



PTP-TrionicE – Rev15 – 08.01.08

CATEGORY III CERTIFICATION

CE 0334

TRIONIC 517- 518- 521- 522

CE-Type Examination Certificates

Trionic 517 : 0072/014/162/12/96/0676

Trionic 518 : 0072/014/162/12/96/0676/Ex 02 05 98

Trionic 521 : 0072/014/162/12/96/0676/Ex 03 06 02

Trionic 522 : 0072/014/162/12/96/0676/Ex 04 06 02

issued by the approved body nr. 0072

I.F.T.H – Av. Guy de Collongue - F-69134 ECULLY CEDEX

Certificate of conformity of the Quality Assurance System

issued by the approved body nr. 0334

ASQUAL - 14, rue des Reculettes - F-75013 PARIS

These gloves are designed for chemical protection where sensitive products are handled in clean environment.

These gloves conform to the provisions of Directive 89/686/EEC for protection against mechanical risks, chemicals and micro-organisms.

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MAPA®
PROFESSIONNEL

TRIONIC 517- 518 - 521- 522

DESCRIPTION AND GENERAL PROPERTIES

Liquidproof gloves made of **natural latex blended with neoprene and nitrile.**

Anatomical form

Chlorinated internal surface.

Anti-slip finish in palm and fingers area.

Do not contain any powder, silicone nor paraffine.

<p>Finished, tested and packaged in certified Class 100 (M3.5) cleanrooms. 100% inspected for pinholes. 1.5 AQL. Typical maximum number of particles 0.5µm and larger : 700 per cm² glove Typical maximum ion content (µg = microgram) :</p> <p>Chlorides : 50 µg/g glove Calcium : 25 µg/g glove Potassium : 10 µg/g glove Sodium : 10 µg/g glove</p> <p>Typical maximum Non Volatile Residue (NVR) content : 0.20 mg/cm² (test methods according to IEST-RP-CC-005.2)</p>

Conforms to the FDA (Food and Drug Administration) regulation for **food contact.**

Thickness (in wrist area) : **0,50 mm** (nominal value)

	Trionic 518	Trionic 517	Trionic 521	Trionic 522
Colour	orange	blond		
Length (cm) (nominal value)	36		46	61
Available sizes	7 8 9 10 11	6 - 6 ½ 7 - 7 ½ 8 - 8 ½ 9 - 9 ½ 10 - 10 ½ 11	8 9 10	

Standard packaging (completed in Class 100 (M3.5) cleanroom) :

- **each pair** in thermosealed, printed polyethylene bag
 - **12 pairs** in master polyethylene bag
- **72 pairs** per carton (517-518-521) / **48 pairs** per carton (522)

PROTECTIVE VALUE - "CE"-TYPE



PROTECTION AGAINST CHEMICALS

According to EN 374 standard.
 Liquidproof glove.
 Permeation data : see the enclosed chemical resistance chart.



PROTECTION AGAINST MECHANICAL RISKS

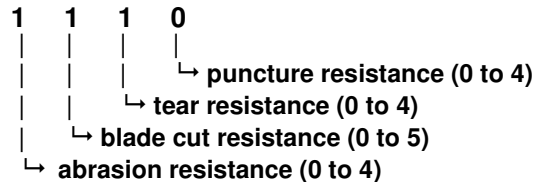
Levels of performance according to EN 388 standard.

Acceptable Quality Level : (AQL) 0.65%



PROTECTION AGAINST MICRO-ORGANISMS

According to EN 374 standard



PROTECTION AGAINST RADIOACTIVE CONTAMINATION

According to EN 421 standard.

TRIONIC 517 - 518 - 521 - 522

SPECIFIC ADVANTAGES

- Unique triple polymer blend : superior protection against chemicals commonly used in controlled environment.
- Reduced levels of particles and reactive ions thanks to specific formulation and rinsing in deionized water.
- Inspection and double packaging in class M.3.5 (100) certified cleanroom.
- Gloves regularly tested for particle levels and extractables.
- Test results available on request.
- 100% inspection for pinhole : optimal user safety.
- Safe wet grip thanks to non-slip finish.
- Acceptable for food and drug handling.
- Products manufactured in an ISO 9002 certified factory.

MAIN FIELDS OF USE

Protection against acids and chemicals in clean environment.

- Microelectronics.
- Integrated circuits manufacture.
- Handling wet chemicals.
- Quarzware.
- Instrument and equipment manufacture

INSTRUCTIONS FOR USE

For enhanced safety and service life of the gloves :

- Store the gloves in their original packaging protected from direct sunlight, far from heat sources or electric equipment.
- It is recommended to check that the gloves are suitable for the intended use, because the conditions of use at workplace may differ from the "CE"-type tests.
- It is not recommended for persons sensitized to natural latex, dithiocarbamates and thiazoles to use these gloves.
- Unpack and put on the gloves according to the gowning procedure in the workplace.
- Inspect the gloves for any cracks and flaws before use.
- Put the gloves on dry, clean hands. Place the fingers into the glove. Gently pull the glove over the hand and make final adjustments only when both hands are gloved.
- Do not use the gloves in contact with a chemical for a duration in excess of the measured breakthrough time. Refer to the chemical resistance chart hereafter or contact the Technical Customer Services - MAPA PROFESSIONNEL in order to know this breakthrough time. Use 2 pairs alternatively when in long duration contact with a solvent.
- Turn the cuff end down in order to prevent a hazardous chemical from dripping onto the arm.
- Do not touch the external side of the gloves when taking them off.

TRIONIC 517- 518 - 521- 522

CHEMICAL RESISTANCE CHART

These gloves are designed for protection against numerous chemicals such as mild acids, bases, detergents, alcohols, cetonic solvents. They are not recommended for contact with petroleum, aromatic or chlorinated solvents. In order to know whether these glove are appropriate for a given chemical, refer to the table hereafter or enquire to Mapa Professionnel's Technical Customer Service.

CHEMICAL	Chemical Resistance Index	Degradation Index (1 to 4)	Permeation (EN 374)		Mixture key :
			Break -through time (minutes)	Permeation Index (1 to 6)	
Acetone	++	4	12	1	(1) 81% Phosphoric acid 9% Nitric acid (85%)
Acetic acid 100%	++	4	32	2	
Ammonium fluoride 79%*	++	4	> 480	6	(2) 8% Tetraethylene Glycol 30% Tetrahydrothiophene 1, 1 Dioxide 15% 2-(2-Ethoxyethoxy) Ethanol 7% Monoisopropanolamine 40% 1-Methyl-2-Pyrrolidone
Ammonium hydroxide 30%*	++	4	120	4	
2-Butoxyethanol	+	4	53	2	
2-Butoxyethylacetate*	+	3	35	2	(3) 50% 1-Methyl-2-Pyrrolidone 40% Tetrahydrothiophene 1, 1 Dioxide 10% Monoisopropanolamine
Butyl acetate	=	4	7	0	
Chromic acid 50%*	NT	NT	60	2	
2-Ethoxyethanol	+	4	27	1	(4) 14% Hydrofluoric acid (49%) 28% Ammonium fluoride 15% Glycerin DI Water
Ethoxyethyl acetate*	=	4	4	0	
Ethyl 3-ethoxypropionate*	NT	NT	> 480	6	
Ethy lactate*	NT	NT	> 480	6	(5) 10% Potassium Dichromate 8% Sulfuric acid (96%) DI Water
Ethylene glycol*	NT	NT	> 480	6	
Freon TF	-	1	20	1	
Hexamehyl Disilazane HMDS*	NT	NT	> 480	6	(6) 30% Acetic acid 30% Ammonium chloride DI water
Hydrochloric acid 10%	++	4	>480	6	
Hydrochloric acid 35%	++	4	140	4	
Hydrofluoric acid 48%*	++	4	391	5	(7) 64% Acetic acid 34% Nitric acid 2% Hydrofluoric acid (48%)
Hydrogen peroxide 30%	++	4	>480	6	
Isopropanol	+	4	38	2	
Methanol	+	4	19	1	(8) 100% Phosphoric acid (85%)
2-Methoxy ethanol	+	4	40	2	
2-Methoxy ethanol acetate*	+	4	27	1	
N-Methyl 2-Pyrrolidone*	++	4	35	2	(9) 66% Sulfuric acid (96%) 33% Hydrogen peroxide (30%)
Nitric acid 10%	NT	NT	> 480	6	
Nitric acid 40%*	NT	NT	420	5	
Nitric acid 100%	-	1	3	0	(10) 78% Potassium hydroxide (45%) 11% Sec-butyl alcohol 11% Propanol
PGMEA*	NT	NT	47	2	
Phenol 90%	+	4	102	3	
Phosphoric acid 85%	++	4	> 480	6	(11) 69% Phosphoric acid (85%) 20% Acetic acid (99%) 10% Nitric acid (69%)
Potassium hydroxide 50%*	NT	NT	> 480	6	
Sodium hydroxide 50%	++	4	> 480	6	
Sulphuric acid 10%	++	4	> 480	6	
Sulphuric acid 96%*	=	2	42	2	
Tetrachloroethylene	-	1	11	1	
Trichloroethane*	NT	NT	11	1	
Xylene	-	1	4	0	
Aluminium Etch* (1)	++	4	> 480	6	
Baker PRS 2000* (2)	NT	NT	130	4	
Baker PRS 3000* (3)	NT	NT	> 480	6	
Buffered Oxide Etch* (4)	++	4	> 480	6	
Dichromate cleaning solution* (5)	++	4	> 480	6	
KTI Pad Etch* (6)	NT	NT	> 480	6	
KTI Silicon Etch 1* (7)	NT	NT	> 480	6	
Nitride Etch* (8)	++	4	> 480	6	
Piranha Etch* (9)	NT	NT	243	5	
Potassium Hydroxide Etch* (10)	++	4	278	5	
Slope Etch* (11)	++	4	260	5	

* : tested according to ASTM F 739 NT : not tested yet

Chemical Resistance Index :

- ++ can be used for **long duration contact** (limited to breakthrough time)
- + can be used for **short repeated contacts** (for a total duration not exceeding the breakthrough time)
- = can be used against **splashes**
- **not recommended**