro foam. Defoamers destroy the foam by stretching the bubble barriers to the bursting point (= physical process). However, defoamers are chemically inert and insoluble. Therefore they cannot react with the gloves or impact the gloves in a distracting way. As they are closely bound in the polymer matrix of the glove at the end of the manufacturing process, they cannot even exude and disturb the lacquer films during the painting process. The used concentrations are very low.

Although silicone exists physically in the glove, it cannot have an effect on lacquer coatings chemically. Test readings of an independent institute confirm this. Thanks to the KCL automotive test method, which builds on the extremely high demands from the automotive industry, we can guarantee that every KCL glove which is authorised accordingly can be used in such areas without any problem. We face our ambitious customers' demands and meanwhile produce both Camatril versions art. 730 and 732 even absolutely free from silicone.

Food handling and processing

When protective gloves are used in the food handling and processing sector, special regulations have to be observed. On the European level, 1935/2004/EWG is valid. This guideline settles fundamental product requirements and is also valid for PPE. In Germany these instructions were translated by the food and objects of use law (in future food and feeding stuff statute book). Protective gloves have to pass an additional test and must not release any components into the food.

If the protective glove fulfils the requirements, a corresponding pictogram is fixed on the packaging. Either the pictogram according to 1935/2004/EWG or a national one (the RAL sign, for example) can be used.

Special note: According to the guideline, it is sufficient that the protective glove supplier can provide a supplier confirmation. KCL has its protective gloves tested for food compatibility by an independent and certified institute with a real test on the product. They test, whether glove components are released under the influence of oils, alcohols or aqueous substances.

European pictogram

national pictogram (example)

EN 10819 – Anti-vibration gloves

Hand and Arm Vibration Syndrome is caused by the emitted vibrations of hand held or hand operated machines or devices.

The human body is more sensitive to frequencies between 2 and 200 Hz than to higher frequencies.

Expressed in percent, the highest vibration values of hand-held vibration-emitting machines are under 200 Hz (= 12,000 twirl * min-1).

KCL has developed the anti-vibration glove WaveBreaker® in such a way that it reduces the low and most harmful vibrations.

This goes at the expense of vibration reduction at the high frequencies above 200 Hz, for which the standard EN 10819 demands a reduction of minimum 40 %.

Therefore, KCL consciously abstained from achieving EN 10819 for this product. In this case, the actual safety of the glove wearer is more important to KCL than the compliance with the norm, which did not prove to be practical.

European standards

EN 60903 – Insulating protective gloves

EN 60903 includes all requirements for an effective protection against electric current and does not refer to other glove standards, such as EN 420 (general requirements), EN 388 (mechanical risks) or EN 374 (chemical risks).

class	working voltage	test voltage
00	≤ 500 V	2.500 V
0	≤ 1.000 V	5.000 V
1	≤ 7.500 V	10.000 V
2	≤ 17.000 V	20.000 V
3	≤ 26.500 V	30.000 V
4	≤ 36.000 V	40.000 V

category optional	additional requirement
A	acid resistance
H	oil resistance
Z	ozone resistance
M	resistance against high mechanical strain
R	resistance against acid, oil, ozone and high mechanical strain
C	resistance against extreme cold

Insulating protective gloves require a repeated inspection. Protective gloves should be re-examined if the last electrical test is dated back more than 6 months ago.

classes 00 and 0	examination for air holes and visual inspection sufficient
classes 1 to 4	examination for air holes, visual inspection and electrical test required

Protective gloves need single packaging. The packaging must be robust enough to protect the glove against damage and sunlight. Furthermore, the marking of the protective glove must be shown on the packaging.

Protection against dangerous electric arcs

Occupational accidents caused by electric arcs are rather rare, however they often end tragically. Heaviest burns or death caused by the extreme heat and explosively pressure waves are the result in most of the cases.

The resulting fireball (flames, radiated heat, hot metal splashes, pressure wave) appears very shortly – scale 0.5 to 1 sec – however, it is very energetic depending on the short-circuit power. The flame core temperatures reach up to 50.000 °C.

Norms/Current stand December 2007

DIN IEC 61482-1-1 draft June 2006
Protective garment against thermal risks of electric arcs.
Part 1: Test method – method 1: Determination of the electric arc characteristic values (ATPV or E BT) of flameproof garment fabrics

Test characterisitc values

Test category	test current kA	test voltage V AC	electric arc duration ms
Class 1	4 ± 5%	400 ± 5%	500 ± 5%
Class 2	7 ± 5%	400 ± 5%	500 ± 5%

The distance between the electrodes must be 30 ± 1 mm, the distance between the center line of the electric arc and the surface of the test specimen 300 ± 5 mm.

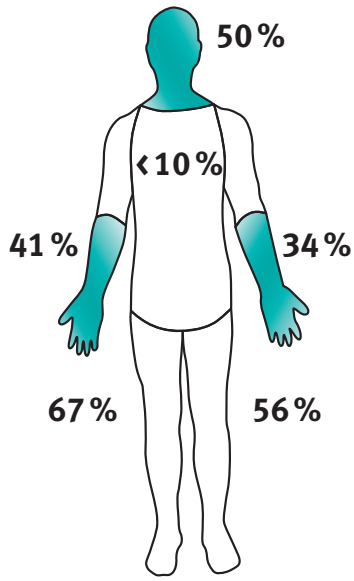
DIN IEC 61482-1-2 draft December 2007
Method 2: Determination of the electric arc protective category of the material and the garment using a forced and directed electric arc (test chamber method, box)

Tests of KCL Insulating gloves

KCL insulating gloves were certified by IPH, Berlin and STFI, Chemnitz according to the above mentioned tests. The gloves of class 00, 0, 1, 2 and 3 passed the test. KCL carries out these tests beyond the norm with a distance of only 150 mm. The KCL Electro gloves 585, 586 and 587 even passed this tightened test successfully.

As a matter of course, KCL Electro gloves fulfil the requirements according to EN 60903 (norm for gloves for working with electricity). Therewith, the electrician can revert to a glove and is protected against voltage as well as electric arcs at the same time.

KCL Electro gloves are also available in a lined version almost without losing sensitivity. The wearing comfort is increased, as the cotton liner absorbs the sweat and allows an easy donning of the gloves.



Hands and face are the most endangered bodily parts

Bodily injury frequency
based on the information of professional associations and power suppliers

European standards

REACH

REACH means Registration, Evaluation, Authorization and Restriction of Chemicals. It is an EU Chemical Regulation, which came into effect on 1st of June 2007. As an EU Regulation **REACH is valid in all Member States**.

The former chemical law is harmonized and simplified by **REACH**.

Within the field of application, only chemical substances are allowed to be put in circulation, which were registered before. Each manufacturer or importer intending to put his substances in the EU in circulation, must have an own registration number for these substances. The target is to implement a new chemical policy in the EU states.

Basically, each manufacturer/importer must provide an updated Material Safety Data Sheet for hazardous substances. It must contain specifics for use and storage and must inform the user, which personal protective equipment offers appropriate protection and for how long.

So far, workers in different industries have very often been exposed to preventable risks. Another **REACH feature is the enlargement of communication within the supply chain**. Following users receive additional duties and responsibilites. They must provide their manufacturer or importer detailed information on the exact use, so that the manufacturer can recommend suitable risk minimization measures for the respective application.

The user is obliged to execute these risk minimization measures. This refers to e.g. personal protective equipment and therefore also to the field of hand protection. A definitive indication of a glove type is possible and also makes sense for the protection of the user. This means that Material Safety Data Sheets according to the **REACH regulation contain all required information for the user which are necessary for a safe contact. REACH provides a better protection for users and end users**.

KCL offers the service of testing the chemical resistance of KCL protective gloves according to EN 347 in contact with the respective chemical and prepares glove recommendations. This applies for mixtures, in particular .

The manufacturer uses these information in the Material Safety Data Sheet. Therefore, the end user benefits from receiving a tested protective glove for handling a hazardous substance at a single glance in the Material Safety Data Sheet. This increases safety in the respective enterprise.

This service is free of charge for KCL customers

EEC Guideline 89/391/EEC

EEC Guideline 89/391/EEC is a regulation, which applies to all EU states. It is concerned with the implementation of measures for improvement of safety and health of employees at work. This regulation commits the employer to guarantee safety of the employees at the respective workplaces. The employer must provide measures and means, which comply with the current technology.

According to **article 6 (1)**, the employer is obliged to assess hazards for the employees' safety and health „amongst other things regarding the choice of work equipment, chemical substances or mixtures and regarding the arrangement of workstations".

In **article 7**, the regulation instructs the employer, to assign this job to external professionals, should he/she not be able to do it.

Article 9 demands the definition and documentation of protection measures to be undertaken and the corresponding protection means (latest personal protective equipment). The employer is also obliged to identify hazardous situation with the help of a risk-hazard-analysis on site and to minimize these hazards by personal protective equipment. The employee must always have access to the results (documentation) of this analysis. Therefore it is reasonable for the employer to post up glove plans and other supporting measures. In return, the employee is obliged to use the hazard minimization opportunities that were offered in a training and to wear the suitable protective equipment. **REACH** and the **EEC Guideline 89/391/EEC** demand a modern documentation and implementation of occupational health and safety measures of all EU companies.

KCL is glad to assist you in fulfilling these requirements in the field of hand protection:

- KCL prepares a risk-hazard-analysis in collaboration with the occupational health and safety.
- KCL accompanies the occupational health and safety on site during the glove trials.
- KCL carries out tests in its laboratory and provides the database ChemPRO® with more than 200.000 tested substances.
- KCL provides a complete and detailed documentation.
- KCL prepares a glove plan for the occupational health and safety as well as a general operating instruction for the use of gloves on site.
- KCL carries out a training of the employees in collaboration with the occupational health and safety. Moreover, measures for more motivation to wear gloves are worked out.

All these services are free of charge within a KCL Protective Glove Concept.

Chemical Resistance List

Resistance to Degradation							Substance		Permeation Time/Level											
									natural latex			chloroprene		nitrile/ chloroprene	nitrile			Fluoro-carbon rubber	butyl	
NR	CR	NBR CR	NBR	FKM	IIR	NBR thermoplastic	chemical	physical state	NR	NR	NR	CR	CR	NBR CR	NBR	NBR	NBR	FKM	IIR	IIR
									395 403 465	706	708	720 722 726	723 725	717	730, 732 733, 736 737, 836	740 741, 742 747	743	890	897	898
-	+	0	+	+	-	0	1,1,2-Trichlorotrifluororethane	liquid	1	0	0	5	5	4	6	1	1	6	1	2
-	-	-	-	-	-	-	1,2-Epoxy ethane (ethylene oxide)	liquid	0	0	0	0	0	0	0	0	0	0	1	2
-	-	-	-	-	-	-	1,2-Epoxy propane (propylene oxide)	liquid	B	A	A	A	A	A	A	0	0	B	1	2
+	+	+	+	+	+	+	1,2-Propandiol	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	0	0	0	+	/	1-Methoxy-2-propanol	liquid	4	2	2	2	2	3	4	B	1	4	6	6
-	-	0	0	0	+	/	1-Methoxy-2-propyl acetate	liquid	3	1	1	1	1	3	3	A	B	3	6	6
-	0	0	-	0	+	0	1-Methyl-2-pyrrolidone	liquid	5	2	2	3	3	3	2	A	B	3	6	6
-	-	+	+	+	0	/	2-Ethylhexyl acrylate	liquid	2	1	1	1	1	5	6	1	1	6	2	3
-	0	0	0	+	+	/	2-Mercaptoethanol	liquid	3	2	2	4	4	4	4	1	1	6	6	6
-	-	0	0	0	-	/	2-Methoxy-2-methylpropane	liquid	1	B	B	B	B	3	4	A	1	3	2	2
-	-	-	-	-	0	/	3-Hexanone	liquid	1	0	0	1	1	0	0	0	0	0	3	3
-	-	-	-	-	0	/	4-Heptanone	liquid	1	A	A	1	1	1	A	0	0	B	3	3
+	+	+	+	+	+	+	Accu acid (sulphuric acid, 25%)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	-	+	-	Acetaldehyde	liquid	1	1	1	1	1	0	0	0	0	0	6	6
0	0	0	-	-	+	/	Acetic acid anhydride	liquid	6	3	3	3	3	3	2	0	0	2	6	6
+	+	+	+	+	+	+	Acetic acid, 10%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
0	+	+	+	+	+	+	Acetic acid, 50%	liquid	5	4	4	6	6	6	6	2	4	6	6	6
-	-	-	-	0	+	+	Acetic acid, concentrated	liquid	3	2	1	2	2	2	2	A	B	3	6	6
-	-	-	-	-	+	-	Acetone p.a.	liquid	2	1	1	1	1	0	B	A	A	B	6	6
-	-	-	-	-	+	-	Acetonitrile	liquid	2	1	1	1	1	3	B	A	A	1	6	6
-	-	-	-	-	+	/	ACETYL ACETONE	liquid	1	0	0	1	1	1	1	0	0	1	4	5
-	-	-	-	0	0	/	Acetyl chloride	liquid	2	0	0	1	1	1	1	0	0	3	3	4
-	0	0	0	+	+	/	Acrylic acid (ultrapure)	liquid	3	2	2	3	3	4	4	1	2	6	6	6
-	-	-	-	-	+	-	ACRYLONITRILE	liquid	1	1	1	2	2	2	1	0	B	1	6	6
-	-	-	0	+	0	/	Alexit structured paint Z 421	liquid	2	1	1	1	1	2	3	A	1	6	3	3
-	-	-	-	0	0	/	Alexit thinner 62	liquid	1	0	0	0	0	1	2	A	A	3	3	3
+	+	+	+	+	+	+	AMIDOSULPHONIC ACID	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	0	+	+	+	0	Ammonia (ammonium hydroxide), 25%	liquid	2	1	1	3	3	4	5	1	3	6	6	6
0	0	0	+	+	+	/	Ammonia, 10%	liquid	3	3	3	4	4	4	6	6	6	6	6	6
-	-	-	0	+	+	0	Aniline oil (ATE 8006)	liquid	3	1	1	1	1	2	3	1	2	6	6	6
-	-	0	+	+	+	/	Anisole (ATE 8004)	liquid	3	2	2	2	2	4	6	2	3	6	6	6
0	0	0	+	+	0	/	Anticorit DWS	liquid	4	3	3	3	3	4	6	1	1	6	3	4
+	+	+	+	+	+	+	Antifrogen N	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Antox 71 E	paste	6	6	6	6	6	6	6	1	2	6	6	6
0	0	0	+	+	0	+	Aral Vitam (various series)	liquid	4	3	3	3	3	4	6	2	3	6	3	4
+	+	+	+	+	+	/	ARALDIT AV 138 M (Vantico)	paste	6	6	6	6	6	6	6	6	6	6	6	6
-	0	0	+	+	+	/	Bacillol plus	liquid	2	2	2	3	3	4	6	1	3	6	6	6
-	+	+	+	+	0	+	BALLISTOL, oil and spray	liquid	4	2	2	6	6	6	6	1	2	6	3	4
-	-	-	-	+	+	-	Benzaldehyde	liquid	3	1	1	2	2	2	1	0	0	6	6	6
-	-	-	-	+	-	-	Benzene	liquid	1	B	B	1	1	1	1	0	A	6	1	1
+	+	+	+	+	+	+	BENZOIC ACID	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	0	+	-	Benzyl alcohol	liquid	1	1	1	1	1	2	2	0	1	4	6	6
+	+	+	+	+	+	+	Bis(2-ethylhexyl) phthalate	liquid	6	5	5	6	6	6	6	4	6	6	6	6
+	+	+	+	+	+	+	Boric acid	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Brake fluid DOT 4	liquid	6	6	6	6	6	6	6	1	3	6	6	6
-	-	-	-	+	-	/	Bromine	liquid	0	0	0	0	0	0	0	0	0	6	1	1
+	+	+	+	+	+	/	Butanox M-50	liquid	6	6	6	6	6	6	6	3	5	6	6	6
-	-	-	-	-	0	-	Butyl acetate	liquid	2	1	1	1	1	2	2	A	B	1	3	3
-	-	-	-	-	+	-	Butyl acrylate	liquid	1	B	B	B	B	0	1	A	A	2	6	6
-	+	0	+	+	+	0	Butyl alcohol (1-butanol)	liquid	4	1	1	5	5	4	6	1	2	6	6	6
-	-	-	-	0	-	-	Butyl amine (1-aminobutane)	liquid	1	0	0	1	1	2	1	0	0	3	1	2
-	+	0	+	+	+	+	Butyl diglycol	liquid	3	2	2	5	5	4	6	1	1	6	6	6
-	0	0	+	+	+	/	Butyl diglycol acetate	liquid	4	2	2	3	3	4	6	1	2	6	6	6
-	-	0	0	0	0	/	Butyl methacrylate	liquid	2	B	B	1	1	3	4	A	B	3	3	3
+	+	+	+	+	+	+	Calcium hydroxide	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	-	/	Carbon disulphide	liquid	A	A	A	A	A	A	B	0	A	6	A	B
+	+	+	+	+	+	+	Caustic soda solution, saturated	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	-	-	Chlorobenzene	liquid	1	0	0	0	0	0	1	0	0	6	1	1
-	-	-	-	+	-	-	Chloroform (trichloromethane)	liquid	1	A	A	A	A	0	A	0	A	6	1	1
-	0	0	-	+	0	+	Chromic acid 50%	liquid	2	1	1	4	4	3	2	0	0	6	3	4
+	+	+	+	+	+	+	Chromosulphuric acid 10%	liquid	6	6	6	6	6	6	6	0	0	6	6	6
-	0	0	0	+	0	+	Chromosulphuric acid, concentrated	liquid	3	2	1	4	4	4	4	0	0	6	4	4

Swelling after 8 hours:
+ resistant - non resistant
0 partially resistant

/ not tested

Level 0 0 min. Level 1 ≥10 min. Level 4 ≥120 min.
Level A 1-5 min. Level 2 ≥30 min. Level 5 ≥240 min.
Level B 5-10 min. Level 3 ≥60 min. Level 6 ≥480 min.

Chemical Resistance List

Resistance to Degradation							Substance		Permeation Time/Level											
									natural latex			chloroprene		nitrile/ chloroprene	nitrile			Fluoro-carbon rubber	butyl	
NR	CR	NBR CR	NBR	FKM	IIR	NBR thermoplastic	chemical	physical state	NR	NR	NR	CR	CR	NBR CR	NBR	NBR	NBR	FKM	IIR	IIR
									395 403 465	706	708	720 722 726	723 725	717	730, 732 733, 736 737, 836	740 741, 742 747	743	890	897	898
+	+	+	+	+	+	+	Citric acid	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Citric acid, saturated, aqueous	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	+	+	+	-	+	Citrus oil terpene (terpene hydrocarbons)	liquid	2	1	1	1	1	5	6	1	2	6	2	2
-	-	-	-	0	-	-	Colorex 31 high-performance paint remover	liquid	B	A	A	A	A	0	A	0	A	4	B	1
-	-	+	+	+	-	-	Cyclohexane	liquid	2	1	0	1	1	5	6	2	3	6	2	2
0	+	+	+	+	+	+	Cyclohexanol	liquid	4	3	3	5	5	5	6	1	1	6	6	6
-	-	-	-	0	+	-	Cyclohexanone	liquid	3	2	1	2	2	2	2	0	B	4	6	6
-	-	0	0	+	0	/	Cyclohexylamine	liquid	3	2	1	2	2	3	3	0	1	6	3	4
0	0	0	0	+	+	+	Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	liquid	6	4	4	3	3	4	4	1	2	5	6	6
+	+	+	+	+	+	+	Dibutyl phthalate (DBP)	liquid	6	6	6	6	6	6	6	3	4	6	6	6
-	-	+	+	+	-	/	Dibutylamine	liquid	2	1	0	2	2	5	6	0	0	6	2	2
-	-	-	-	0	-	-	Dichloromethane	liquid	B	A	A	A	A	A	B	0	A	4	1	1
-	0	+	+	+	+	+	Diesel fuel	liquid	3	2	2	4	4	5	6	4	6	6	4	4
+	+	+	+	+	+	+	Diethanolamine	liquid	6	6	6	6	6	6	6	2	2	6	6	6
-	-	-	-	-	-	-	Diethyl ehter	liquid	1	0	0	1	1	0	1	A	A	2	1	1
+	+	+	+	+	+	/	Diethyl phthalate (DEP or phthalic acid diethyl ester)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	-	-	Diethyl sulphide	liquid	1	0	0	0	0	0	1	A	A	6	1	1
-	-	-	-	0	-	0	Diethylamine (DEA, ethylethene amine)	liquid	1	A	A	A	A	0	1	A	A	4	1	1
+	+	+	+	+	+	+	Diethylene glycol	liquid	6	6	6	6	6	6	6	6	6	6	6	6
0	+	+	0	+	+	/	Diethylene triamine	paste	4	3	3	6	6	5	3	1	1	6	6	6
+	+	+	+	+	+	/	Dimethyl phthalate	liquid	6	6	6	6	6	6	6	4	6	6	6	6
-	-	0	0	0	+	+	Dimethyl sulphate	liquid	2	1	1	2	2	3	4	B	1	4	6	6
0	+	+	0	0	+	0	Dimethyl sulphoxide	liquid	6	4	4	6	6	6	3	1	2	4	6	6
-	-	0	0	0	+	-	Dimethylaminoethylmethacrylate (DMAEMA)	liquid	3	1	1	2	2	3	4	1	3	4	4	5
-	-	-	-	+	+	-	Dimethylformamide	liquid	3	2	2	2	2	2	1	A	B	5	6	6
-	-	-	-	0	+	-	Dioxane	liquid	3	1	1	2	2	2	1	0	0	4	6	6
0	0	0	-	+	+	/	Diphenylamine	solid	5	3	3	3	3	3	2	0	0	6	6	6
-	0	+	+	+	0	/	Dodecyl mercaptane	liquid	3	2	2	3	3	6	6	4	4	6	4	4
-	0	+	+	+	+	+	Dowanol PnB (>95% 3-butoxy-2-propanol)	liquid	4	2	2	3	3	6	6	1	3	6	6	6
0	0	+	+	+	0	+	Engine oil	liquid	4	3	3	3	3	5	6	6	6	6	3	4
-	0	0	0	+	+	0	Ethanol	liquid	2	1	1	3	3	4	4	1	2	6	6	6
+	+	+	+	+	+	+	Ethanolamine	liquid	6	6	6	6	6	6	6	1	2	6	6	6
+	+	+	+	+	+	+	Ethidium bromide 1%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
0	-	0	+	+	+	-	Ethoxypropanol	liquid	4	3	3	2	2	4	5	B	1	6	6	6
-	-	-	-	-	0	-	Ethyl acetate	liquid	1	B	B	1	1	1	1	A	A	1	3	4
-	-	-	-	-	0	-	Ethyl acrylate	liquid	1	B	B	A	A	1	1	A	A	1	3	4
-	-	-	-	+	-	-	Ethyl benzene	liquid	1	0	0	1	1	1	1	0	0	6	1	1
-	-	-	-	-	0	-	Ethyl butyrate	liquid	1	0	0	1	1	1	1	A	A	2	2	3
-	-	-	-	-	0	/	Ethyl formiate	liquid	1	A	A	A	A	1	B	0	A	1	4	4
-	-	-	-	-	0	/	Ethyl methacrylate	liquid	1	0	0	0	0	1	2	A	B	2	2	3
-	0	-	-	+	+	/	Ethylamine, 70%	liquid	2	2	2	3	3	2	1	0	B	6	6	6
+	+	+	+	+	+	+	Ethylence carbonate 30%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	0	-	Ethylene chloride (1,2-dichlorethane)	liquid	1	0	0	1	1	0	0	0	0	6	3	3
0	+	0	-	+	+	+	Ethylene diamine	liquid	4	3	3	3	4	4	2	A	B	5	6	6
+	+	+	+	+	+	+	Ethylene glycol	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	+	+	+	+	+	Ethylene glycol monobutylether (butoxyethanol; butyl glycol)	liquid	3	2	2	3	3	5	6	1	2	6	6	6
-	-	+	+	+	-	/	Exxsol D 60	liquid	2	1	1	2	2	5	6	1	1	6	1	2
-	+	+	+	+	+	+	Formaldehyde 37% (stabilized with approx. 10% methanol)	liquid	3	B	B	5	5	6	6	1	3	6	6	6
+	+	+	+	+	+	+	Formamide	liquid	6	6	6	6	6	6	6	5	5	6	6	6
+	+	+	+	+	+	+	Formic acid, 10%	liquid	6	6	6	6	6	6	6	5	6	6	6	6
+	+	0	0	+	+	+	Formic acid, 50%	liquid	5	5	4	6	6	4	4	1	2	6	6	6
0	+	0	-	+	+	/	Formic acid, 98%	liquid	5	3	3	6	6	4	1	0	A	6	6	6
0	0	0	-	0	+	/	gamma-Butyrolactone	liquid	4	3	3	3	3	3	2	A	B	4	6	6
+	+	+	+	+	+	+	Glycerol	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Glysantin	liquid	6	6	6	6	6	6	6	6	6	6	6	6
0	0	+	+	+	0	+	Heating oil	liquid	4	3	3	3	3	5	6	4	6	6	3	4
-	-	+	+	+	-	-	Heptane-n	liquid	1	0	0	1	1	5	6	1	2	6	1	1

Swelling after 8 hours:
+ resistant
0 partially resistant
- non resistant

/ not tested

Level 0 0 min. Level A 1-5 min. Level B 5-10 min.
Level 1 ≥10 min. Level 2 ≥30 min. Level 3 ≥60 min.
Level 4 ≥120 min. Level 5 ≥240 min. Level 6 ≥480 min.

Chemical Resistance List

Resistance to Degradation							Substance		Permeation Time/Level											
									natural latex			chloroprene		nitrile/ chloroprene	nitrile			Fluoro-carbon rubber	butyl	
NR	CR	NBR CR	NBR	FKM	IIR	NBR thermoplastic	chemical	physical state	NR	NR	NR	CR	CR	NBR CR	NBR	NBR	NBR	FKM	IIR	IIR
									395 403 465	706	708	720 722 726	723 725	717	730, 732 733, 736 737, 836	740 741, 742 747	743	890	897	898
-	-	+	+	+	-	-	Hexane-n	liquid	1	1	1	1	1	5	6	1	1	6	2	2
-	-	-	-	-	+	/	Hexenal (trans-2-hexenal)	liquid	1	1	1	0	0	0	1	A	A	2	4	5
0	0	+	+	+	+	/	Hydranal-Composite 5 K	liquid	5	3	3	4	4	5	6	2	4	6	6	6
-	-	-	-	+	+	/	Hydranal-Coulomat AG	liquid	2	1	1	2	2	2	2	A	1	6	6	6
-	-	-	-	+	+	/	Hydranal-Solvent	liquid	3	1	1	2	2	2	2	B	1	6	6	6
-	-	-	-	+	0	/	Hydranal-Working Medium K	liquid	2	B	B	1	1	0	B	0	A	6	3	4
+	+	+	+	+	+	+	Hydrazine	liquid	6	6	6	6	6	6	6	2	2	6	6	6
+	+	+	+	+	+	/	Hydrobromic acid 47%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Hydrochloric acid 0-10%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Hydrochloric acid 10-20%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Hydrochloric acid 20-30%	liquid	5	5	5	6	6	6	6	4	6	6	6	6
0	+	+	+	+	+	+	Hydrochloric acid 30-35%	liquid	5	4	4	6	6	6	6	4	5	6	6	6
+	+	+	+	+	+	+	Hydrofluoric acid 15%	liquid	6	6	6	6	6	6	6	4	5	6	6	6
0	+	+	0	+	+	0	Hydrofluoric acid 40%	liquid	5	4	4	6	6	5	4	B	1	6	6	6
+	+	+	+	+	+	+	Hydrogen peroxide, 30% (perhydrol)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Hydroquinone	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Hydroquinone monomethylether	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	HYDROXYL AMMONIUM CHLORIDE	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	+	+	+	0	/	IBS Special Cleaner EL/EXTRA (isoparaff. HC)	liquid	4	1	1	4	4	6	6	3	5	6	4	4
-	-	+	+	+	0	/	IBS Special Cleaner PURGASOL (HC low in aromatics)	liquid	3	1	1	2	2	5	6	4	6	6	3	3
+	+	+	+	+	+	+	Incidin Extra (1.0% solution in water)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	INCIDIN PERFECT (0.5% solution in water)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Incidin Plus (0.5% solution in water)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Incidur (1.0% solution in water)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	0	0	+	-	-	Internal combusion fuel, normal/super/super plus/lead-free	liquid	1	A	A	B	B	3	4	A	B	6	1	1
+	+	+	+	+	+	+	Iodine	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Iron(III) chloride	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Iron(III) chloride solution 10-40%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	+	+	+	+	+	+	Isobutyl alcohol (isobutanol)	liquid	3	1	1	6	6	6	6	1	1	6	6	6
+	+	+	+	+	+	+	Isoflex Topas NB 52	paste	6	6	6	6	6	6	6	6	6	6	6	6
-	-	+	+	+	-	0	Isooctane (2,2,4-trimethyl pentane; isobutyl trimethylmethane; isooctane)	liquid	2	1	1	2	2	5	6	3	6	6	2	2
-	0	0	0	+	+	/	Isophorone	liquid	4	2	2	4	4	4	4	1	1	5	6	6
-	-	-	-	-	0	-	Isopropyl acetate (acetic acid-1-methylethyl ester)	liquid	1	B	B	A	A	1	1	A	A	1	4	4
-	+	+	+	+	+	0	Isopropyl alcohol	liquid	1	B	B	5	5	6	6	1	3	6	6	6
-	-	+	+	+	0	+	JET A-1 (kerosene)	liquid	2	B	B	2	2	5	6	5	6	6	2	3
-	-	0	+	+	-	/	Kontakt 60 (Kontakt Chemie)	aerosol	1	0	0	1	1	4	6	1	3	6	1	2
+	+	+	+	+	+	+	Lactic acid	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Levoxin 15 (hydrazine)	liquid	6	6	6	6	6	6	6	2	2	6	6	6
+	+	+	+	+	+	+	Loctite 243	liquid	6	6	6	6	6	6	6	3	5	6	6	6
0	+	+	+	+	+	+	Loctite 262	liquid	6	3	3	6	6	6	6	6	6	6	6	6
0	0	+	+	+	+	/	Loctite 315	liquid	6	4	4	4	4	5	6	3	3	6	6	6
-	-	-	-	0	0	/	Loctite 3298	liquid	1	1	1	B	B	1	2	A	B	3	3	4
+	+	+	+	+	+	+	Loctite 511	liquid	6	5	5	6	6	6	6	4	4	6	6	6
0	0	+	+	+	+	/	Loctite 601	liquid	6	4	4	4	4	5	6	2	3	6	6	6
-	+	+	+	+	+	+	Loctite 620	liquid	3	1	1	6	6	6	6	4	6	6	6	6
-	-	-	-	-	0	/	Loctite 7200 (gasket remover/adhesive and sealant remover)	liquid	1	A	A	A	A	0	1	A	A	2	3	3
-	-	-	-	+	-	/	Loctite 7386	liquid	1	0	0	1	0	0	6	2	3	6	2	3
-	-	-	0	0	-	/	Loctite 7800	liquid	1	0	0	0	0	2	3	0	A	3	1	1
-	-	-	-	0	0	/	Lösin 100 (universal thinner)	liquid	2	1	1	2	2	2	2	0	0	3	2	3
+	+	+	+	+	+	+	Maleic acid anhydride	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Maleic acid, saturated	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Marlotherm S (benzyldiphenylmethane with 0-3 methyl groups)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
0	+	+	0	+	+	+	m-Cresol	liquid	4	3	3	6	6	5	3	1	2	6	6	6
+	+	+	+	+	+	+	Mercury	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Mesamoll 633X49	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	0	0	+	+	/	Methacrylic acid	liquid	3	1	1	3	3	4	4	1	2	6	6	6
+	+	+	0	+	+	/	Methane sulphonic acid (MSA)	liquid	6	6	6	6	6	5	3	1	2	6	6	6
-	-	-	-	0	+	-	Methanol	liquid	1	A	A	2	2	2	2	A	B	4	6	6

Swelling after 8 hours:
+ resistant
0 partially resistant
- non resistant

/ not tested

Level 0 0 min.
Level A 1-5 min.
Level B 5-10 min.
Level 1 ≥10 min.
Level 2 ≥30 min.
Level 3 ≥60 min.
Level 4 ≥120 min.
Level 5 ≥240 min.
Level 6 ≥480 min.

Chemical Resistance List

Resistance to Degradation							Substance		Permeation Time/Level												
									natural latex			chloroprene		nitrile/ chloroprene	nitrile			Fluoro-carbon rubber	butyl	
NR	CR	NBR CR	NBR	FKM	IIR	NBR thermoplastic	chemical	physical state	NR	NR	NR	CR	CR	NBR CR	NBR	NBR	NBR	FKM	IIR	IIR
									395 403 465	706	708	720 722 726	723 725	717	730, 732 733, 736 737, 836	740 741, 742 747	743	890	897	898
-	-	-	-	-	+	-	Methyl acetate	liquid	1	B	B	1	1	0	B	0	0	1	4	5
-	-	-	-	-	0	-	Methyl acrylate	liquid	1	0	0	0	0	0	1	0	0	1	3	4
-	-	-	-	-	+	-	Methyl ethyl ketone (ethyl methyl ketone, 2-butanone, MEK)	liquid	1	B	B	1	1	1	B	0	A	1	5	5
-	-	-	-	-	0	-	Methyl formiate	liquid	1	A	A	A	A	1	B	0	0	1	4	4
-	-	-	-	-	+	-	Methyl isobutyl ketone (MIBK)	liquid	1	B	B	1	1	1	1	A	A	2	4	5
-	-	-	-	-	0	-	Methyl methacrylate	liquid	1	0	0	1	1	1	1	0	0	2	2	3
+	+	+	+	+	+	+	Methyl orange	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Methyl red	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Methylene blue	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	0	0	+	+	0	Mineralized methylated spirit (industrial ethanol)	liquid	2	1	1	3	3	4	4	1	2	6	6	6
0	0	+	+	+	0	+	Mobil DTE 25	liquid	4	3	3	3	3	5	6	2	2	6	3	4
0	0	+	+	+	0	+	Mobil Vactra Oil No. 2	liquid	4	3	3	3	3	5	6	1	2	6	3	4
+	+	+	+	+	+	+	Mobilcut 311 coolant lubricant (20% triethanolamine, 15% butoxyethoxy-ethoxyethanol)	liquid	6	6	6	6	6	6	6	6	6	6	6	6
0	0	+	+	+	0	+	Mobilgear 629	liquid	4	3	3	3	3	5	6	1	2	6	3	4
0	0	+	+	+	0	+	Mobilgear 630	liquid	4	3	3	3	3	5	6	1	1	6	3	4
0	0	+	+	+	0	+	Mobilmet 151	liquid	4	3	3	3	3	5	6	1	1	6	3	4
+	+	+	+	+	+	+	Monoethylene glycol	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	0	+	0	Morpholine	liquid	1	0	0	1	1	1	1	0	0	3	6	6
0	-	-	-	-	+	-	N,N-Dimethyl acetamide (DMAC)	liquid	4	3	3	2	2	2	1	A	A	2	6	6
-	-	+	+	+	-	-	Naphtha benzene (cleaner's naphtha 100/140)	liquid	2	1	1	2	2	5	6	1	2	6	1	2
+	+	+	+	+	+	+	Nitric Acid, 10%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	0	0	-	Nitric acid, 100%	liquid	1	0	0	A	0	2	B	A	0	3	2	3
+	+	+	0	+	+	0	Nitric acid, 50%	liquid	6	6	6	5	5	5	4	1	2	6	6	6
-	-	-	-	0	-	/	Nitro thinner 1A	liquid	1	B	B	B	B	0	1	A	A	3	2	2
-	-	-	-	+	+	-	Nitrobenzene	liquid	3	2	2	2	2	2	2	0	0	6	6	6
0	+	+	-	+	+	+	o-Cresol	liquid	3	3	3	6	6	5	2	0	1	6	6	6
-	-	-	-	+	0	/	o-Dichlorobenzene	liquid	2	1	1	1	1	2	2	0	B	6	2	3
-	0	0	0	+	+	/	Omnifit 100M screw fixation compound	liquid	4	2	2	4	4	4	4	1	1	6	6	6
+	+	+	+	+	+	+	ortho-Phosphoric acid 85%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Oxalic acid	solid	6	6	6	6	6	6	6	6	6	6	6	6
0	+	+	+	+	+	+	P3-galvaclean 20	liquid	4	3	3	6	6	6	6	0	0	6	6	6
+	+	+	+	+	+	+	P3-rinsola	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Palmitinic acid	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Paraffin, liquid	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Paraformaldehyde	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	-	-	-	Pattex compact	liquid	1	0	0	1	1	2	2	0	0	2	1	2
-	-	-	-	0	0	-	Pattex high-strength adhesive	liquid	1	0	0	1	1	2	2	0	0	3	2	3
-	-	+	+	+	-	-	Pentane	liquid	1	0	0	1	1	5	6	1	1	6	1	2
+	+	+	+	+	+	/	Perchloric acid, 70%	liquid	6	5	5	5	5	5	5	0	0	6	6	6
-	-	+	+	+	0	-	Petroleum A III (Ketrul HT)	liquid	2	1	1	1	1	5	6	4	6	6	3	3
-	-	+	+	+	-	-	Petroleum ether 40/60 (wound benzene, ligroin)	liquid	1	0	0	2	2	5	6	1	2	6	1	1
-	0	0	0	+	+	0	Phenol 40.5 (ATE 8007)	solid	4	2	2	4	4	4	4	1	2	6	6	6
+	+	+	+	+	+	+	Phenolphthalein	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	0	0	+	+	/	Phenolphthalein solution, 1% in ethanol	liquid	2	1	1	3	3	4	4	1	2	6	6	6
+	+	+	+	+	+	+	Phosphoric acid, 10%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Phosphoric acid, saturated	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	-	0	/	Phosphoryl chloride (phosphoroxy chloride, phosphoroxide trichloride)	liquid	2	1	1	2	2	2	2	0	B	2	4	4
-	-	-	-	-	0	/	Plastik 70, aerosol	aerosol	1	0	0	1	1	1	1	0	0	1	2	3
+	+	+	+	+	+	+	Potash alkaline, 10%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Potash alkaline, saturated	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Potassium hydroxide	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	0	+	/	Propionaldehyde	liquid	1	0	0	1	1	1	0	0	0	3	5	5
-	-	0	0	+	+	/	Propionic acid	liquid	3	2	2	2	2	3	3	A	B	6	6	6
-	-	-	-	-	0	-	Propyl acetate	liquid	1	0	0	1	1	1	1	0	A	1	3	4
-	0	+	+	+	+	0	Propyl alcohol	liquid	3	2	1	4	4	6	6	1	3	6	6	6
-	-	-	-	-	0	-	Propylacetate (acetic acid propyl ester)	liquid	1	0	0	1	1	1	1	0	A	1	3	4

Swelling after 8 hours:
+ resistant
0 partially resistant
- non resistant

/ not tested

Level 0 0 min.
Level A 1-5 min.
Level B 5-10 min.
Level 1 ≥10 min.
Level 2 ≥30 min.
Level 3 ≥60 min.
Level 4 ≥120 min.
Level 5 ≥240 min.
Level 6 ≥480 min.

Chemical Resistance List

Resistance to Degradation							Substance		Permeation Time/Level											
									natural latex			chloroprene		nitrile/ chloroprene	nitrile			Fluoro-carbon rubber	butyl	
NR	CR	NBR CR	NBR	FKM	IIR	NBR thermoplastic	chemical	physical state	NR	NR	NR	CR	CR	NBR CR	NBR	NBR	NBR	FKM	IIR	IIR
									395 403 465	706	708	720 722 726	723 725	717	730, 732 733, 736 737, 836	740 741, 742 747	743	890	897	898
-	-	-	-	0	-	/	Propylamine	liquid	1	A	A	B	B	0	1	A	A	3	1	2
-	-	-	-	-	+	-	Pyridine (heterocyclic compound)	liquid	2	1	1	1	1	1	1	0	0	1	4	5
-	0	+	+	+	0	/	Rivolta M.T.X. 100	liquid	2	1	1	3	3	5	6	3	5	6	3	4
-	0	+	+	+	0	/	Rivolta M.T.X. 60	liquid	2	1	1	3	3	5	6	3	5	6	3	4
0	0	+	+	+	0	/	RIVOLTA S.K.D. 170 - aerosol	liquid	4	3	3	3	3	5	6	1	3	6	3	4
-	0	+	+	+	0	/	Rivolta S.L.X. Top	liquid	4	1	1	4	4	5	6	3	3	6	3	4
0	0	+	+	+	0	/	Rivolta T.R.S. plus	liquid	4	3	3	3	3	5	6	2	3	6	3	4
-	-	-	-	+	0	/	Seevenax Thinner 73	liquid	1	B	B	2	2	2	2	A	1	5	4	4
0	0	+	+	+	0	+	Shell Retinax G	paste	4	3	3	3	3	6	6	2	3	6	3	4
0	0	+	+	+	0	+	Shell Tellus 46	liquid	4	3	3	3	3	6	6	2	3	6	3	4
-	-	-	-	-	+	/	Sicomet 50	liquid	1	0	0	2	2	2	1	0	0	1	6	6
-	-	-	-	-	+	/	Sicomet 85	liquid	1	0	0	2	2	2	1	0	0	1	6	6
+	+	+	+	+	+	+	Sidolin	liquid	6	6	6	6	6	6	6	5	6	6	6	6
-	-	+	+	+	-	/	Silicium tetrachloride	liquid	1	B	B	1	1	5	6	6	6	6	1	2
+	+	+	+	+	+	+	Silver nitrate	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Skydrol LD Type 4	liquid	6	6	6	6	6	6	6	5	6	6	6	6
+	+	+	+	+	+	+	Soda lye 10-30% solution	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Soda lye 40-50% solution	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Soda lye, 0-10% solution	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Sodium hydroxide	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Sodium hypochlorite	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Sodium thiosulphate	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	+	+	+	-	-	Spezial benzene 100/140 (free of aromatic HCs)	liquid	2	1	1	2	2	6	6	1	2	6	1	2
+	+	+	+	+	+	+	Stearic acid	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	-	-	Styrene (phenylethene, vinyl benzole, cinnamol, ethenyl benzole)	liquid	1	B	B	A	A	1	2	A	A	6	1	2
+	+	+	+	+	+	+	Sulphuric acid 50%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Sulphuric acid, 10%	liquid	6	6	6	6	6	6	6	6	6	6	6	6
-	0	0	-	+	0	0	Sulphuric acid, 96%	liquid	2	1	1	3	3	3	3	1	2	6	4	4
-	0	0	-	+	0	/	Sulphuric acid, fuming, 65% SO3 (oleum)	liquid	3	1	0	3	3	3	2	0	0	5	3	4
+	+	+	+	+	+	+	Talcum	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	-	-	/	Tangit Cleaner	liquid	1	0	0	0	0	0	0	0	0	1	1	2
-	-	-	-	-	-	/	Tangit PVC-U Special Adhesive	liquid	1	0	0	0	0	0	0	0	0	1	1	1
-	-	-	-	-	0	/	Terokal 2444	liquid	1	0	0	1	1	2	2	0	B	2	2	3
-	-	+	+	+	0	-	tert-Butylethylether	liquid	1	1	1	1	1	5	6	2	2	6	2	3
-	-	0	+	+	-	-	Tertrachloroethylene (perchloroethylene)	liquid	1	0	0	1	1	4	5	1	2	6	1	1
-	-	0	+	+	-	-	Tetrachloromethane (tetra)	liquid	1	1	0	1	1	4	5	1	1	6	1	2
-	-	-	-	-	-	-	Tetrahydrofurane	liquid	1	A	A	B	B	1	B	0	A	1	1	1
-	-	0	0	0	0	/	Tetramethylethylenediamine	liquid	1	B	B	1	1	3	4	A	B	4	2	3
+	+	+	+	+	+	+	Texanol	liquid	5	5	5	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Thioacetamide	solid	6	6	6	6	6	6	6	6	6	6	6	6
0	+	0	0	+	+	/	Thioglycolic acid	liquid	5	4	4	5	5	4	3	B	1	6	6	6
+	+	+	+	+	+	+	Thiourea	solid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Titriplex III	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	-	-	Toluene	liquid	1	0	0	0	0	1	1	0	A	6	1	1
+	+	+	+	+	+	+	Topanol O	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	-	+	/	Tributyl phosphate	liquid	1	1	0	1	1	1	1	0	B	2	6	6
+	+	+	+	+	+	+	Trichloroacetic acid	solid	6	6	6	6	6	6	6	6	6	6	6	6
-	-	-	-	+	-	-	Trichloroethylene (tri)	liquid	1	A	A	B	B	0	1	0	A	6	B	1
+	+	+	+	+	+	+	Triethanolamine	liquid	6	6	6	6	6	6	6	1	1	6	6	6
-	-	+	+	+	+	/	Triethylamine	liquid	1	A	A	1	1	5	6	1	2	6	4	5
0	+	+	-	+	+	/	Trifluoroacetic acid	liquid	6	4	4	6	6	5	1	A	A	6	6	6
-	-	-	-	+	-	/	Trifluoromethane sulphonic acid	liquid	0	0	0	0	0	0	0	0	0	6	0	0
+	+	+	+	+	+	+	Triton X 100	liquid	6	6	6	6	6	6	6	6	6	6	6	6
+	+	+	+	+	+	+	Urea	solid	6	6	6	6	6	6	6	6	6	6	6	6
0	0	0	+	+	0	/	Used oil	liquid	4	3	3	3	3	4	6	1	1	6	3	4
-	-	-	-	-	+	-	Vinyl acetate monomer	liquid	B	0	0	0	0	0	1	0	0	1	4	5
-	-	-	-	-	-	/	WD-40	liquid	2	1	1	1	1	1	1	0	0	2	1	2
-	-	-	-	-	-	-	White spirit	liquid	1	1	1	1	1	1	1	0	0	2	1	2
-	-	-	-	+	-	-	Xylene	liquid	1	1	B	B	B	1	2	0	A	6	2	2

Swelling after 8 hours:
+ resistant
0 partially resistant
- non resistant

/ not tested

Level 0 0 min. Level 1 ≥10 min. Level 4 ≥120 min.
Level A 1-5 min. Level 2 ≥30 min. Level 5 ≥240 min.
Level B 5-10 min. Level 3 ≥60 min. Level 6 ≥480 min.

Penetration:
All chemical protective gloves are tested for level 3 = AQL 0,65.
This is a 100 %-control.

Degradation resistance:

Level	degradation resistance	analysis
+	‹ 7 %	resistant
0	‹ 15 %	partially resistant
-	≥ 15 %	non resistant

Important notice:
The information in the recommendation list was tested under laboratory conditions (new gloves, no additional mechanical exertion, room temperature) with utmost care and with modern measuring methods. This data only serves as an orientation when selecting the appropriate chemical protective glove, as the conditions in real usually vary to the those in the laboratory. They especially do not replace the aptitude test of the glove user.

Tricotril®

Application

- handling of contaminated heavy parts
- cleaning and maintenance in chemical plants
- galvanising works
- petrochemistry
- chemical industry

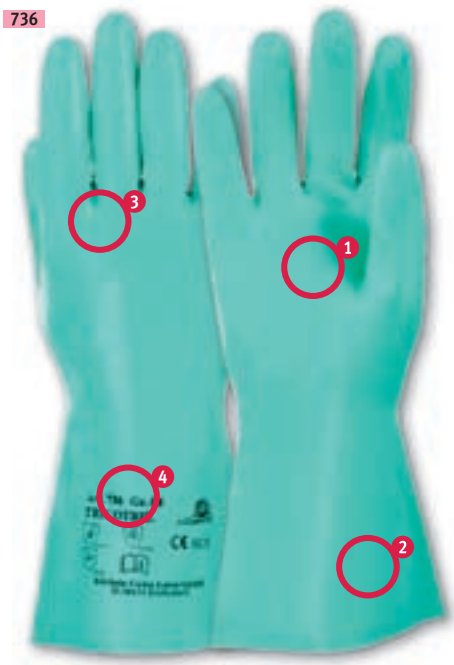
Qualities and advantages

- broad chemical resistance 4
- high mechanical resistance 4
- good grip when handling greasy and oily parts 1
- high user comfort for long working periods without operator fatigue 2
- skin friendly due to solvent-free adhesive on the cotton liner

736

Article no. Name	736 Tricotril®	737 Tricotril®	836 Tricotril® K
Material	nitrile, cotton	nitrile, cotton	nitrile, para-aramid
Description	seamless cotton liner, cuff, fully coated, palm profile	seamless cotton liner, cuff, fully coated, palm profile	seamless cotton liner, cuff, fully coated, palm profile
Length (mm) Thickness (mm)	290-310 1,5 ± 0,2	390-410 1,5 ± 0,2	290-310 1,7 ± 0,1
Colour Size	green 8, 9, 10, 11	green 8, 9, 10, 11	green 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 3121 AJL	category III EN388 EN374 EN374 3121 AJL	category III EN388 EN374 EN374 3332 AJL

736



1 distinct palm profile
2 untreated seamless cotton liner
3 ergonomic fit
4 special nitrile

737

Features

- free from natural latex
- free from substances causing allergies, such as thiurames or benzothiazoles
- cotton liner is fixed later to the finished glove, to ensure maximum protection
- good antistatic and electrostatic properties
- approved for food handling
- 736, 737 seamless cotton liner
- 836 good cut resistance by para-aramid liner

836

Tricotril® Winter

738

Application

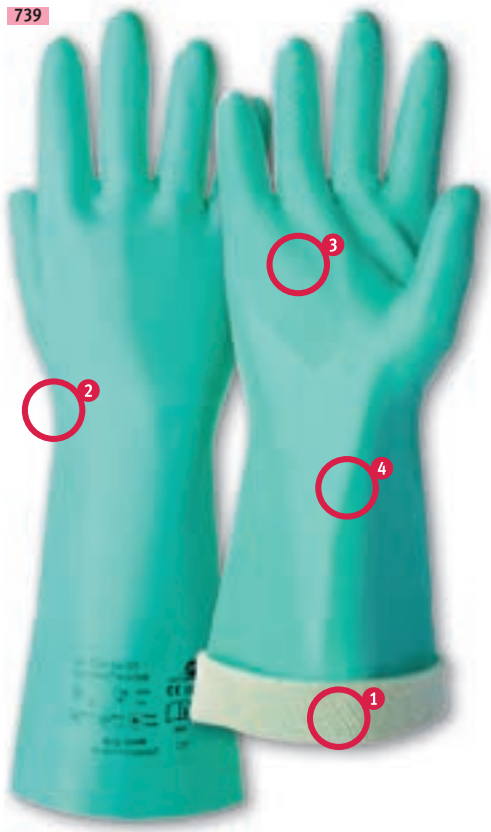
› working in cold areas
› working in areas with momentary steam hazard
› handling of contaminated heavy parts
› cleaning and maintenance in chemical plants
› galvanising works
› chemical industry

Qualities and advantages

› insulating effect at high or low temperatures 1 4
› high flexibility at low temperatures to -20 °C 4
› broad chemical resistance 4
› high mechanical resistance 1 4
› good grip when handling greasy and oily parts 3
› high user comfort for long working periods without operator fatigue 2

Article no. Name	738 Tricotril® Winter	739 Tricotril® Winter
Material	nitrile, wool	nitrile, wool
Description	heavy seamless wool liner, cuff, fully coated, palm profile	heavy seamless wool liner, cuff, fully coated, palm profile
Length (mm) Thickness (mm)	290 - 310 2,0 ± 0,2	390 - 410 2,0 ± 0,2
Colour Size	green 8, 9, 10, 11	green 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 EN407 to -20 °C 3121 AJL x2xxxx	category III EN388 EN374 EN374 EN407 to -20 °C 3121 AJL x2xxxx

739



1 seamless wool liner
2 ergonomic fit
3 distinct palm profile
4 special nitrile

738

739

Features

› free from natural latex
› free from substances causing allergies, such as thiurames or benzothiazoles
› warming seamless wool liner
› skin friendly by solvent-free adhesive on the wool liner
› wool liner is fixed later to the finished glove to ensure maximum protection
› good antistatic and electrostatic properties
› approved for food handling
› see page 98

TevuChem®

765

Application

- oil production
- petrochemicals
- printing works
- metal processing
- recycling work

Qualities and advantages

- outstanding grip
- very good chemical resistance to mineral oils and aliphatic carbohydrates
- liquid-tight
- good mechanical properties

Article no. Name	763 TevuChem® 763	765 TevuChem® 765
Material	nitrile, nitrile foam, cotton	nitrile, special nitrile, cotton
Description	liner, cuff, multi-layer composition	liner, cuff, multi-layer composition
Length (mm) Thickness (mm)	390 - 410 1,65 ± 0,20	290 - 310 1,65 ± 0,20
Colour Size	yellow/dark blue 8, 9, 10	yellow/dark blue 8, 9, 10
Classification	category III EN388 EN374 EN374 3111 JKL	category III EN388 EN374 EN374 3111 JKL

765

1. nitrile foam
2. 2-layer system
3. ergonomic fit
4. high-quality cotton liner

763

Features

- 2-layer system
- ergonomic fit
- high-quality cotton liner
- free from natural latex

765

Tricopren®

Application

- removal of contaminated parts from dipping baths
- handling of contaminated heavy parts
- cleaning and maintenance in chemical plants
- chemical industry
- working with oily and greasy parts

Qualities and advantages

- broad chemical resistance 4
- high mechanical resistance 4
- sure grip when handling wet parts due to palm profile 1
- high user comfort for long working periods without operator fatigue 2 4
- flexible in warmth an cold 3 4
- good dexterity 3 4

723

Article no. Name	723 Tricopren®	725 Tricopren®
Material	chloroprene, cotton	chloroprene, cotton
Description	seamless cotton liner, cuff, fully coated, palm profile	seamless cotton liner, cuff, fully coated, palm profile
Length (mm) Thickness (mm)	290-310 1,3±0,2	390-410 1,3±0,2
Colour Size	grey 8, 9, 10, 11	grey 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 2121 AKL	category III EN388 EN374 EN374 2121 AKL

723

1 distinct palm profile
2 untreated seamless cotton liner
3 ergonomic fit
4 special chloroprene

725

Features

- free from natural latex
- free from substances causing allergies, such as thiurames or benzothiazoles
- seamless cotton liner
- cotton liner is fixed later to the finished glove to ensure maximum protection

723

Nitopren®

Application

› chemical industry
› pharmaceuticals industry
› metal working and finishing
› printing industry
› laboratories

Qualities and advantages

› high resistance against a variety of hazardous substance groups 2
› good grip when handling wet and oily parts 1
› 2-layer system
› high mechanical resistance

Article no. / Name	717 Nitopren®
Material	nitrile, chloroprene
Description	2-layer system, cuff, flock lined
Length (mm) / Thickness (mm)	300-320 / 0,65 ± 0,1
Colour / Size	dark-grey / 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 2001 AJL

717

Features

› free from natural latex
› excellent anatomical design

717

717

1 roughened palm
2 cotton flock lining
3 anatomical design
4 2-layer system

Combi-Latex

395

Application

› handling of acids and alkalis
› cleaning
› work with high mechanical strain
› sewerage system cleaning
› galvanising works

Qualities and advantages

› excellent mechanical resistance
› good grip when handling wet parts 1
› high elasticity
› excellent low temperature flexibility
› good puncture resistance
› wide cuff for quick donning and doffing 3

Article no. Name	395 Combi-Latex	403 Combi-Latex
Material	natural latex	natural latex
Description	cuff, roughened	long cuff, roughened
Length (mm) Thickness (mm)	390 - 410 1 ± 0,1	575 - 625 1 ± 0,1
Colour Size	cream 9, 10, 11	cream 9, 10, 11
Classification	category III EN388 EN374 EN374 113X BKL	category III EN388 EN374 EN374 113X BKL

403

395

Features

› free from the allergenic substances thiourea and 1.3 diphenylguanidine

395

1 roughened palm
2 ergonomic fit
3 wide cuff diameter

Lapren®, Cama Clean

Application

- laboratory work
- cleaning
- use in the catering industry
- manufacturing of small parts
- precision engineering and electronics industry
- working in power stations
- food industry

Qualities and advantages

- excellent sensitivity
- good grip when handling wet parts 1
- high flexibility at low temperatures
- high elasticity
- good wearing comfort 2 3

706

Article no. Name	706 Lapren®	708 Cama Clean
Material	natural latex, chloroprene	natural latex
Description	stretched cuff, profiled palm surface, flock lined	long cuff, roughened, flock lineda
Length (mm) Thickness (mm)	300-320 0,6 ± 0,05	385-415 0,5 ± 0,1
Colour Size	green 7, 8, 9, 10	white 7, 8, 9, 10
Classification	category III EN388 EN374 EN374 2020	category III EN388 EN374 EN374 EN421 X010

706

1 profiled palm surface (grooves)
2 cotton flock lining
3 ergonomic fit
4 stretched cuff

708

Features

- free from the allergenic substances thiourea and 1.3 diphenylguanidine
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- approved for food handling
- 706 with polychloroprene part
- 708 authorisation according to EN 421 (radioactive contamination)
- 708 without profiled palm surface

706

Camapren®

Application

- laboratory work
- chemical industry
- galvanising works
- food industry
- automotive industry
- beverage industry

Qualities and advantages

- excellent sensitivity 3
- good grip when handling greasy and oily parts 1 4
- high flexibility at low temperatures 4
- high elasticity 4
- excellent wearing comfort 3 2

720

Article no. Name	720 Camapren®	722 Camapren®	726 Camapren®
Material	chloroprene, natural latex	chloroprene, natural latex	chloroprene, natural latex
Description	cuff, surface profile, flock lined	cuff, surface profile, flock lined	cuff, roughened, flock lined
Length (mm) **Thickness (mm)**	290-310 0,65 ± 0,1	290-310 0,6 ± 0,1	385-415 0,65 ± 0,1
Colour **Size**	black 7, 8, 9, 10, 11	red 7, 8, 9, 10, 11	black 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 1111 AKL	category III EN388 EN374 EN374 EN421 1111 AKL	category III EN388 EN374 EN374 1111 AKL

720

1 profiled palm surface (grooves)
2 stretched cuff
3 ergonomic fit
4 special chloroprene

722

Features

- free from the allergenic substance mercaptobenzothiazol
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- cotton flock lining
- 720, 722 stretched cuff
- 722 authorisation according to EN 421 (radioactive contamination)

726

Camatril®

730

Application

- automotive and supply industry
- petrochemistry and printing industry
- paint shops
- laboratory work
- chemical industry
- maintenance and cleaning
- food industry
- handling of epoxy resins

Qualities and advantages

- good sensitivity 3
- good grip when handling greasy and oily parts 1
- good temperature flexibility 5
- high mechanical resistance 5
- good resistance against a variety of hazardous substance groups 5

Article no. Name	729 Camatril® Profi	730 Camatril® Velours	731 Camatril®
Material	nitrile	nitrile	nitrile
Description	cuff, surface profile, flock lined	cuff, roughened, flock lined	cuff, roughened, unlined
Length (mm) **Thickness (mm)**	290-310 0,4 ± 0,05	300-320 0,4 ± 0,05	300-320 0,33 ± 0,05
Colour **Size**	blue 7, 8, 9, 10, 11	green 7, 8, 9, 10, 11	green 7, 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 2101 AJL	category III EN388 EN374 EN374 2101 AJL	category III EN388 EN374 EN374 2001 JKL

730

1 roughened palm
2 cotton flock lining
3 ergonomic fit
4 chlorinated surface
5 special nitrile

729

731

Features

- free from substances causing allergies, such as thiurames or thiourea
- good antistatic and electrostatic properties
- approved for food handling
- 729 glove surface free from silicone (lacquer indifference, test method automotive industry)
- 729 stretched cuff and surface profile
- 730, 731 free from silicone (lacquer indifference, test method automotive industry)

Camatril®

732

Application

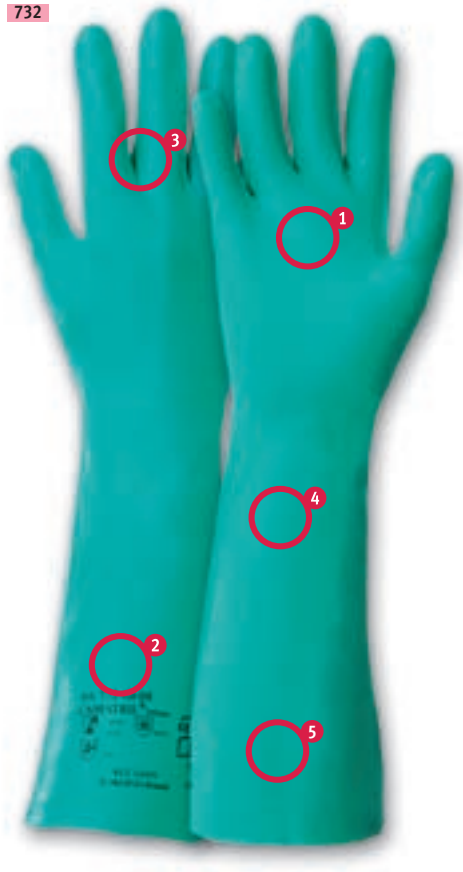
- agriculture and horticulture
- laboratory work
- automotive and supply industry
- petrochemistry and printing industry
- paint shops
- food industry
- chemical industry
- maintenance and cleaning
- handling of epoxy resins

Qualities and advantages

- good grip when handling wet parts 1
- good sensitivity 3
- good resistance against a variety of different hazardous substance groups 5
- good temperature flexibility 5
- high mechanical resistance 5

Article no. Name	732 Camatril® Velours	733 Camatril®
Material	nitrile	nitrile
Description	long cuff, roughened, flock lined	long cuff, roughened, unlined
Length (mm) Thickness (mm)	390 - 410 0,4 ± 0,05	575 - 625 0,5 ± 0,1
Colour Size	green 7, 8, 9, 10, 11	green 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 2101 AJL	category III EN388 EN374 EN374 3102 AJL

732



1 roughened palm
2 cotton flock lining
3 ergonomic fit
4 chlorinated surface
5 special nitrile

733

733

Features

- free from substances causing allergies, such as thiurames or thiourea
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- good antistatic and electrostatic properties
- 732 free from silicone (lacquer indifference, test method automotive industry)
- 732, 733 approved for food handling

Dermatril®

740 746

Application

- laboratory and operations
- chemical industry
- food industry
- electronic industry
- computer industry
- cleaning and maintenance
- protection of products

Qualities and advantages

- disposable protective glove
- very good sensitivity 2 4
- excellent wearing comfort 2
- increased tear resistance 4
- improved grip by roughened fingertips 1
- good chemical resistance 4
- close-fitting shape

Article no. Name	740 Dermatril®	741 Dermatril® L	743 Dermatril® P
Material	nitrile	nitrile	nitrile
Description	rolled edge, roughened fingertips, powderfree	long cuff, rolled edge, roughened fingertips, powderfree	long cuff, rolled, edge, roughened fingertips, powderfree
Length (mm) Thickness (mm)	240 - 260 0,11 ± 0,03	270 - 290 0,11 ± 0,03	270 - 290 0,2
Colour Size	blue 6, 7, 8, 9, 10, 11	blue 7, 8, 9, 10, 11	blue 6, 7, 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 000x	category III EN388 EN374 EN374 000x	category III EN388 EN374 EN374 000x JKL

740

1 roughened fingertips
2 ergonomic fit
3 single marking
4 special nitrile

741

743

Features

- free from natural latex
- free from substances causing allergies, such as thiurames or resin
- meets the requirements of the norm EN 455 for medical examination gloves
- resistant against a multitude of cytostatic drugs
- virus-resistant according to ASTM 1671:2001
- single removal from hygienic dispenser box
- suitable high-grade steel dispenser box available
- approved for food handling
- fulfills the ESDS norm EN 61340-5-1 (electrostatic discharge)
- 740, 741 glove surface free from silicone (lacquer indifference, test method automotive industry)
- 743 small package (10 pieces) available as article no. 746 (see image above)

Dermatril®

Application

- laboratory and operations
- protection of products
- chemical industry
- medical technology
- pharmaceuticals industry
- electronic industry
- chip processing

Qualities and advantages

- disposable protective glove
- very good sensitivity 2 4
- excellent wearing comfort 2
- reduced perspiration due to special nitrile
- improved grip by roughened fingertips 1
- good chemical resistance 4

747

Article no. Name	742 Dermatril® LR	747 Dermatril® LS
Material	nitrile	nitrile
Description	long cuff, rolled edge, roughened fingertips, powderfree	long cuff, rolled edge, roughened fingertips, powderfree
Length (mm) Thickness (mm)	270 - 290 0,11 ± 0,03	270 - 290 0,11 ± 0,03
Colour Size	blue 7, 8, 9, 10	blue 6, 7, 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 ISO14644-1 clean room class 100 000x	category III EN388 EN374 EN374 000x STERILE R

747

747

Features

- free from natural latex
- free from substances causing allergies, such as thiurames or resin
- meets the requirements of the norm EN 455 for medical examination gloves
- resistant against a multitude of cytostatic drugs
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- fulfills the ESDS norm EN 61340-5-1 (electrostatic discharge)
- virus-resistant according to ASTM 1671:2001
- 742 according to US-FED-STD 209E achieves clean room class 100 (0.5 m/volume)
- 742 according to DIN EN ISO 14644-1 the gloves fulfil ISO Class 5 (0.1 m/volume) and the GMP class is A/B
- 742 clean room packaging
- 742 see page 78
- 747 sterile according to DIN EN 11137

747

1 roughened fingertips
2 ergonomic fit
3 single marking
4 special nitrile

SivoChem®

Application

- laboratory and operations
- chemical industry
- protection of products
- biotechnology
- medical technology
- pharmaceuticals industry
- cleaning and maintenance

Qualities and advantages

- disposable protective glove
- good chemical resistance
- very good sensitivity
- excellent wearing comfort

759

Article no. **Name**	**759** SivoChem® 759
Material	special nitrile
Description	rolled edge, powderfree
Length (mm) **Thickness (mm)**	390 - 410 0,16 ± 0,03
Colour **Size**	blue 7, 8, 9, 10
Classification	category III EN388 EN374 EN374 0000

759

759

Features

- free from natural latex
- free from substances causing allergies, such as thiurames or resin
- 400 mm length
- single removal from hygienic dispenser box

AVAILABLE IN THE 1ST QUARTER 2010

759

1. ergonomic fit
2. special nitrile
3. 400 mm length

Vitoject®

890

Application

- chemical industry
- laboratories
- manufacturing of chemicals
- printing industry
- metal and plastics processing
- recycling and waste disposal
- fire brigades
- cleaning and maintenance
- etching

Qualities and advantages

- very good protection against extremely aggressive and toxic chemicals 2
- very high gas tightness
- solvent-free by eco-friendly injection moulding process
- excellent wearing comfort 4
- very good temperature flexibility 2
- material is highly resistant to ozone and sunlight (UV) 2

Article no. **Name**	**890** Vitoject®
Material	fluorocarbon rubber
Description	rolled edge, smooth, powdered
Length (mm) **Thickness (mm)**	340 -360 0,7 ± 0,1
Colour **Size**	black 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 3101 DFG

890

1 rolled edge
2 material: fluorocarbon rubber
3 very high material tightness
4 wide shape

890

890

Features

- manufactured by Vulkoject process technology
- wide shape makes it possible to wear gloves underneath (heat protection)
- after contamination with specific chemicals a reconditioning, special cleaning process, is possible (in agreement with the KCL-laboratory)
- can be combined with chemical protective clothing
- excellent low degradation
- good resistance against polycyclic aromatic hydrocarbons (petrochemistry)

Butoject®

898

Application

- printing industry
- laboratories
- manufacturing of paints and varnishes
- chemical industry
- metal and plastics processing
- recycling and waste disposal
- cleaning and maintenance
- fire brigades and forces

Qualities and advantages

- very good protection against extremely aggressive chemicals 2
- excellent wearing comfort 4
- very good temperature flexibility 2
- material is highly resistant to ozone and sunlight (UV) 2
- good mechanical resistance 2
- high tightness against gas

Article no. Name	897 Butoject®	898 Butoject®
Material	butyl	butyl
Description	rolled edge, roughened, powdered	rolled edge, smooth, powdered
Length (mm) Thickness (mm)	350-370 0,3 ± 0,05	340-360 0,7 ± 0,10
Colour Size	black 7, 8, 9, 10, 11	black 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 2010 BCI	category III EN388 EN374 EN374 EN421 0110 BCI

898

897

Features

- different material thicknesses available
- excellent low degradation
- 897 good grip by distinct roughened surface 1
- 897 offers protection even when sensitivity is needed
- 898 manufactured by Vulkoject process technology
- 898 gastight (meets NATO requirements)
- 898 wide shape makes it possible to wear gloves underneath
- 898 may be reused for certain chemical groups after a special cleaning process (please consult the KCL-laboratory)
- 898 can be combined with chemical protective clothing

897

1 distinct roughened surface
2 material: butyl
3 low thickness
4 anatomical design

LevoChem®

761

Application

› emergency management
› pharmaceutical industry
› chemical industry
› automotive industry
› aircraft industry

Qualities and advantages

› welded 3-layer sandwich system
› high resistance against a variety of hazardous substance groups
› emergency glove

Article no. **Name**	**761** LevoChem® 761
Material	ethylene-vinyl-alcohol (EVOH), polyethylene
Description	3-layer sandwich system, welded
Length (mm) **Thickness (mm)**	360-400 0,07 ± 0,01
Colour **Size**	black 8, 9, 10, 11
Classification	category III EN388 EN374 EN374 1000 ABCDEFGHIJKL

761

1 3-layer sandwich system
2 material EVOH
3 400 mm length

761

Features

› can be worn underneath a glove, e. g. chemical protection
› ambidextrous

AVAILABLE IN THE 1ST QUARTER 2010

761

Sahara®, RavoMech®

101

Application

- working with oily and wet parts
- woodworks and gardening
- metalworking and mechanical engneering
- construction industry
- assembly and transportation work
- fork lift work
- automotive industry
- metal and plastics processing

Qualities and advantages

- good resistance to mechanical damage 3
- moisture-repellent 3
- good fit 4 5
- very breathable 1 5
- manufacturing method and ingredients are skin friendly 5
- allows longer working without showing signs of fatigue 4 5
- additional wrist protection 2

Article no. Name	100 Sahara®	101 Sahara® Plus	102 Sahara® Top	121 RavoMech® 121
Material	nitrile, cotton	nitrile, cotton	nitrile, cotton	nitrile, cotton
Description	cotton liner, knit wrist, palm coated	tight-fitting liner, knit wrist, palm coated	tight-fitting liner, knit wrist, palm coated, deeply coated	two-layer cotton liner, palm coated
Length (mm) Thickness (mm)	235 - 265 0,8 ± 0,05	240 - 270 0,8 ± 0,05	240 - 270 0,8 ± 0,05	260 - 290 1,45 ± 0,20
Colour Size	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	yellow 8, 9, 10
Classification	category II EN388 3111	category II EN388 3111	category II EN388 3111	category II EN388 3122

100

1. palm coated
2. knit wrist
3. special nitrile
4. ergonomic fit
5. high-quality cotton liner

101

102

Features

- free from plasticisers 3
- free from substances causing allergies, such as thiurames and thiourea
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- Öko-Tex standard 100
- leading glass manufacturer confirms surface compatibility for glass processing
- 100 fulfills the ESDS norm EN 61340-5-1 (electrostatic discharge)
- 121 two-layer cotton liner

CONFIDENCE IN TEXTILES
Tested for harmful substances
according to Oeko-Tex Standard 100
No Z1.0.7555 FI Hohenstein

CamaStretch®, Sahara®


201

Application

› metalworking and mechanical engineering
› metal and plastics processing
› working with oily and wet parts
› automotive industry
› woodworks and gardening
› construction industry
› assembly and transportation works
› lift truck works

Qualities and advantages

› very good grip and mechanical resistance 2
› very good fit due to spandex content 1
› very breathable 1 4
› moisture-repellent 2
› allows longer working without showing signs of fatigue 2 1
› additional wrist protection 3

Article no. Name	120 CamaStretch®	201 Sahara® Premium
Material	nitrile, cotton, spandex	nitrile, cotton
Description	tight-fitting, stretchable liner knit wrist, palm coated	tight-fitting liner, knit wrist, palm coated
Length (mm) **Thickness (mm)**	235 - 265 0,90 ± 0,05	240-280 1,40 ± 0,15
Colour **Size**	curry 7, 8, 9, 10	yellow 7, 8, 9, 10
Classification	category II EN388 2111	category II EN388 EN407 2111 x1xxxx

120


1 stretchable liner
2 special nitrile
3 knit wrist
4 palm coated

120


201


Features

› free from substances causing allergies, such as thiurames and thiourea
› manufacturing method and ingredients are neutral to the skin 2
› glove surface free from silicone (lacquer indifference, test method automotive industry)
› 120 Öko-Tex Standard 100
› 201 seamless cotton liner

CONFIDENCE IN TEXTILES
Tested for harmful substances
according to Oeko-Tex Standard 100
No Z1.0.7555 FI Hohenstein

Monsun®, Taifun

105

Application

- assembly and transportation works
- manufacturing of small parts
- warehouse and packaging works
- metal processing
- precision engineering and electronical industry
- automotive industry
- construction industry

Qualities and advantages

- moisture-repellent 1
- very breathable 2
- excellent sensitivity and tactual sensation 3
- manufacturing method and ingredients are skin friendly 1
- allows longer working without showing signs of fatigue 3
- additional wrist protection

Artikel-Nr. Name	105 Monsun®	106 Monsun®	151 Taifun
Material	nitrile, cotton	nitrile, cotton	nitrile, cotton
Description	tight-fitting liner, knit wrist, palm coated	cotton liner, knit wrist, palm coated	cotton liner, knit wrist, palm coated
Length (mm) Thickness (mm)	235 - 265 0,75 ± 0,05	235 - 265 0,75 ± 0,05	235 - 265 0,67 ± 0,05
Colour Size	curry 7, 8, 9, 10	curry 7, 8, 9, 10	curry 7, 8, 9, 10
Classification	category II EN388 2111	category II EN388 2111	category II EN388 1111

105

1 special nitrile
2 palm coated
3 close-fitting shape
4 knit wrist

106

Features

- free from substances causing allergies, such as thiurames and thiourea
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- available in different designs
- 105 particularly close-fitting for works where sensitivity is needed
- 105 Öko-Tex standard 100

151

CONFIDENCE IN TEXTILES
Tested for harmful substances
according to Oeko-Tex Standard 100
No Z1.0.7555 FI Hohenstein

Gobi®

109

Application

› metalworking and mechanical engineering
› automotive industry
› packaging and transportation works
› construction industry
› working with oily and wet parts
› metal handling and processing
› plastics industry

Qualities and advantages

› excellent mechanical resistance 1
› moisture-repellent 1
› good grip when handling wet parts 1 4
› manufacturing method and ingredients skin friendly 1
› allows longer working without showing signs of fatigue 1 2
› additional forearm protection by longer design
› high-quality cotton liner, which is skin friendly 3

Article no. Name	109 Gobi®	112 Gobi®
Material	nitrile, cotton	nitrile, cotton
Description	cotton liner, cuff, fully coated	cotton liner, cuff, fully coated
Length (mm) Thickness (mm)	290 - 310 0,95 ± 0,05	390 - 410 0,95 ± 0,05
Colour Size	yellow 7, 8, 9, 10	yellow 9, 10
Classification	category II EN388 3111	category II EN388 3111

112

1 special nitrile
2 ergonomic fit
3 cotton liner
4 surface structure

109

112

Features

› free from substances causing allergies, such as thiurames and thiourea
› wide cuff for quick donning and doffing
› available in different lengths

Vielzweck-Petroben


131

Application

- heavy industry
- sewerage work
- working with oily and greasy parts
- construction industry
- plastics processing
- sewage plants

Qualities and advantages

- excellent mechanical resistance 1 2
- moisture-repellent
- fully coated
- skin friendly wearing comfort 2
- non-slip when handling oily and greasy parts 1

Article no. Name	129 Vielzweck-Petroben	131 Vielzweck-Petroben	132 Vielzweck-Petroben	133 Vielzweck-Petroben
Material	PVC, cotton	PVC, cotton	PVC, cotton	PVC, cotton
Description	cotton liner, cuff, fully coated, roughened	cotton liner, cuff, fully coated, roughened	cotton liner, cuff, fully coated, roughened	cotton liner, cuff, fully coated, smooth
Length (mm) **Thickness (mm)**	260 - 280 1,25 ± 0,20	340 - 360 1,25 ± 0,20	390 - 410 1,25 ± 0,20	590 - 610 1,25 ± 0,20
Colour **Size**	reddish brown 9, 10	reddish brown 9, 10	reddish brown 9, 10	reddish brown 9, 10
Classification	category II EN388 3121	category II EN388 3121	category II EN388 3121	category II EN388 4121

133

132

Features

- available in different designs
- PVC in high-grade KCL-quality

133

1. polyvinylchloride
2. cotton liner
3. very thick
4. anatomical fit

TevuMech®

Application

- maintenance and repair work
- refineries
- petrochemistry
- metal processing
- mechanical engineering
- tool making

Qualities and advantages

- good grip when handling greasy and oily parts
- excellent mechanical resistance
- very durable
- additional wrist protection

766

Article no. **Name**	**766** TevuMech® 766
Material	nitrile, nitrile foam, cotton
Description	cotton liner, knit wrist Multi-layer composition
Length (mm) **Thickness (mm)**	225 - 275 2,15 ± 0,10
Colour **Size**	yellow/dark blue 7, 8, 9, 10
Classification	category II EN388 2111

766

1. close-fitting shape
2. multi-layer system made of nitrile and nitrile foam
3. palm coated
4. knit wrist

766

766

Features

- 2-layer system
- high-quality cotton liner
- free from natural latex
- ergonomic fit

Nitex®


319

Application

- working with oily and greasy parts
- forestry and agriculture
- construction industry
- storage and packaging
- metalworking and mechanical engineering
- manufacturing of cast parts
- road construction
- recycling and waste disposal

Qualities and advantages

- moisture-repellent 1 3
- excellent mechanical resistance 1 3
- heat/cold insulation 1 3
- cotton liner, which is skin friendly
- breathable 5

Article no. Name	177 Nitex® Grip	309 Nitex®	318 Nitex®	319 Nitex®
Material	nitrile, cotton	nitrile, cotton	nitrile, cotton	nitrile, cotton
Description	terry cloth liner, canvas cuff, palm coated	cotton liner, canvas cuff, fully coated	cotton liner, knit wrist, palm coated	cotton liner, canvas cuff, palm coated
Length (mm) Thickness (mm)	250 - 270	250 - 270 1,6 ± 0,25	240 - 260 1,6 ± 0,25	250 - 270 1,6 ± 0,25
Colour Size	blue 9, 10	blue 9, 10	blue 9, 10	blue 9, 10
Classification	category II EN388 4232	category II EN388 4111	category II EN388 4111	category II EN388 4111

318

1 very thick
2 knit wrist
3 special nitrile
4 ergonomic fit
5 palm coated

177

309

Features

- free from substances causing allergies, such as thiurames and 1,3 diphenyl guanidine
- 177 extremely roughened palm
- 177 slight to medium puncture resistance
- 309 breatable due to safety cuff

Man at Work®, DiraCold®, DiraMech®

301

Application

› metalworks
› storage and packaging
› forestry and agriculture
› fork lift works
› shipyards
› construction industry
› waste sorting
› metal processing

Qualities and advantages

› heat/cold flexibility
› high flexibility in comparison with leather gloves
› robust workmanship 3 4
› very breathable 2
› moisture-repellent
› good grip when handling slippery parts

Article no. Name	301 Man at Work®	302 DiraCold® 302	303 DiraMech® 303
Material	nitrile, cotton	nitrile, cotton, fleece inlay	nitrile, cotton
Description	textile fabric with special coating, canvas cuff, knuckle protection	textile fabric with special coating, canvas cuff, knuckle protection	textile fabric with special coating, canvas cuff, knuckle protection, fully coated
Length (mm) Thickness (mm)	260 - 280 1,25 ± 0,10	260 - 280 2,90 ± 0,10	260 - 280 1,25 ± 0,10
Colour Size	black/cream 8, 9, 10, 11	black/cream 8, 9, 10, 11, 12	black/cream 9, 10, 11
Classification	category II EN388 2111	category II EN388 to -20°C 2111	category II EN388 2111

301

1 cuff
2 textile back of hand
3 knuckle protection
4 fabric with nitrile coating

302

Features

› washable
› free from Chromate VI
› elastic on back of hand
› 301, 302 very breathable
› 302 with warming fleece inlay
› 302 see page 99
› 303 fully coated

303

Worktril®

310

Application

› storage and packaging
› metalworks
› fork lift works
› forestry and agriculture
› construction industry
› shipyards
› metal processing
› waste sorting

Qualities and advantages

› high flexibility in comparison with leather gloves
› heat/cold flexibility
› very breathable 2
› robust workmanship 3 4
› good grip when handling slippery parts
› moisture-repellent

Article no. Name	310 Worktril®	315 Worktril® W
Material	nitrile, cotton jersey	nitrile, cotton jersey
Description	nitrile coated fabric, canvas cuff, palm coated	nitrile coated fabric, fleece inlay, canvas cuff, palm coated
Length (mm) Thickness (mm)	240 - 260 1,2 ± 0,1	260 - 280
Colour Size	brown 8, 9, 10, 11	brown 8, 9, 10, 11
Classification	category II EN388 3111	category II EN388 to -20 °C 3111

310

1 cuff
2 textile back of hand
3 knuckle protection
4 fabric with nitrile coating

310

Features

› washable
› free from Chromate VI
› elastic on back of hand
› 315 fleece inlay
› 315 suitable for down to -20 °C
› 315 see page 99

315

Grip-Tex®

445

Application

- glass industry
- beverage industry
- steam blasting works
- forestry and agriculture
- waste disposal
- erection of scaffolding
- working with wet parts

Qualities and advantages

- excellent grip 1 5
- very breathable 2
- slight to medium puncture resistance 1 5
- slight to medium cut resistance 1 5
- good low temperature flexibility 5

Article no. Name	445 Grip-Tex®	447 Grip-Tex®
Material	natural latex, cotton	natural latex, cotton
Description	cotton liner, knit wrist, palm coated, strongly roughened	cotton liner, cuff, fully coated, strongly roughened
Length (mm) Thickness (mm)	245 - 265 1,8 ± 0,2	290 - 310 1,8 ± 0,2
Colour Size	yellow/orange 8, 9, 10	yellow/orange 8, 9, 10
Classification	category II EN388 4242	category II EN388 2221

445

1 shrink-roughened surface
2 palm coated
3 knitted wrist
4 ergonomic fit
5 cotton liner with latex coating

447

447

Features

- different designs
- 447 moisturetight

Camatex

450

Application

- food industry
- construction industry
- harvesting
- cleaning and steam blasting works
- canteen kitchens
- erection of scaffolding
- beverage industry

Qualities and advantages

- good grip when handling wet parts 1 3
- good low temperature flexibility 3
- high elasticity 3
- working without fatigue 2 3
- fully coated 3

Article no. / Name	450 Camatex	451 Camatex
Material	natural latex, cotton	natural latex, cotton
Description	cotton liner, fully coated, cuff, smooth	cotton liner, fully coated, cuff, roughened
Length (mm) / Thickness (mm)	290-310 / 1,38 ± 0,13	290-310 / 1,38 ± 0,13
Colour / Size	blue / 7, 9, 10	blue / 7, 8, 9, 10
Classification	category II EN388 1221	category II EN388 2131

451

1 anti-skid surface
2 ergonomic fit
3 cotton liner with latex coating

451

Features

- approved for food handling
- waterproof

450

RewoMech®, RewoCold®

640

Application

- metal and plastics processing
- metalworking and mechanical engineering
- automotive and supply industry
- cleaning and maintenance
- metal processing
- assembly and transportation works
- working with oily and wet parts

Qualities and advantages

- breathable artificial leather 1
- no material hardening 1
- absorbent surface profile for a sure grip 1
- very good fit
- good dexterity
- high economic efficiency due to reusability after washing

Article no. Name	640 RewoMech® 640	641 RewoMech® 641	643 RewoMech® 643	644 RewoCold® 644
Material	artificial leather, spandex	artificial leather spandex, Tyvek®	artificial leather	artificial leather, felt
Description	artificial leather palm, stretch fabric, Velcro® fastener	artificial leather palm, moisture barrier palm, Velcro® fastener	artificial leather palm, cuff	artificial leather palm, moisture barrier cold protection inlay, cuff
Length (mm) Thickness (mm)	215 - 270 0,7 ± 0,10	215 - 270 0,85 ± 0,05	215 - 280 0,7 ± 0,10	250 - 310 1,8 ± 0,15
Colour Size	grey/black 7, 8, 9, 10, 11, 12	grey/black 7, 8, 9, 10, 11, 12	grey/black 7, 8, 9, 10, 11, 12	grey/black 7, 8, 9, 10, 11, 12
Classification	category II EN388 2121	category II EN388 2121	category II EN388 2121	category II EN388 2121 to -20°C

644

1 artificial leather
2 cuff
3 warming lining

641

643

Features

- washable
- free from Chromate VI
- free from pesticides
- free from substances causing allergies, such as thiurames or benzothiazoles
- terry cloth material for sweat absorption
- 640, 641 Velcro® fastener for a sure glove fit
- 643, 644 cuff for quick donning and doffing
- 641, 644 with one-sided/two-sided moisture barrier
- 644 with warming fleece inlay
- 644 see page 101
- 646 with puncture and cut resistance, see page 74

Camapur® Comfort


619

Application

- assembly works
- electronics industry
- precision mechanics
- automotive and supply industry
- protection of products
- metal and plastics processing
- storage and commission works

Qualities and advantages

- very good sensitivity 2 4
- excellent fit 1 4
- very breathable 1
- excellent grip when handling greasy and oily parts 2 3
- high mechanical resistance 1 2
- allows working without user fatigue 1 4
- less sensitive to soiling 1 2

Article no. Name	616 Camapur® Comfort	617 Camapur® Comfort	619 Camapur® Comfort	626 Camapur® Comfort
Material	polyurethane, polyamide	polyurethane, polyamide	polyurethane, polyamide	polyurethane, polyamide
Description	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, fingertips coated	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, palm coated, deeply coated
Length (mm) **Thickness (mm)**	220 - 260 1,0 ± 0,2	220 - 260 1,0 ± 0,2	220 - 260 1,0 ± 0,2	220 - 260 1,0 ± 0,2
Colour **Size**	white 6, 7, 8, 9, 10, 11	white 7, 8, 9, 10	white/grey 6, 7, 8, 9, 10, 11	black 7, 8, 9, 10
Classification	category II EN388 2131	category II EN388 2130	category II EN388 2131	category II EN388 2131

626

1. partly coated black polyamide liner
2. black PU-coating over the finger knuckles
3. palm structure
4. ergonomic close-fitting shape

626

Features

- free from plasticisers
- free from the allergenic substances thiurames and dithiocarbamates
- skin friendly by ingredients that are neutral to the skin
- washable
- marked according to size with different colours on the wristband

616

GemoMech®


665

Application

› assembly works
› automotive and supply industry
› metal and plastics processing
› storage and commission works
› maintenance and repair work

Qualities and advantages

› good grip when handling greasy and oily parts
› very good touch sensation
› flexible
› excellent mechanical resistance
› very durable

Article no. **Name**	**665** GemoMech® 665
Material	nitrile, polyurethane, polyamide
Description	dots (nitrile), PU/nitrile foam coating
Length (mm) **Thickness (mm)**	215 - 270 1,30 ± 0,20
Colour **Size**	black/grey 7, 8, 9, 10, 11
Classification	category II EN388 3121

665

665

665

Features

› washable
› marked according to size with different colours on the wristband
› ergonomic fit

1. seamless liner
2. multi-layer system made of PU and nitrile foam with nitrile dots
3. water- and oil-repellent palm coating

FiroMech®

629

Application

- plastics processing
- automotive industry
- protection of products
- precision engineering
- electrical industry
- metal processing

Qualities and advantages

- without irritating seams
- excellent safe grip
- very good sensitivity
- excellent fit
- allows working without user fatigue

Article no. **Name**	**629** FiroMech® 629
Material	polyurethane, polyamide
Description	seamless liner, knit wrist, palm coated
Length (mm) **Thickness (mm)**	205 - 255 0,70 ± 0,10
Colour **Size**	white 6, 7, 8, 9, 10
Classification	category II EN388 3010

629

1. partly coated polyamide liner
2. PU coating over the fingertips
3. ergonomic close-fitting shape

629

629

Features

- especially sensitive 18gg liner
- palm coated
- glove surface free from silicone (lacquer indifference, test method automotive industry)

RobuMech®

561

Application

- assembly works
- precision engineering
- electrical industry
- automotive and supply industry
- protection of products

Qualities and advantages

- excellent grip when handling greasy and oily parts
- very good sensitivity
- excellent fit
- high mechanical resistance
- allows working without user fatigue
- very breathable

Article no. Name	560 RobuMech® 560	561 RobuMech® 561
Material	polyurethane (water-based), polyamide	polyurethane (water-based), polyamide
Description	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, palm coated
Length (mm) Thickness (mm)	210 - 250 0,70 ± 0,10	215 - 265 0,80 ± 0,10
Colour Size	white 7, 8, 9, 10, 11	white/blue 7, 8, 9, 10
Classification	category II EN388 3121	category II EN388 3021

561

1. PU-coating over the fingertips
2. ergonomic close-fitting shape
3. partly coated polyamide liner

561

Features

- water-based polyurethane for improved safety of the glove wearer
- washable
- marked according to size with different colours on the wristband
- 561 especially sensitive 18gg liner

AVAILABLE IN THE 1ST QUARTER 2010

560

RewoSpec®

646

Application

› maintenance depots
› gardening and landscaping
› forestry industry
› agriculture
› plastics and sheet processing

Qualities and advantages

› absorbent surface profile for a sure grip
› breathable artificial leather
› good dexterity
› very good fit
› no material hardening
› high economic efficiency due to reusability after washing

Article no.	**646**
Name	RewoSpec® 646
Material	artificial leather, spandex, para-aramid
Description	Velcro® fastener, cut and puncture protection fabric
Length (mm)	220 - 270
Thickness (mm)	1,10 ± 0,1
Colour	grey/black
Size	7, 8, 9, 10, 11
Classification	category II EN388 2344

646

1 Velcro® fastener
2 artificial leather
3 spandex

646

Features

› washable
› free from Chromate VI
› free from pesticides
› free from the allergenic substances thiurames and dithiocarbamates
› puncture and cut protection fabric made of para-aramide at the palm and back of the hand
› not to be used with thin hollow needles, needles and syringes

646

AVAILABLE IN THE 1ST QUARTER 2010

WaveBreaker®


633

Application

› bodyworks
› mechanical engineering, shipbuilding, aircraft construction
› rotor blade production
› automotive industry
› working with low frequency vibrating machines
› building trade (vibrating plate)

Qualities and advantages

› module version: seperate outer glove
› inner glove with anti-vibration inlay 1
› absorption of vibrations 1
› reduction of hand-arm-vibration syndrom
› sure grip due to artificial leather palm 2

Article no. Name	033 WaveBreaker® (outer glove)	633 WaveBreaker®
Material	artificial leather, Cordura®	artificial leather, elastomer, Cordura®, Tyvek®, Outlast®
Description	artificial leather palm, Velcro® fastener, cuff	module version, waterproof inner glove with anti-vibration inlay, outer glove: artificial leather palm, Velcro® fastener, cuff
Length (mm) Thickness (mm)	320-340	320-340
Colour Size	black 9, 10	black 9, 10
Classification		category II EN388 2121

633

1 anti vibration inlay
2 artificial leather
3 Velcro®
4 Tyvek® inlay
5 Outlast® material

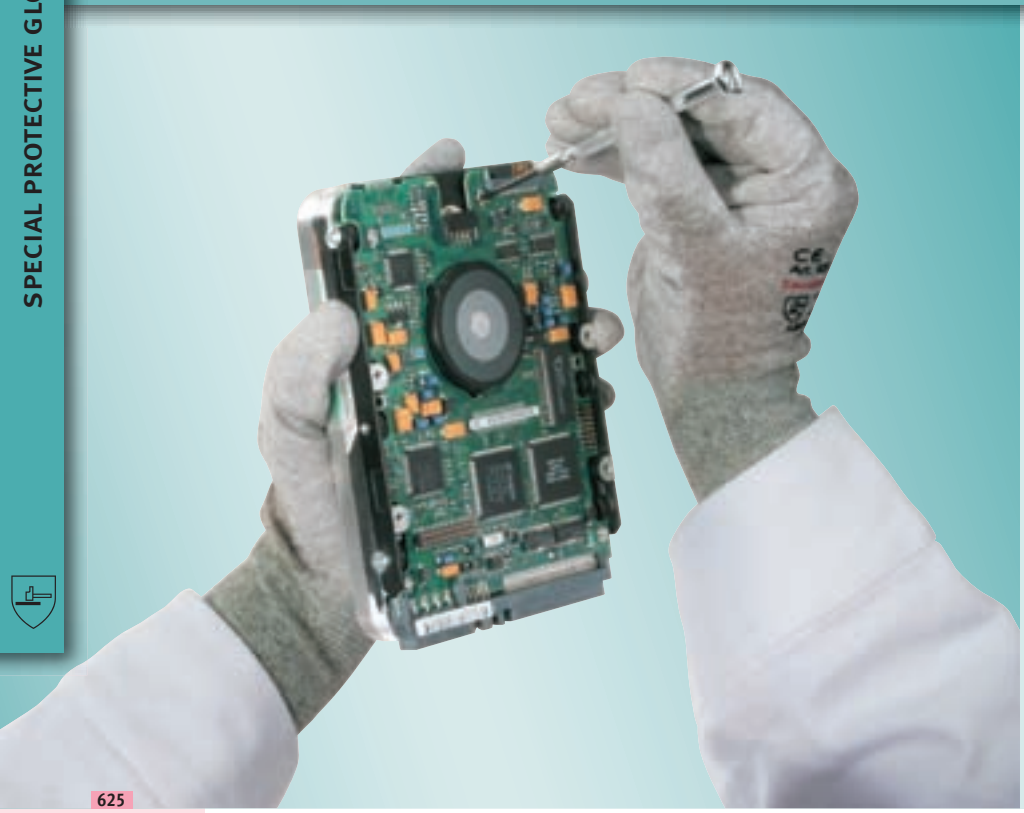
633

633

Features

› ideal damping properties 32 - 200 Hz (see page 31)
› no slipping of damping inlay
› very economic due to replaceable outer glove
› protection function for more than the wrist
› sure grip due to artificial leather palm
› good climate control due to Outlast® material 5
› free from Chromate VI
› moisture-repellent
› 033 outer glove is available separately

Camapur® Comfort Antistatic



625

Application

- assembly works
- electrical industry
- protection of products
- automotive and supply industry
- chip processing
- precision electronics

Qualities and advantages

- very breathable 1
- excellent fit
- very good sensitivity 2
- good grip when handling oily parts 2
- roughened PU-coating 2

Article no. Name	623 Camapur® Comfort Antistatic	624 Camapur® Comfort Antistatic	625 Camapur® Comfort Antistatic
Material	polyamide, copper	polyurethane, polyamide, copper	polyurethane, polyamide, copper
Description	seamless liner, knit wrist, uncoated	seamless liner, knit wrist, fingertips coated	seamless liner, knit wrist, palm coated
Length (mm) **Thickness (mm)**	220 - 260 0,6 ± 0,1	220 - 260 0,6 ± 0,1	220 - 260 0,8 ± 0,1
Colour **Size**	cream 7, 8, 9, 10	cream 6, 7, 8, 9, 10	cream 6, 7, 8, 9, 10
Classification	category II EN388 EN1149 2130	category II EN388 EN1149 2130	category II EN388 EN1149 2131

624

1. partly coated polyamide liner
2. fingertips coated
3. sleeve-band
4. marked according to size by different colours on the wristband

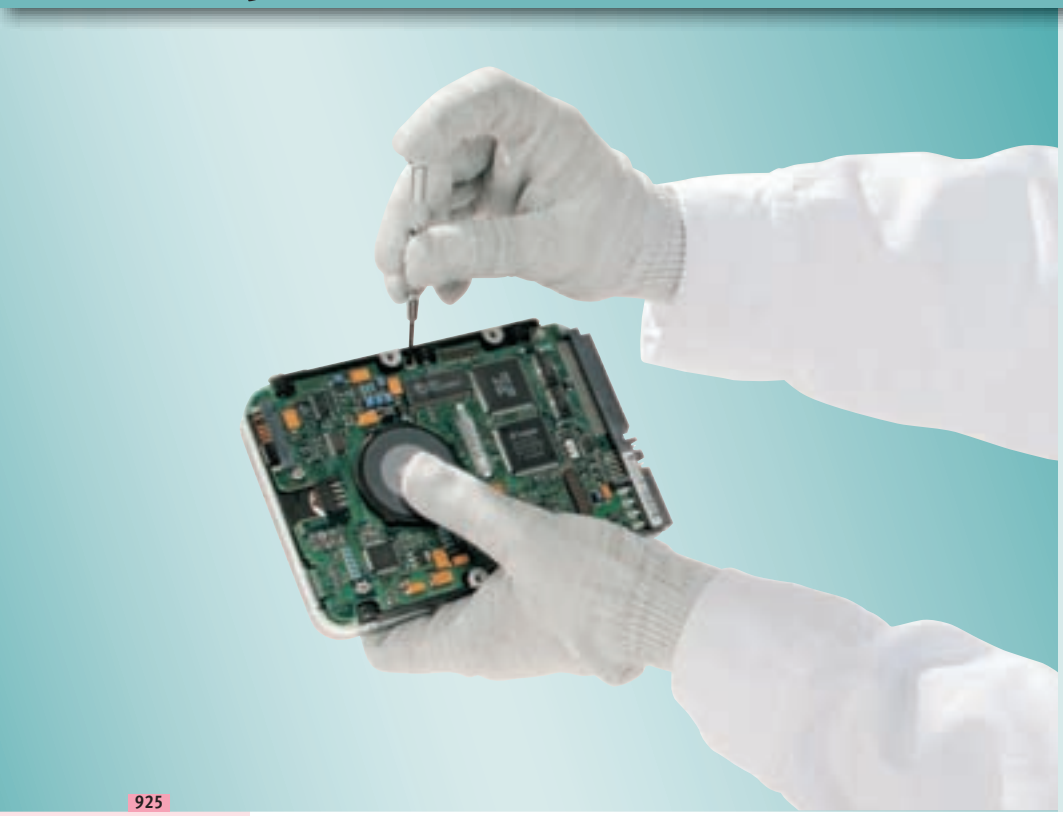
624

Features

- value according to EN 1149 part 1 ‹ 10^6 surface resistance
- meets the requirements of EN 61340 discharge capacity
- free from plasticisers
- skin friendly by ingredients that are neutral to the skin
- washable
- marked according to size by different colours on the wristband

623

PolyNox® ESD



925

Application

- precision electronics
- protection of products
- electrical industry
- automotive and supply industry
- assembly work
- maintenance of electronic devices

Qualities and advantages

- very good electrostatic discharge capacity 4
- excellent fit
- no disturbing seams
- breathable
- good, sure grip 2
- very good sensitivity

Article no. Name	925 PolyNox® ESD	926 PolyNox® ESD N
Material	polyamide, polyester, special steel	polyamide, polyester, special steel, PVC
Description	seamless liner, knit wrist	seamless liner, knit wrist, with PVC dots
Length (mm) Thickness (mm)	225 - 285 1,25 ± 0,05	225 - 285 1,95 ± 0,05
Colour Size	silver-grey 7, 8, 9, 10	silver-grey/yellow 7, 8, 9, 10
Classification	category II EN 388 EN 1149 2140	category II EN 388 EN 1149 2140

926

925

926

Features

- meets the ESDS Norm EN 61340-5-1 (discharge capacity)
- value according to EN 1149 part 1 < 10^6 surface resistance
- washable
- individual production with customer logo possible
- seamless, round-knitted liner 1

1 seamless liner
2 dots on the palm
3 ergonomic fit
4 special steel proportion for good antistatic properties

Camapur® Comfort R, Dermatril® LR

610

Application

- pharmaceutical industry
- working in clean rooms
- electrical industry
- precision engineering
- automotive and supply industry
- protection of products
- chip processing

Qualities and advantages

- 610 very breathable
- excellent fit 1
- excellent sensitivity 1
- very durable 1
- clean room packaging

Article no. Name	610 Camapur® Comfort R	742 Dermatril® LR
Material	polyurethane, polyamide	nitrile
Description	seamless liner, knit wrist, palm coated	long cuff, rolled edge, roughened fingertips, powderfree
Length (mm) Thickness (mm)	220 - 260 0,8 ± 0,1	270 - 290 0,11 ± 0,03
Colour Size	white 7, 8, 9, 10	blue 7, 8, 9, 10
Classification	category II EN388 ISO14644-1 2131	category III EN388 EN374 EN374 ISO14644-1 000x

610

610

742

Features

- according to US-FED-STD 209E the clean room class is 100 (0.5 m/volume)
- according to ISO 14644-1 the gloves reach ISO Class 5 (0.1 m/volume) and the GMP-class is A/B
- 610 free from plasticisers
- 610 skin friendly due to ingredients that are neutral to the skin
- 610 marked according to size by different colours on the wristband
- 742 virus-resistant according to ASTM 1671:2007
- 742 disposable chemical protective glove
- 742 free from natural latex
- 742 free from substances causing allergies, such as thiurames and resin
- 742 glove surface free from silicone (lacquer indifference, test method automotive industry)
- 742 see page 53

1 partly coated polyamide liner
2 sleeve-band
3 palm structure

ISO 14644-1
clean room class 100

PolyTRIX®, DunoMech®

912

Application

› packaging and commission works
› handling of cardboard packagings and packaging band
› handling of plastic parts
› simple assembly works

Qualities and advantages

› excellent fit 3
› high wearing comfort 1
› breathable
› without irritating seams
› good, sure grip 2
› excellent fine touch

Article no. Name	911 PolyTRIX®	912 PolyTRIX® N	986 DunoMech® 986
Material	polyamide, cotton	polyamide, cotton, PVC	polyamide, cotton, PVC
Description	light knitted, knit wrist	light knitted, knit wrist, with PVC dots	light knitted, knit wrist, with PVC dots, without 3 fingertips
Length (mm) Thickness (mm)	230 - 270	230 - 270	230 - 270 1,75 ± 0,25
Colour Size	white 7, 8, 9, 10	white/yellow 6, 7, 8, 9, 10, 11	white/yellow 7, 8, 9, 10
Classification	category II EN388 2140	category II EN388 2140	category II EN388 2140

912

1 seamless liner
2 dots on the palm
3 ergonomic fit
4 marked according to size by different colours on the wristband

911

Features

› seamless, round-knitted liner
› individual manufacturing with customer's logo possible
› washable
› marked according to size with different colours on the wristband
› 911 especially economic as gloves are ambidextrous
› 986 thumb, index and middle finger without fingertips

986

PolyMEX®, CuttoTRIX®

921

Application

- quality control
- paper industry
- transportation and logistics
- packaging and commission works
- handling of cardboard packagings and packaging band
- handling of plastic parts
- simple assembly works

Qualities and advantages

- high wearing comfort 1
- excellent fit 3
- good, sure grip 2
- breathable
- without irritating seams
- excellent fine touch

Article no. Name	916 PolyMEX® N	921 CuttoTRIX®	922 CuttoTRIX® N
Material	polyamide, PVC	polyamide, cotton	polyamide, cotton, PVC
Description	medium knitted, knit wrist, with PVC dots	medium knitted, knit wrist	medium knitted, knit wrist, with PVC dots
Length (mm) Thickness (mm)	230 - 270	230 - 270	230 - 270
Colour Size	white/yellow 7, 8, 9, 10	white 7, 8, 9, 10	white/yellow 7, 8, 9, 10
Classification	category II EN388 3140	category II EN388 1140	category II EN388 2140

921

1 seamless liner
2 mixed fibres
3 ergonomic fit
4 marked according to size by different colours on the wristband

916

Features

- washable
- seamless, round-knitted liner
- individual manufacturing with customer's logo possible
- marked according to size with different colours on the wristband

922

PolyTRIX®

910

Application

› packaging and commission works
› simple maintenance works
› simple industrial works
› simple assembly works

Qualities and advantages

› excellent fit
› hand cushioning comfort 3
› breathable
› no irritating seams
› good, sure grip 1
› version without PVC dots is ambidextrous
› less sensitive to soiling 2
› excellent fine touch

Article no. Name	910 PolyTRIX® B	914 PolyTRIX® BN	1914 PolyTRIX® BN FKV	909 PolyTRIX® BKN
Material	polyamide	polyamide, PVC	polyamide, PVC	polyamide, para-aramid, PVC
Description	light knitted, knit wrist	light knitted, knit wrist, with PVC dots	light knitted, with PVC dots, sealed fingertips	light knitted, knit wrist, with PVC dots
Length (mm) **Thickness (mm)**	230 - 270	230 - 270	230 - 270	230 - 270
Colour **Size**	blue 6, 7, 8, 9, 10	blue/yellow 7, 8, 9, 10, 11	blue/yellow 8, 9, 10	blue/yellow 7, 8, 9, 10
Classification	category II EN388 2140	category II EN388 1140	category II EN388 1140	category II EN388 2240

909

1 dots on the palm
2 dark colour
3 seamless liner
4 mixed fibres

1914

Features

› individual manufacturing with customer's logo possible
› washable
› marked according to size with different colours on the wristband
› 909 good cut resistance 4
› 910 especially economic as gloves are ambidextrous
› 1914 better grip and mechanical resistance in the area of the fingertips

909

PuroCut®, Camapur® Cut

620

Application

- assembly works with medium cut risks
- metal sheet processing
- processing of synthetic material profiles

Qualities and advantages

- high cut protection
- good grip when handling smooth or moist parts
- good dexterity
- glove surface free from silicone (lacquer indifference, test method automotive industry)

Article no. Name	521 PuroCut® 521	618 Camapur® Cut	620 Camapur® Cut	627 Camapur® Cut
Material	nitrile foam, HPPE fibre	polyurethane, HPPE fibre	polyurethane, HPPE fibre	polyurethane, HPPE fibre
Description	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, palm coated
Length (mm) Thickness (mm)	225 - 275 1,75 ± 0,10	220 - 260 1,2 ± 0,1	220 - 260 1,2 ± 0,1	220 - 260 1,2 ± 0,1
Colour Size	black/white 7, 8, 9, 10, 11	white 6, 7, 8, 9, 10, 11	white/grey 6, 7, 8, 9, 10, 11	grey/black 6, 7, 8, 9, 10, 11, 12
Classification	category II EN388 4343	category II EN388 4342	category II EN388 4342	category II EN388 4341

521

1. coating over the fingertips
2. coating with nitrile foam
3. ergonomic fit

627

521

Features

- free from substances causing allergies, such as thiurames or benzothiazoles
- skin friendly by ingredients that are neutral to the skin
- washable
- marked according to size by different colours on the wristband
- 521 coating with nitrile foam
- 521/627 black/dark grey and less sensitive to soiling
- 618, 620, 627 PU-coating

K-NIT® Glas

861

Application

› assembly works with cut risks, e.g. changing knives at paper cutting machines
› glass industry, e.g. flat glass processing
› paint shops, e.g. preparatory works

Qualities and advantages

› high wearing comfort 2
› good grip
› comfortable temperature equalisation 1
› moisture-repellent, e.g. oily parts
› good cut resistance combined with mechanical barrier

Article no. **Name**	**861** K-NIT® Glas
Material	nitrile, para-aramid, cotton
Description	knitted, knit wrist, palm coated
Length (mm) **Thickness (mm)**	230 - 270
Colour **Size**	yellow/yellow 7, 8, 9, 10
Classification	category II EN388 3342

861

1 palm coating
2 cotton share
3 close-knitted liner
4 sizes marked by different colours on the wristband

861

861

Features

› marked according to size by different colours on the wristband
› approved for food handling
› glove surface free from silicone (lacquer indifference, test method automotive industry)
› authorised by one of Europe's leading glass processing companies
› para-aramid fibres for high cut protection
› cotton cuff

SivaCut®, K-TEX

930

Application

- glass and beverage industry, e.g. sorting out broken glass in breweries, handling of wet glass parts
- laboratories, e.g. handling of non-contaminated Erlenmeyer flasks, fitting together glass lines, disposal of broken glass
- waste disposal industry, e.g. working at sorting machines

Qualities and advantages

- good grip, especially with moist parts 2
- very good flexibility and high wearing comfort 3
- good puncture resistance regarding metal (not syringes) and glass 1
- allows working without user fatigue 4

Article no. Name	830 SivaCut® 830	930 K-TEX®
Material	natural latex, para-aramide, glass, steel	natural latex, para-aramid
Description	medium knitted, knit cuff, deep immersion	medium knitted, knit wrist, palm coated
Length (mm) Thickness (mm)	230 - 270	230 - 270
Colour Size	blue/yellow-grey 7, 8, 9, 10	blue/yellow 7, 8, 9, 10
Classification	category II EN388 2543	category II EN388 3444

830

1 shrink-roughened coating
2 coating extends over the knuckles
3 ergonomic fit

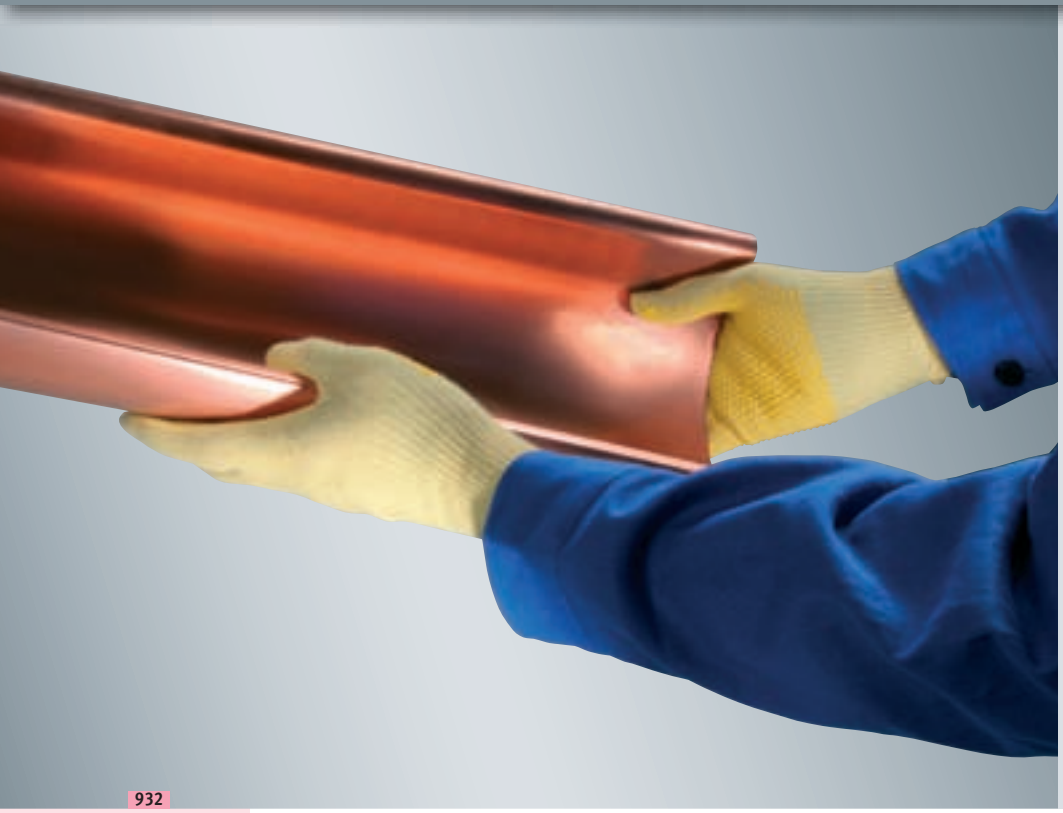
830

830

Features

- 100 % para-aramid
- good cut resistance combined with a mechanical barrier
- 830 very high cut protection (level 5)
- 930 breathable

K-TRIX®, K-MEX®



932

Application

- steel and metal processing, e.g. cutting metal sheets to size
- plastics processing, e.g. deburring of door coverings
- electronics industry, e.g. building and assembly of switchboards
- chemical industry, e.g. as under glove

Qualities and advantages

- good cut resistance 3
- high wearing comfort 1
- good grip when handling smooth or moist parts 2
- heat insulation for low temperatures 3
- wrist protection 4
- excellent fine touch

Article no. Name	931 K-TRIX®	932 K-TRIX® N	933 K-MEX®	934 K-MEX® N
Material	para-aramid	para-aramid, PVC	para-aramid	para-aramid, PVC
Description	light knitted, knit wrist	light knitted, knit wrist, with PVC dots	medium knitted, knit wrist	medium knitted, knit wrist, with PVC dots
Length (mm) **Thickness (mm)**	230 - 270	230 - 270	230 - 270	230 - 270
Colour **Size**	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10
Classification	category II EN388 1140	category II EN388 1240	category II EN388 1340	category II EN388 1340

932

1. seamless liner
2. dots on the palm
3. knitted of 100 % para-aramid
4. sizes marked by different colours on the wristband

934

Features

- washable
- marked according to size by different colours on the wristband
- 931, 933 especially economic, as gloves are ambidextrous

932

K-MEX®, K-LUX®

Application

- metal processing, e.g. handling of sharp-edged metal sheets
- plastics processing, e.g. assembly of big plastic plates
- building trade and handcraft, e.g. maintenance of sharp-edged machine parts

Qualities and advantages

- high cut protection 3
- high wearing comfort 1
- good grip, even for smooth and moist parts 2
- heat insulation for medium temperatures 3
- wrist protection 4
- good dexterity

Article no. Name	936 K-LUX® N	938 K-MEX® NN	984 K-MEX® N oF
Material	para-aramid, PVC	para-aramid, PVC	para-aramid, PVC
Description	heavy knitted, knit wrist, with PVC dots	medium knitted, knit wrist, PVC dots on both sides	medium knitted, without fingertips, knit wrist, PVC dots
Length (mm) Thickness (mm)	230 - 270	230 - 270	230 - 250
Colour Size	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10
Classification	category II EN388 1440	category II EN388 1340	category II EN388 1340

936

1. seamless liner
2. dots on the palm
3. knitted of 100 % para-aramid
4. sizes marked by different colours on the wristband

938

984

Features

- washable
- marked according to size by different colours on the wristband
- 984 very fine touch as glove has no fingertips, e.g. operating a touch pad

K-MEX® L

995

Application

› steel and metal processing, handling of moist and oily parts, e.g. cutting oily thin sheets to size
› simple work with heat, e.g. removal of fitted sheets off the plasma cutting machine

Qualities and advantages

› good grip when handling oily and greasy parts 2
› very durable, even the crucial parts of the glove 3
› high cut protection 4
› heat insulation with low to medium heat development 4
› high wearing comfort 1
› very good sensitivity

Article no. Name	992 K-MEX® L	995 K-MEX® L
Material	para-aramid, leather	para-aramid, leather
Description	medium knitted, knit wrist, leather trimming on the palm	medium knitted, knit wrist, leather trimming on the palm
Length (mm) Thickness (mm)	230 - 270	230 - 270
Colour Size	yellow/grey 7, 8, 9, 10	yellow/grey 8, 9, 10
Classification	category II EN388 EN407 3344 41xxxx	category II EN388 EN407 3344 41xxxx

992

992

995

Features

› washable
› marked according to size by different colours on the wristband
› 995 additional leather fingertip protection for a better grip

1 seamless liner
2 leather palm
3 reinforced leather part between thumb and index finger
4 knitted of 100 % para-aramid

ArMEX

961

Application

› metal and plastics industry, e.g. aircraft construction
› automotive industry, assembly works
› steel and aluminium mills, sheet production
› all works, that require a forearm protection against cuts or heat

Qualities and advantages

› good fit and hold 2
› many possible combinations with other protective gloves
› high cut protection 1
› heat insulation with medium heat production 3
› good wearing comfort 4

Article no. **Name**	**961** ArMEX
Material	para-aramid
Description	fabric with thumb hole, double layer
Length (mm) **Thickness (mm)**	360, 420
Colour **Size**	yellow 2, 3
Classification	category II EN388 1340

961

961

Features

› good heat protection up to 100 °C
› palm is also protected
› thumb hole for perfect fit
› washable
› 360 and 420 mm length

961

1 100 % para-aramid
2 thumb fixing
3 double fabric
4 light knitted quality

DumoCut®

655

Application

› metal and plastics processing
› handling of sharp-edged materials
› mechanical engineering
› automotive and supply industry
› storage and commission works

Qualities and advantages

› high flexibility
› very good sensitivity
› very good grip
› high mechanical resistance

Article no. Name	655 DumoCut® 655	656 DumoCut® 656	657 DumoCut® 657	658 DumoCut® 658
Material	glass fibre, polyamide, polyurethane	glass fibre, polyamide, nitrile foam	glass fibre, polyamide, nitrile	glass fibre, polyamide, polyurethane
Description	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, deep coated	seamless liner, knit wrist, deep coated	seamless liner, knit wrist, palm coated
Length (mm) Thickness (mm)	230 - 290 1,05 ± 0,10	225 - 295 1,35 ± 0,10	215 - 285 1,20 ± 0,10	ca. 350 1,05 ± 0,10
Colour Size	green-blue/white 7, 8, 9, 10, 11	green-blue/blue 7, 8, 9, 10, 11	green-blue/blue 7, 8, 9, 10	green-blue/black 7, 8, 9, 10, 11
Classification	category II EN388 4431	category II EN388 4432	category II EN388 4432	category II EN388 4431

656

1 ergonomic fit
2 nitrile foam coating
3 deep coated

656

658

Features

› 655 moisture-repellent PU palm coating
› 655 palm coated
› 656 nitrile foam coating
› 656 deep coated
› 656 very good grip with oily and greasy parts
› 657 nitrile coating
› 657 deep coating
› 658 moisture-repellent palm coating
› 658 350 mm long
› 658 cut resistance at the cuff may vary slightly

DumoCut® 657/658
available in the 1st quarter 2010

Waredex Work®, SedaCut®

550

Application

› metal processing
› printing industry, e.g. changing blades
› glass industry, e.g. flat glass processing
› assembly works with high danger of cuts, e.g. changing knives at paper cutting machines
› working with scalpels or coating knives

Qualities and advantages

› very high cut resistance combined with mechanical barrier
› excellent wearing comfort 3
› fine touch
› sure grip when handling slightly oily parts 1 2
› moisture-repellent 1
› firm elasticised wrist protection 4

Article no.	550	551
Name	Waredex Work®	SedaCut® 551
Material	polyurethane, HPPE fibre, glass, polyamide	polyurethane (water-based), HPPE fibre glass fibre
Description	seamless liner, knit wrist, palm coated	seamless liner, knit wrist, deep coated
Length (mm)	235 - 265	230 - 270
Thickness (mm)	1,1 ± 0,1	1,35 ± 0,10
Colour	cream/grey	cream/grey
Size	7, 8, 9, 10, 11	7, 8, 9, 10
Classification	category II EN388 4541	category II EN388 4542

550

1 coating over the fingertips
2 PU-coating
3 ergonomic fit
4 close-fitting sleeve-band

550

551

Features

› very high cut protection (level 5)
› very good sensitivity
› roughened PU coating for a sure grip
› washable
› 551 deep coated
› 551 water-based polyurethane for improved safety of the glove wearer

NevoCut®

927

Application

- assembly operations with high cut risks
- working with scalpels or coating knives
- printing industry
- glass industry
- paper industry

Qualities and advantages

- very good cut resistance
- excellent fine touch
- good wearing comfort

Article no. Name	923 NevoCut® 923	927 NevoCut® 927
Material	polyamide, glass fibre, HPPE fibre	polyamide, glass fibre, HPPE fibre, steel
Description	light knitted, knit wrist	medium knitted, knit wrist
Length (mm) Thickness (mm)	230 - 270 1,05 ± 0,05	230 - 270 1,50 ± 0,10
Colour Size	white 7, 8, 9, 10	white 8, 9, 10
Classification	category II EN388 3540	category II EN388 3540

927

1 ergonomic fit
2 close-knitted liner
3 marked according to size by different colours on the wristband

923

923

Features

- very high cut protection (level 5)
- ambidextrous
- washable
- 923 lighter knitting (14 gg)
- 927 medium knitting (10 gg)

TAG-TRIX, TAG-MEX

977

Application

- handling of sharp-edged materials
- printing industry, e.g. changing blades
- glass industry, e.g. flat glass processing
- automotive industry
- assembly works with high danger of cuts, e.g. changing knives at paper cutting machines

Qualities and advantages

- good wearing comfort 4 2
- high cut resistance combined with mechanical barrier
- very fine touch 2 3
- good grip, even with smooth and moist parts 1
- excellent fine touch

Article no. Name	977 TAG-TRIX N	978 TAG-MEX	979 TAG-MEX N
Material	para-aramid, glass fibre, cotton, PVC	para-aramid, glass fibre, cotton	para-aramid, glass fibre, cotton, PVC
Description	light knitted, knit wrist, with PVC dots	medium knitted, knit wrist	medium knitted, knit wrist, with PVC dots
Length (mm) Thickness (mm)	230 - 270	230 - 270	230 - 270
Colour Size	yellow-grey/yellow 7, 8, 9, 10	yellow-grey 7, 8, 9, 10	yellow-grey/yellow 7, 8, 9, 10
Classification	category II EN388 1440	category II EN388 EN407 1540 x1xxxx	category II EN388 EN407 1540 x1xxxx

977

1 dots
2 close-knitted liner
3 ergonomic fit
4 mixture para-aramid/fibre

978

Features

- marked according to size by different colours on the wristband
- 978 especially economic, as gloves are ambidextrous
- 978 can be worn underneath a glove, e. g. chemical protection

979

Protector, Thermoplus®

955

Application

- metal production and processing
- plastic processing
- automotive industry
- laboratories, heat ovens and cabinet dryers
- foundries

Qualities and advantages

- good mechanical resistance for heat up to 100 °C 1
- excellent fine touch 4
- high cut protection due to para aramid material 1
- good sweat absorption 1
- high wearing comfort 2
- additional cut and heat protection in the pulse area 3

Article no. Name	951 Protector	955 Thermoplus®
Material	para-aramid	para-aramid, cotton, polyamide, acryl
Description	knitted, terry loop, knit wrist	medium knitted, long knit wrist
Length (mm) **Thickness (mm)**	230 - 270	350
Colour **Size**	yellow 8, 9, 10	grey 9, 10
Classification	category III EN388 EN407 2540 41xxxx	category III EN388 EN407 3440 x13xxx

955

1 mixed fabric
2 seamless liner
3 long version
4 ergonomic fit

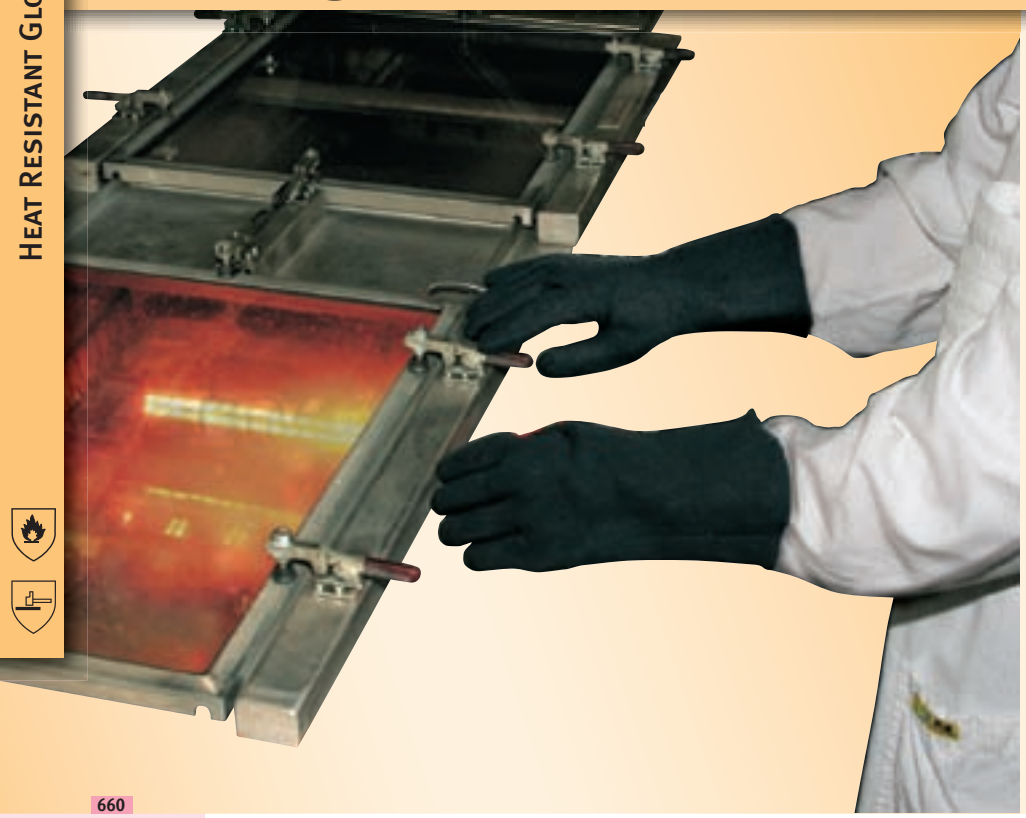
951

955

Features

- especially economic, as gloves are ambidextrous 4
- marked according to size by different colours on the wristband

Thermguard



660

Application

- metal production and processing
- glass production
- laboratories, heat ovens and cabinet dryers
- rubber processing
- stamping

Qualities and advantages

- good heat durability up to 250 °C
- good wearing comfort
- good sensitivity
- good grip 1
- allows working without user fatigue
- less sensitive to soiling

Article no. **Name**	**660** Thermguard
Material	polyester, nitrile, cotton
Description	coated outer fabric with fleece inlay
Length (mm) **Thickness (mm)**	315-335
Colour **Size**	black 10
Classification	category II EN388 EN407 1221 x2xxxx

660

1 special coating
2 rough surface
3 wide cuff diameter
4 excellent finger fit

660

Features

- washable
- good thermal insulation by multi-layer system
- coating by spray coat method
- glove surface free from silicone (lacquer indifference, test method automotive industry)
- good dexterity

660

K-TECT, Karbo TECT®

954

Application

- metal work and processing
- large bakeries
- changing tools at hot machines
- laboratories, heat ovens and cabinet dryers
- refineries
- all areas with dry contact heat

Qualities and advantages

- excellent heat insulation up to 350 °C 1
- high cut resistance 1
- good and close fit for exact handling, even with high temperatures 3
- reduction of electrostatic charge 1
- high wearing comfort due to cotton inlay

Article no. Name	946 KarboTECT® LL	950 KarboTECT®	953 K-TECT	954 KarboTECT® L
Material	para-aramid, carbon, wool, leather	para-aramid, carbon, wool	para-aramid, cotton	para-aramid, carbon, wool, leather
Description	heavy knitted, leather trimming on the palm, leather cuff	heavy knitted, knit wrist	heavy knitted, knit wrist	heavy knitted, leather cuff
Length (mm) Thickness (mm)	380 - 400	240 - 260	280 - 320	380 - 400
Colour Size	yellow/red.brown/black 9, 10	yellow/black 7, 9, 10	yellow 9, 10	yellow/red.brown/black 9, 10
Classification	category III EN388 3444 EN407 4344xx	category III EN388 2441 EN407 4341xx	category III EN388 2540 EN407 4243xx	category III EN388 1441 EN407 4343xx

954

1 mixed fabric para-aramid/carbon
2 leather cuff
3 ergonomic fit

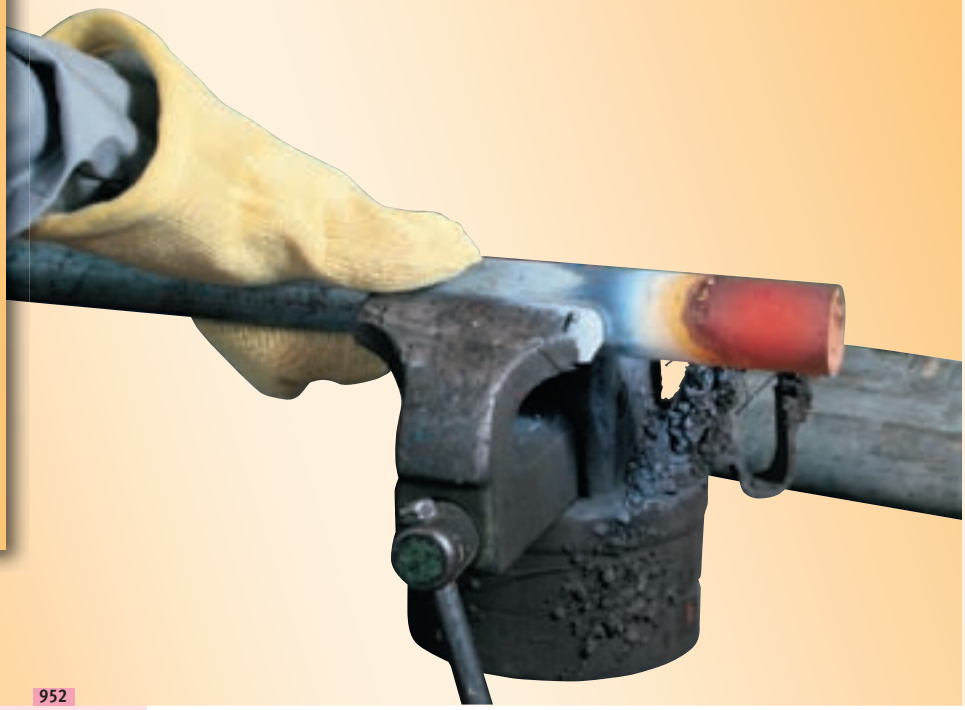
946

Features

- 946 good grip with oily and greasy parts due to leather trimming on the palm
- 950, 953, 954 very economic, as gloves are ambidextrous 3
- 953 contact heat up to 250 °C
- 954 approved for food handling
- 954 leather cuff for additional forearm protection 2

954

Mitten



952

Application

- metal work and processing
- large bakeries
- laboratories, heat ovens and cabinet dryers
- foundries

Qualities and advantages

- high abrasion exposure and mechanical resistance in heat areas up to 500 °C (2)
- good wearing comfort due to cotton inner glove
- very durable (1)

Article no. **Name**	**952** Mitten
Material	para-aramid, cotton, steel
Description	heavy design, several layers
Length (mm) **Thickness (mm)**	290 - 310
Colour **Size**	yellow 10
Classification	category III EN388 EN407 3542 4444xx

952

952

952

Features

- PE film attached as steam and moisture barrier
- extremely high abrasion resistance due to steel thread
- wide cuff for quick donning and doffing

(1) reinforcement in the area between thumb and index finger

(2) para-aramid fabric

BrassTec®

Application

› metal foundries
› metal production and processing
› changing tools at hot machines
› working at melting furnaces
› laboratories: heat ovens and cabinet dryers
› glass industry

Qualities and advantages

› very good grip due to special palm coating 1
› good roll-off effect of molten metal
› good thermal insulation up to 250 °C 1 2
› radiant heat up to 1,000 °C 2
› conical shape allows easy donning and doffing
› moisture-repellent 1

947

Article no. **Name**	**947** BrassTec®
Material	para-aramid, cotton, aluminium, silicone
Description	3-layer-system, cuff, seamless liner
Length (mm) **Thickness (mm)**	360 -380 3,10 ± 0,15
Colour **Size**	silver/grey 9, 10, 11
Classification	category III EN 388 EN 407 3443 423343

947

1 special palm coating
2 aluminium-clad back of the hand
3 seams made of para-aramid thread
4 wide cuff diameter

947

Features

› special silicone coating with very high temperature resistance
› good cut resistance
› multi-layer system

947

Cama Iso®, Tricotril® Winter

690

Application

- for winter use by local, district, regional and national services
- drilling platforms
- waste disposal
- deep-sea fishery
- 690 working and operating machines in cold areas
- 690 gardening and agriculture
- 690 preparation of ski-slopes

Qualities and advantages

- short-term cold protection down to -20 °C (2)
- high wearing comfort by fleece inlay (2)
- very durable
- good grip by roughened palm
- good dexterity
- high mechanical resistance

Article no. / Name	690 Cama Iso®	738 Tricotril® Winter	739 Tricotril® Winter
Material	PVC	nitrile, cotton	nitrile, cotton
Description	fleece inlay, cuff, fully coated, roughened	heavy seamless cotton liner, cuff, fully coated, palm profile	heavy seamless cotton liner, cuff, fully coated, palm profile
Length (mm) / Thickness (mm)	290-310 / 3,5 ± 0,3	290-310 / 2,0 ± 0,2	390-410 / 2,0 ± 0,2
Colour / Size	reddish brown	green / 8, 9, 10, 11	green / 8, 9, 10, 11
Classification	category II EN388 3221 to -20°C	category III EN388 3121 EN374 AJL EN374 EN407 x2xxxx to -20°C	category III EN388 3121 EN374 AJL EN374 EN407 x2xxxx to -20°C

738

690

690

1. distinct palm profile
2. fleece inlay
3. good dexterity

Features

- sure grip when handling wet parts due to roughened/profiled surface
- 690 waterproof
- cone-shaped cuff design
- 738, 739 approved for food handling
- 738, 739 full chemical protective glove
- 738, 739 see page 43

DiraCold®, Worktril® W

Application

- transportation and logistics
- outdoor assembly work
- erection of scaffolding
- road construction
- shipbuilding
- cold storage houses

Qualities and advantages

- short-term cold protection down to -20 °C 1 2
- warming lining
- high flexibility in comparison with leather gloves
- heat/cold flexibility
- very breathable 2
- robust workmanship 3 4
- good grip when handling smooth parts
- moisture-repellent

Article no. Name	302 DiraCold® 302	315 Worktril® W
Material	nitrile, cotton, fleece inlay	nitrile, cotton jersey
Description	textile fabric with special coating, canvas cuff, knuckle protection	nitrile coated fabric, fleece inlay, canvas cuff, palm coated
Length (mm) Thickness (mm)	260 - 280 2,90 ± 0,10	260 - 280
Colour Size	black/creme 8, 9, 10, 11, 12	brown 8, 9, 10, 11
Classification	category II EN388 to -20°C 2111	category II EN388 to -20°C 3111

1 warming lining
2 cuff
3 textile back of hand
4 knuckle protection
5 textile fabric with special coating

Features

- sure grip for wet parts due to shagreened/moulded surface
- moisture-repellent
- washable
- elastic on back of hand
- safety cuff for quick donning and doffing
- 302 free from Chromate VI
- 302 pronounced surface structure for a sure grip
- 302 flexible coating for excellent wearing comfort
- 302 see page 65
- 315 see page 66

IceGrip, TeboCold®

691

Application

- transportation and logistics
- outdoor assembly work
- erection of scaffolding
- road construction
- shipbuilding
- cold storage houses

Qualities and advantages

- cold restistance down to -50 °C according to EN 511
- warming lining made of Thinsulate®
- excellent wearing comfort
- good mechanical resistance
- very durable

Article no. Name	691 IceGrip	693 TeboCold® 693
Material	Thinsulate®, PVC, nylon	Thinsulate®, PVC, polyamide, polyester
Description	inlay, knit wrist, sewn, fine profile	inlay, cuff with Velcro fastener, fine profile
Length (mm) Thickness (mm)	280-330	280-320 3,30 ± 0,15
Colour Size	black 7, 8, 9, 10, 11	black 8, 9, 10, 11
Classification	category II EN388 EN511 2121 12x	category III EN388 EN511 2141 12x

693

1. special reinforced palm
2. water-repellent material
3. Velcro fastener at the cuff
4. non-slip profile on the palm

691

Features

- sure grip for wet parts due to shagreened/moulded surface
- moisture-repellent
- approved for food handling
- 691 karabiner
- 691 cold protection by Thinsulate® 40 g
- 693 improved cold protection by Thinsulate® 100 g

693

RewoCold®, StoneGrip

692

Application

› transportation and logistics
› outdoor assembly work
› for winter use by local, district, regional and national services
› erection of scaffolding
› preparation of ski-slopes
› police and security firms

Qualities and advantages

› short-term cold protection down to -50 °C
› good heat insulation 3
› very good temperature flexibility 1
› moisture-repellent 4
› very good grip and mechanical resistance

Article no. Name	644 RewoCold® 644	692 StoneGrip
Material	artificial leather, felt	natural latex, acrylic, cotton
Description	artificial leather, moisture barrier, insulation inlay for cold, cuff	liner, terry loop, knitted cuff, palm coated, roughened
Length (mm) Thickness (mm)	250 - 310 1,8 ± 0,15	260 - 280 3,5 ± 0,5
Colour Size	grey/black 7, 8, 9, 10, 11, 12	neon yellow/black 9, 10
Classification	category II EN 388 to -20°C 2121	category II EN 388 EN511 2241 x2x

644

1 artificial leather
2 cuff
3 warming lining

644

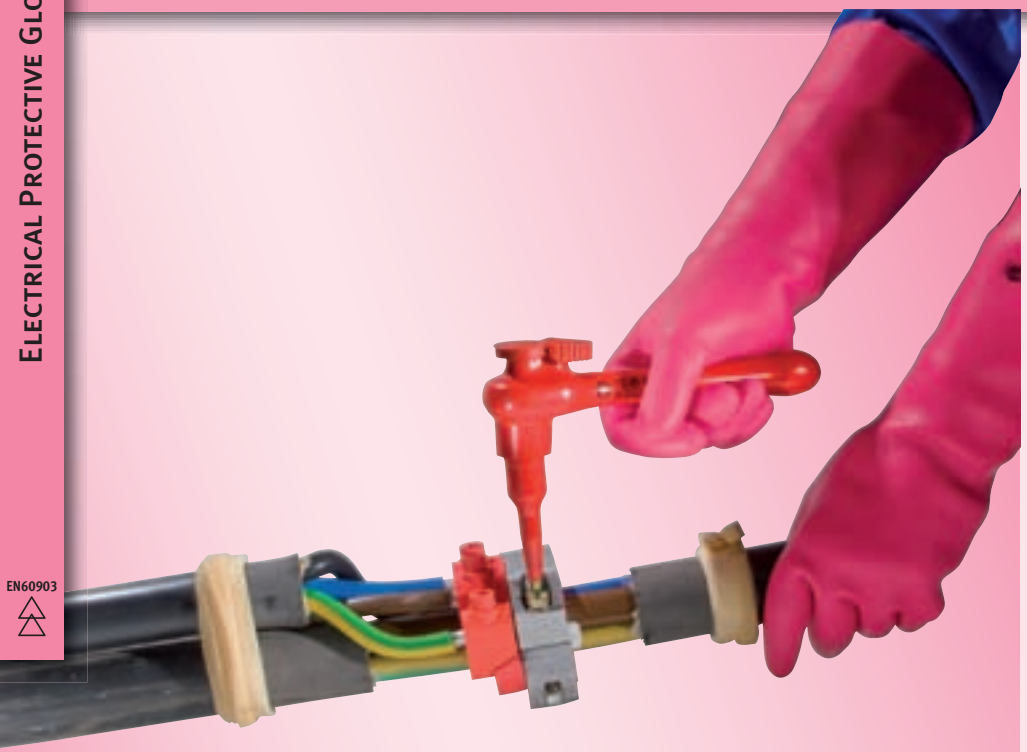
692

Features

› 644 cuff for quicker donning and doffing
› 644 see page 69
› 644 short-term cold protection down to -20 °C
› 692 shrink-roughened surface
› 692 offers protection against sharp materials
› 692 good temperature flexibility
› 692 excellent grip
› 692 good cut resistance on the palm
› 692 eye-catching signal colour
› 692 good climate control by uncoated back of the hand

Electro

EN60903



583

Application

› power supply and installation companies
› electrical workshops in all branches of the industry
› installation, maintenance and repair work involving high voltages

Qualities and advantages

› electrical arc faultage test passed according to CENELEC ENV 50354 and IEC 61482-1
› very good flexibility
› very good sensitivity 1
› good grip 2
› low-protein natural latex with surface treatment for avoidance of allergies

Article no.	583	584
Name	Electro	Electro
Material	natural latex (NR)	natural latex (NR)
Description	long cuff, roughened	long cuff, roughened
Length (mm)	345-375	395-425
Thickness (mm)	max. 0,5+0,6	max. 1+0,6
Colour	red	red
Size	8, 9, 10, 11	8, 9, 10, 11
according to the guideline 89/686/EWG	category III EN60903	category III EN60903
Class	00	0
Category	A, Z, C	A, Z, C
IEC 61482-1	Class II	Class II
Tear resistance	≥ 16 Mpa	≥ 16 Mpa
Elongation of break	≥ 600 %	≥ 600 %
Permanent elongation	≤ 15 %	≤ 15 %
Test voltage (kV) AC	2,5	5
Max. working voltage:		
a. AC voltage	500 V	1.000 V
b. DC voltage	750 V	1.500 V

Features

› delivery in bags resistant to UV-light

584

583

583

1 anatomical fit
2 roughened surface
3 wide cuff diameter
4 test stamp

Electro P

591

Application

› power supply and installation companies
› electrical workshops in all branches of the industry
› installation, maintenance and repair work involving high voltages

Qualities and advantages

› electrical arc faultage test passed according to CENELEC ENV 50354 and IEC 61482-1
› very good flexibility
› very good sensitivity 1
› good grip 2
› low-protein natural latex with surface treatment for avoidance of allergies

EN60903

Article no. Name	590 Electro P	591 Electro P
Material	natural latex (NR), cotton	natural latex (NR), cotton
Description	seamless liner, cuff, fully coated, roughened	seamless liner, cuff, fully coated, roughened
Length (mm) Thickness (mm)	345-375 max. 0,5+cotton	345-375 max. 1,0+cotton
Colour Size	red 8, 9, 10, 11	red 8, 9, 10, 11
according to the guideline 89/686/EWG	category III EN60903	category III EN60903
Class Category	00 A, Z, C	0 A, Z, C
IEC 61482-1	Class II	Class II
Tear resistance Elongation of break Permanent elongation	≥ 16 Mpa ≥ 600 % ≤ 15 %	≥ 16 Mpa ≥ 600 % ≤ 15 %
Test voltage (kV) AC Max. working voltage: a. AC voltage b. DC voltage	2,5 500 V 750 V	5 1.000 V 1.500 V

591

1 anatomical fit
2 roughened surface
3 wide cuff diameter
4 test stamp
5 cotton liner

Features

› delivery in bags resistant to UV-light
› seamless cotton liner

590

591

Electro

EN60903

585

Application

› power supply and installation companies
› electrical workshops in all branches of the industry
› installation, maintenance and repair work involving high voltages

Qualities and advantages

› electrical arc faultage test passed according to CENELEC ENV 50354 and IEC 61482-1
› very good flexibility
› very good sensitivity 1
› good grip 2
› low-protein natural latex with surface treatment for avoidance of allergies

Article no. / Name	585 Electro	586 Electro	587 Electro
Material	natural latex (NR)	natural latex (NR)	natural latex (NR)
Description	long cuff, roughened	long cuff, roughened	long cuff, roughened
Length (mm) / Thickness (mm)	395 - 425 max. 1,5+0,6	395 - 425 max. 2,3+0,6	395 - 425 max. 2,9+0,6
Colour / Size	red 9, 10, 11	red 9, 10, 11	red 9, 10, 11
according to the guideline 89/686/EWG	category III EN60903	category III EN60903	category III EN60903
Class / Category	1 A, Z, C	2 A, Z, C	3 A, Z, C
IEC 61482-1	Class II	under certification	under certification
Tear resistance	≥ 16 Mpa	≥ 16 Mpa	≥ 16 Mpa
Elongation of break	≥ 600 %	≥ 600 %	≥ 600 %
Permanent elongation	≤ 15 %	≤ 15 %	≤ 15 %
Test voltage (kV) AC	10	20	30
Max. working voltage:			
a. AC voltage	7.500 V	17.000 V	26.500 V
b. DC voltage	11.250 V	25.500 V	39.750 V

Features

› delivery in bags resistant to UV-light

585

1 anatomical fit
2 roughened surface
3 wide cuff diameter
4 test stamp

586

587

Super, Extra, Perfect, Ideal

752

Application

› protection for hand and materials during routine work in canteens, cleaning and hygiene
› public health and nursing services
› food and canning industries, especially for processing fruits, vegetables, meat and fish

Qualities and advantages

› very good grip 1 3
› easier donning and doffing of the glove 2
› good dexterity 4
› work without user fatigue 4
› high wearing comfort by flock lining

Article no. Name	701 Super	702 Extra	712 Perfect	752 Ideal
Material	natural latex	natural latex	natural latex	natural latex
Description	cuff, rolled edge, dots on the palm, flock lined	cuff, stretched edge, roughened, flock lined	cuff, stretched edge, roughened, flock lined	cuff, stretched edge, roughened, flock lined
Length (mm) **Thickness (mm)**	290-310 0,55 ± 0,08	300-320 0,5 ± 0,06	300-320 0,35 ± 0,05	300-320 0,5 ± 0,06
Colour **Size**	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	yellow 7, 8, 9, 10	orange 7, 8, 9, 10
Classification	category I	category I	category I	category I

701

1 very distinct surface profile on the palm (dots)
2 rolled edge
3 special profile on the fingertips
4 ergonomic fit

752

Features

› special follow-up treatment process for a low emission of natural latex particles
› 701, 702, 752 approved for food handling
› 702 dots on the palm for a sure grip and optimal sensitivity
› 702, 712, 752 stretched edge

702

NIMM-den

537

Application

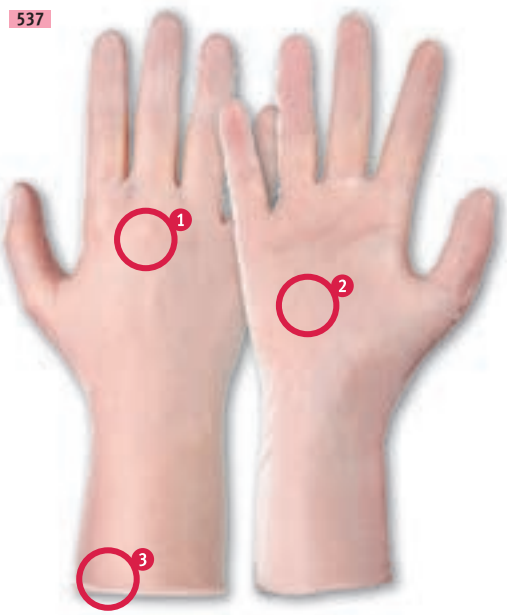
› light protection for hand or materials
› research
› pharmaceutical industry
› medical and veterinary professions
› production of plastics
› processing of china and glass
› quality control

Qualities and advantages

› disposable protective glove
› very fine touch 1
› high wearing comfort
› comfortable handling 3
› very suitable for people suffering from latex allergies 1

Article no. Name	537 NIMM-den	538 NIMM-den
Material	vinyl	vinyl
Description	rolled edge, powderfree	rolled edge, powdered
Length (mm) Thickness (mm)	min. 240 0,15 ± 0,05	min. 240 0,15 ± 0,05
Colour Size	white/transparent 7, 8, 9, 10	white/transparent 7, 8, 9, 10
Classification	category I CE	category I CE

537



1 100 % vinyl
2 ambidextrous
3 rolled edge

537

Features

› removal of single gloves from a hygienic dispenser box

538

PE-Disposable, Examination Glove

651

Application

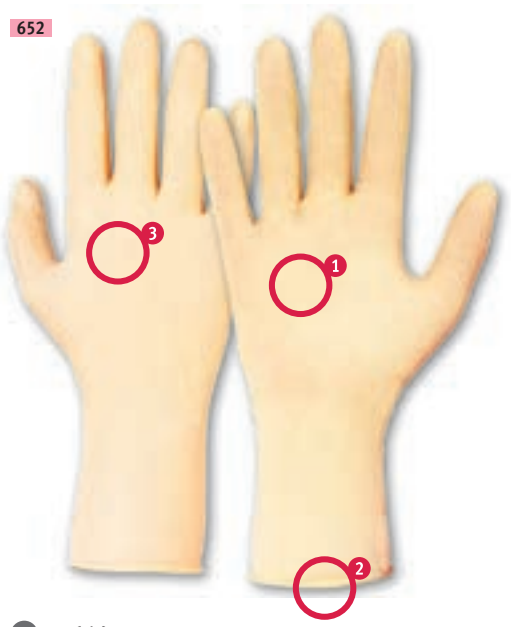
- medical and veterinary professions
- research
- light protection for hand or materials
- pharmaceutical industry
- processing and sale of food
- production of plastics
- processing of china and glass
- quality control

Qualities and advantages

- disposable protective glove
- optimal touch
- soft and elastic
- maximum dexterity
- comfortable handling 3

Article no. Name	539 PE-Disposable Glove	651 Examination Glove	652 Examination Glove
Material	polyethylene	natural latex	natural latex
Description	embossed	rolled edge, powdered	rolled edge, powderfree
Length (mm) Thickness (mm)	min. 240 0,01	min. 240 0,15 ± 0,05	min. 240 0,15 ± 0,05
Colour Size	transparent ladies and gentlemen	ivory 7, 8, 9	ivory 7, 8, 9, 10
Classification	category I	category I	category I

652



1 ambidextrous
2 rolled edge
3 roughened surface

652

Features

- 539 packed in bags (100 pieces)
- 651, 652 approved for food handling
- 651, 652 removal of single gloves from hygienic dispenser box
- 652 costly cleaned natural latex with low protein content

539

over shoe

Application

- pharmaceutical companies
- laboratories
- power plants
- hygienic areas
- cleaning teams, e.g. in aviation or space travel
- cleaning companies
- simple clean rooms
- workshops

Qualities and advantages

- re-usable, washable over shoe
- sure standing on almost all floor coverings 1
- close-fitting shape
- easy donning and doffing 2
- high flexibility

971

Article no. **Name**	**971** over shoe
Material	polyester, PVC
Description	fabric, coated sole
Length (mm) **Thickness (mm)**	size 1 = 290 mm, size 2 = 320 mm, size 3 = 330 mm
Colour **Size**	white/red 1 = 39-42, 2 = 43-45, 3 = 46-48

971

1 shoe sole has a good grip
2 elastic sewn in
3 high sole edge
4 size label

971

Features

- sole with profile for a sure step

971

LIST OF ARTICLE NUMBERS

Index

Index

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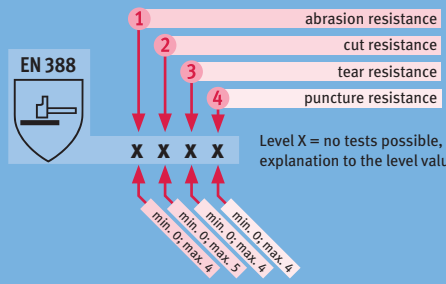
MECHANICAL RISKS

EN 388



Level X = no tests possible, i.e. not conducted
explanation to the level values s. page 23

CHEMICAL RISKS

Minimal chemical protection

EN 374

The gloves are waterproof and offer minimal protection against chemical risks

Full chemical protection

EN 374 (1-3)

Gloves are tested against 3 out of a test batch of 12 chemicals, and must reach at least a permeation level 2 (›30mins) against each of these to reach the standard.

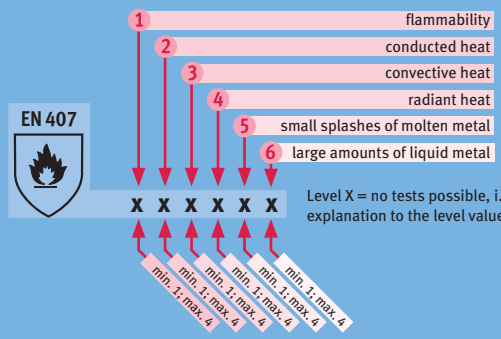
BACTERIOLOGICAL RISKS

EN 374

Is only valid if accompanied by the pictograms signifying minimal or full chemical protection. If shown, there is a protection against bacteria and moulds.

THERMAL RISKS

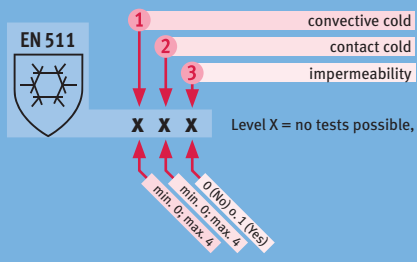
EN 407



Level X = no tests possible, i.e. not conducted
explanation to the level values s. page 27

COLD RISKS

EN 511



Level X = no tests possible, i.e. not conducted

STATIC ELECTRICITY

EN 1149

norm	measuring method	target/must	value
EN1149-1	surface resistance	must achieve	$< 2{,}5 \times 10^{9}$
EN1149-2	contact resistance	target resistance	$< 10^{8}$

All about the topic hand protection!

KCL-NEWSLETTER

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