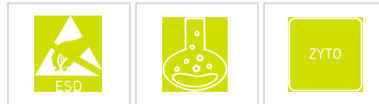




## SHIELDskin Xtreme Orange NITRILE 300 DI

pure<sup>11</sup>-Nr.: 05007, Hersteller: Shield Scientific



### Zusammenfassung

- Neue pure11-Artikelnummer (ab 01.07.2023): 1105007
- Material: Nitril/Neopren
- Beidhändig tragbar
- Puderfrei
- Latexfrei
- AQL-Wert (Acceptable Quality Level): 1.5
- Texturierte Fingerspitzen
- Vulkanisationsbeschleunigerfrei
- Erstklassige Multi-Polymer Formulation: Acrylonitrile Butadiene (Nitrile) und Polychloropren (Neopren)
- Basierend auf der Twinshield™ Technologie
- Weiße Innenseite
- ESD-Eigenschaften nach EN1149-1,-2,-3 und -5 getestet
- Beständig gegen eine Vielzahl von Zytostatika
- Intensiv auf Chemikalienpermeation getestet nach EN374-3:2003
- Einfache Wandstärke 0,17 mm (Mittelfinger)
- Doppelt unterverpackt

### Empfohlene Reinraumklassen

ISO  3  4  5  6  7  8  9

GMP      C  D

### Produktvarianten

pure<sup>11</sup>-Nr.: 05007XS

Farbe: Orange / Größe: XS / Herst.-Nr.: 696451 / VE: 1.000 Stück

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**pure<sup>11</sup>-Nr.: 05007S**

Farbe: Orange / Größe: S / Herst.-Nr.: 696452 / VE: 1.000 Stück

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**pure<sup>11</sup>-Nr.: 05007M**

Farbe: Orange / Größe: M / Herst.-Nr.: 696453 / VE: 1.000 Stück

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**pure<sup>11</sup>-Nr.: 05007L**

Farbe: Orange / Größe: L / Herst.-Nr.: 696454 / VE: 1.000 Stück

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**pure<sup>11</sup>-Nr.: 05007XL**

Farbe: Orange / Größe: XL / Herst.-Nr.: 696455 / VE: 1.000 Stück

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**pure<sup>11</sup>-Nr.: 05007XXL**

Farbe: Orange / Größe: XXL / Herst.-Nr.: 696456 / VE: 1.000 Stück

Quelle: <https://www.pure11.de/shieldskin-xtreme-orange-nitrile-300-di>



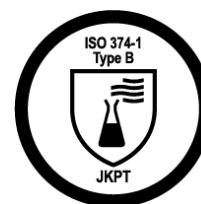
**SHIELDskin XTREME™**  
A REVOLUTION IN GLOVE TECHNOLOGY

**DI**

BASIC  
CONTAMINATION CONTROL

# SHIELDskin XTREME™

## ORANGE NITRILE™ 300 DI





DI

Basic  
contamination  
control

- ⇒ Powder-free single DI washed ambidextrous standard length (300 mm / 11.8") non-sterile nitrile/neoprene cleanroom gloves.
- ⇒ Personal Protective Equipment Category III (PPE - Complex Design) according to Regulation (EU) 2016/425.
- ⇒ Fully compliant to the latest PPE Protective gloves EU norms against chemicals, micro-organisms and viruses.

DESCRIPTION	
Formulation	Nitrile and neoprene synthetic rubber ( <i>acrylonitrile butadiene and polychloroprene</i> ).
Design	Orange, ambidextrous, beaded cuff, textured fingertips.
Packaging	100 gloves per PE bag - 10 bags per polybag - 1 polybag per carton.

SIZES	6/XS	7/S	8/M	9/L	10/XL	11/XXL
Codes	69 6451	69 6452	69 6453	69 6454	69 6455	69 6456

STANDARDS	
CE registration	PPE Category III (Complex Design) - Regulation (EU) 2016/425. Notified Body No 0598: SGS Fimko Oy, Helsinki - FINLAND.
EU PPE norms	ISO 21420:2020, ISO 374-1:2016+A1:2018, ISO 374-2:2019, ISO 374-4:2019, ISO 374-5:2016, EN 16523-1:2015+A1:2018 and ISO 16604:2004 Procedure B.
EU MDR norms	EN 455-1:2000, EN 455-2:2015, EN 455-3:2015 and EN 455-4:2009.
USA standards	ASTM D3767-03 (2020), ASTM D573-04 (2019), ASTM D412-16, ASTM D6978-05 (2019) and IEST-RP-CC005.4 (2013).
Other standards	EN 1149-1/2/3 & 5, ISO 10993-10:2010.

QUALITY	
Quality assurance	Production management in accordance with ISO 9001:2015 and ISO 13485:2016.
Technology	twinSHIELD™ double-walled protection to offer a stronger glove and to reduce risk of pinholes. Two colours: orange to make it easier to select according to the risk, combined with a soft and comfortable white interior. Compatible with clean processing environments due to paperless packaging and multiple post leaching of gloves (single washed in deionised water).

DOCUMENTATION	
Declaration of conformity	These documents can be freely downloaded from the product page on our website: <a href="http://www.shieldscientific.com">www.shieldscientific.com</a> .
EU type examination	For easy access, scan the QR code.
User's instructions	
Certificate of conformance	To access CoC, you need to be registered. Please contact us at <a href="mailto:info@shieldscientific.com">info@shieldscientific.com</a> or call your SHIELD Scientific representative.



# PHYSICAL PROPERTIES



NOMINAL THICKNESS	mm <sup>1</sup>	mil	Norm
⇒ Finger	0.17	6.7	ASTM D3767-03 (2020)
⇒ Palm	0.14	5.5	
⇒ Cuff	0.10	3.9	

<sup>1</sup> Thickness (+/- 0.03 mm)

LENGTH	Minimum	Typical	Norm
⇒ From middle finger tip to edge of cuff	≥ 290 mm / 11.4"	300 mm / 11.8"	ISO 21420:2020

STRENGTH PROPERTIES	Force at break (spec.)		Ultimate elongation (spec.)	Force at break (typical)	Norm
⇒ Before aging	≥ 6.0N	14 MPa	≥ 500%	10.0N	EN 455-2:2015 ASTM D573-04 (2019) & ASTM D412-16
⇒ After aging	≥ 6.0N	14 MPa	≥ 400%	8.0N	

FREEDOM FROM HOLES	Performance	Norm
⇒ Acceptable Quality Level (AQL)	< 0.25 <sup>2</sup> - Level 3	ISO 374-2:2019 EN 455-1:2000

<sup>2</sup> AQL as defined per ISO 2859-1:1999 for sampling by attributes.

RISKS	Description	Norm
Micro-organisms	1000 ml water test. Performance level 3, AQL < 0.25 (inspection level G1).	ISO 374-2:2019
Viruses	Viral penetration test using Phi-X174 bacteriophage according to ISO 16604:2004 Procedure B.	ISO 374-5:2016
Chemicals	<u>Performance</u> : Type B (JKPT). <u>Permeation</u> : Extensively tested. Online chemical resistance guide on <a href="http://www.shieldscientific.com">www.shieldscientific.com</a> . <u>Degradation</u> : Tested for determination of resistance to degradation by chemicals.	ISO 374-1:2016+A1:2018 EN 16523-1:2015+A1:2018  ISO 374-4:2019
Cytotoxic	Tested for permeation by potentially hazardous cancer chemotherapy drugs under conditions of continuous contact.	ASTM D6978-05 (2019)

# CLEANLINESS PROPERTIES

PARTICLES	Specification	Typical value	Test method
Particles/cm <sup>2</sup> ≥ 0.5µm	< 3,000 particles	2,100 particles	IEST-RP-CC005.4

EXTRACTABLES (ION)	Specification (µg/cm <sup>2</sup> )	Typical value (µg/cm <sup>2</sup> )	Test method
Ammonium (NH <sub>4</sub> )	0.100	0.050	IEST-RP-CC005.4
Bromide (Br)	0.030	< 0.008	
Calcium (Ca)	0.750	0.580	
Chloride (Cl)	0.600	0.400	
Fluoride (F)	0.010	< 0.008	
Magnesium (Mg)	0.030	0.008	
Nitrate (NO <sub>3</sub> )	0.600	0.300	
Nitrite (NO <sub>2</sub> )	0.050	< 0.008	
Phosphate (PO <sub>4</sub> )	0.050	< 0.008	
Potassium (K)	0.050	0.030	
Sodium (Na)	0.080	0.030	
Sulphate (SO <sub>4</sub> )	0.200	0.070	

EXTRA TESTS	Description	Test method
NVR	Maximum 30 µg/g.	IEST-RP-CC005.4
FTIR	Non-detectable levels of silicone, amide and DOP.	IEST-RP-CC005.4
ESD	Tested for electrostatic properties.	EN 1149-1/2/3 & 5

ALLERGIES	
Bio-Compatibility	Demonstrated by skin irritation and sensitization tests in accordance with ISO 10993-10:2010.
Accelerators	Accelerator-free to minimize the risk of allergic contact dermatitis (also known as Type IV, delayed hypersensitivity or chemical allergy).
Chemical Allergens	Non-detectable levels using aqueous solution extraction (Phosphate buffered solution) and High Performance Liquid Chromatography (HPLC) assay method for quantitative analysis.
Latex Protein	Latex-free.

# CHEMICAL RESISTANCE GUIDE



## SHIELDskin XTREME\* ORANGE NITRILE\* 300 DI



- Category III PPE glove (PPE Regulation (EU) 2016/425)
- Complex Design - For mortal & irreversible risks
- Class 1 MDD glove (Council Directive 93/42/EEC)
- Powder-free orange/white nitrile/polychloroprene glove
- twinSHIELD\* double-walled protection
- Ambidextrous
- 300 mm / 0.14 mm (EN 420:2003+A1:2009)
- Biological risk (ISO 374-5:2016 VIRUS)
- AQL 0.25 (EN 374-2:2014 Level 3)
- Viral penetration test (ISO 16604:2004 Procedure B)
- Chemical risk (ISO 374-1:2016+A1:2018 - Type B JKPT)
- Waterproof and for low chemical protection
- Tested for chemical permeation (EN 16523-1:2015+A1:2018)

64-19-7 Acetic Acid 100%	LEVEL 0 8 min
67-64-1 Acetone 99,8%	LEVEL 0 1 min
75-05-8 Acetonitrile 99,9%	LEVEL 0 1 min
10127-02-3 Acridine orange	LEVEL 6 480 min
79-06-1 Acrylamide 40%	LEVEL 6 480 min
79-10-7 Acrylic acid 99%	LEVEL 0 4 min
107-13-1 Acrylonitrile 99%	LEVEL 0 0 min

1336-21-6 Ammonium Hydroxide 25%	LEVEL 1 28 min
62-53-3 Aniline 99,9%	LEVEL 1 14 min
8007-56-5 Aqua regia	LEVEL 6 480 min
Mixed Solution Bacillol AF	LEVEL 2 50 min
Mixed Solution Bacillol 30 Foam	LEVEL 3 73 min
100-51-6 Benzyl Alcohol	LEVEL 1 11 min
7726-95-6 Bromine	LEVEL 0 6 min
79-08-3 Bromoacetic acid 7.5%	LEVEL 4 209 min
74-97-5 Bromochloromethane	LEVEL 3 79 min
71-36-3 Butanol 100%	LEVEL 2 47 min
111-76-2 2-Butoxyethanol 99%	LEVEL 1 23 min
97-88-1 Butyl methacrylate 99,9%	LEVEL 1 11 min
75-15-0 Carbon Disulfide 99,9%	LEVEL 0 0 min
67-66-3 Chloroform 99,8%	LEVEL 0 0 min



77-92-9 Citric acid 30%	LEVEL 6 480 min
548-62-9 Crystal violet	LEVEL 6 480 min
110-82-7 Cyclohexane	LEVEL 6 480 min
108-94-1 Cyclohexanone 99%	LEVEL 0 6 min
66-81-9 Cycloheximide	LEVEL 6 480 min
91-95-2 Diaminobenzidine	LEVEL 6 480 min
107-06-2 1,2-Dichloroethane 99%	LEVEL 0 2 min
75-09-2 Dichloromethane 99%	LEVEL 0 0 min
109-89-7 Diethylamine 99,5%	LEVEL 0 1 min
60-29-7 Diethyl ether 99%	LEVEL 0 2 min
108-20-3 Diisopropyl Ether 99%	LEVEL 1 16 min
127-19-5 Dimethyl Acetamide 99%	LEVEL 1 10 min
68-12-2 Dimethyl Formamide 99%	LEVEL 0 5 min
67-68-5 Dimethyl Sulfoxide 99% (DMSO)	LEVEL 2 48 min

64-17-5 Ethanol 99.8%	LEVEL 1 22 min
64-17-5 Ethanol 70%	LEVEL 2 34 min
1239-45-8 Ethidium Bromide 5%	LEVEL 6 480 min
141-78-6 Ethyl Acetate 99.8%	LEVEL 0 1 min
107-21-1 Ethylene Glycol	LEVEL 0 0 min
Mixed Solution Euro 95 unleaded petrol	LEVEL 1 10 min
314-13-6 Evans blue	LEVEL 6 480 min
50-00-0 Formaldehyde 10%	LEVEL 6 480 min
50-00-0 Formaldehyde 37%	LEVEL 6 480 min
75-12-7 Formamide 99%	LEVEL 3 99 min
64-18-6 Formic acid 98,5%	LEVEL 0 4 min
111-30-8 Glutaraldehyde 25%	LEVEL 6 480 min
111-30-8 Glutaraldehyde 2.5%	LEVEL 6 480 min
50-01-1 Guanidine Hydrochloride	LEVEL 6 480 min

999-97-3 Hexamethyldisilazan 99%	LEVEL 6 480 min
Mixed Solution Hydranal® -Composite 2	LEVEL 6 480 min
7803-57-8 Hydrazine monohydrate 80%	LEVEL 6 480 min
7803-57-8 Hydrazine monohydrate 98%	LEVEL 4 180 min
7647-01-0 Hydrochloric Acid 37%	LEVEL 4 141 min
7664-39-3 Hydrofluoric Acid 40%	LEVEL 1 14 min
7664-39-3 Hydrofluoric Acid 48%	LEVEL 0 6 min
7664-39-3 Hydrogen Fluoride 48%	LEVEL 0 6 min
7722-84-1 Hydrogen Peroxide 30%	LEVEL 6 480 min
7722-84-1 Hydrogen Peroxide 12%	LEVEL 6 480 min
78-83-1 Isobutanol 99%	LEVEL 3 76 min
540-84-1 Iso-Octane 99%	LEVEL 6 480 min
67-63-0 Isopropanol 100%	LEVEL 2 54 min
67-63-0 Isopropanol 70%	LEVEL 3 95 min

Mixed Solution Klercide Premier - WFI 70/30 sterile IPA	<b>LEVEL 3</b> 106 min
Mixed Solution Klercide 70/30 sterile IPA	<b>LEVEL 3</b> 76 min
Mixed Solution LiPF6	<b>LEVEL 6</b> 480 min
7550-35-8 Lithium bromide 30%	<b>LEVEL 6</b> 480 min DR 22%
108-39-4 m-Cresol 98.5%	<b>LEVEL 2</b> 59 min
60-24-2 2-Mercaptoethanol 99%	<b>LEVEL 0</b> 1 min
67-56-1 Methanol 99,9%	<b>LEVEL 0</b> 6 min
37143-54-7 1-Methoxy-2-propylamine 95%	<b>LEVEL 0</b> 3 min
108-87-2 Methylcyclohexane 99,9%	<b>LEVEL 2</b> 55 min
108-10-1 Methyl Isobutyl Ketone 99%	<b>LEVEL 0</b> 2 min
80-62-6 Methyl Methacrylate 99%	<b>LEVEL 0</b> 3 min
1634-04-4 Methyl Tert Butyl Esther (MTBE)	<b>LEVEL 1</b> 11 min
96-47-9 2-Methyltetrahydrofuran 99,9%	<b>LEVEL 0</b> 1 min
Mixed Solution Mucocit®-T branded mixture	<b>LEVEL 6</b> 480 min

Mixed Solution Neopredisan 135-1	<b>LEVEL 1</b> 20 min
142-82-5 n-Heptane 99%	<b>LEVEL 3</b> 91 min
110-54-3 n-Hexane 95%	<b>LEVEL 3</b> 97 min
54-11-5 Nicotine 98%	<b>LEVEL 4</b> 151 min
7697-37-2 Nitric Acid, 50%	<b>LEVEL 3</b> 63 min
7697-37-2 Nitric Acid 70%	<b>LEVEL 0</b> 5 min
872-50-4 N-methyl-2-pyrrolidone	<b>LEVEL 2</b> 32 min
109-66-0 n-Pentane 98%	<b>LEVEL 2</b> 56 min
71-23-8 n-Propanol	<b>LEVEL 2</b> 46 min
95-54-4 o-Phenylenediamine	<b>LEVEL 5</b> 308 min
79-21-0 Peracetic Acid, 10%	<b>LEVEL 4</b> 160 min
64742-49-0 Petroleum benzene 80-100°C	<b>LEVEL 6</b> 480 min
108-95-2 Phenol 50%	<b>LEVEL 1</b> 22 min
108-95-2 Phenol 4%	<b>LEVEL 1</b> 22 min

108-95-2 Phenol aqueous solution 0.45%	LEVEL 6 480 min DR 35%
Mixed Solution Phenol:Chloroform Isoamyl Alcohol 25:24:1	LEVEL 0 1 min
108-95-2 Phenol 0.1% solution	LEVEL 6 480 min
7664-38-2 Phosphoric Acid, 30%	LEVEL 6 480 min
7664-38-2 Phosphoric acid, 85%	LEVEL 6 480 min
3761-53-3 Ponceau 2R	LEVEL 6 480 min
6226-79-5 Ponceau S	LEVEL 6 480 min
1310-58-3 Potassium Hydroxide 40%	LEVEL 6 480 min
123-38-6 Propionaldehyde, 97%	LEVEL 0 2 min
75-56-9 Propylene oxide 99%	LEVEL 0 0 min
110-86-1 Pyridine	LEVEL 0 1 min
598-75-4 Secondary isoamyl alcohol 98%	LEVEL 2 55 min
127-09-3 Sodium acetate Sat. solution	LEVEL 6 480 min
1310-73-2 Sodium Hydroxide 40%	LEVEL 6 480 min

1310-73-2 Sodium Hydroxide, 50%	LEVEL 6 480 min
7681-52-9 Sodium Hypochlorite 13%	LEVEL 6 480 min
100-42-5 Styrene 99.9%	LEVEL 0 0 min
5329-14-6 Sulfamic Acid, 15%	LEVEL 6 480 min
7664-93-9 Sulphuric Acid 10%	LEVEL 6 480 min
7664-93-9 Sulphuric Acid 95%-98%	LEVEL 0 8 min
7664-93-9 Sulphuric Acid 50%	LEVEL 6 480 min
127-18-4 Tetrachloroethylene 99%	LEVEL 0 5 min
109-99-9 Tetrahydrofuran 99.9%	LEVEL 0 0 min
75-59-2 Tetramethylammonium hydroxide 2.5%	LEVEL 6 480 min
108-88-3 Toluene 99,9%	LEVEL 0 1 min
584-84-9 Toluene diisocyanate 95%	LEVEL 0 0 min
76-03-9 Trichloroacetic acid 10%	LEVEL 6 480 min
121-44-8 Triethylamine 99%	LEVEL 2 36 min

76-05-1 Trifluoroacetic acid 99%	LEVEL 0 1 min
95-63-6 1,2,4- Trimethylbenzene 98%	LEVEL 1 13 min
108-67-8 1,3,5-Trimethylbenzene 98%	LEVEL 1 10 min
77-86-1 Tris (hydroxymethyl) aminomethane Sat. solution	LEVEL 6 480 min
72-57-1 Trypan blue	LEVEL 6 480 min
1330-20-7 Xylene 98,5%	LEVEL 0 4 min

**DISCLAIMER:** The data provided was based on gloves tested under laboratory conditions, in accordance with EN 16523-1:2015 (formerly EN 374-3:2003) and EN 374-4:2013. The information is for guidance only and may not reflect the user's application. A risk assessment should always be made by purchaser to assess the suitability of gloves for a specific application.





# EU DECLARATION OF CONFORMITY

FOR MEDICAL DEVICES AND PERSONAL PROTECTIVE EQUIPEMENT

Originator: J.F ROBLES      Revision: 7      Revision date: 04.10.2018      Validity date: 04.10.2023

<b>PRODUCT</b>	SHIELDskin XTREME™ ORANGE NITRILE™ 300 DI
<b>DESCRIPTION</b>	Powder Free DI washed Ambidextrous Non-Sterile 30cm Cleanroom Nitrile Gloves
<b>CLASSIFICATION</b>	Medical Device Class 1 / Personal Protective Equipment (PPE) Category III (Complex Design)

SHIELD Scientific codes	Sizes
69 6451	6/XS
69 6452	7/S
69 6453	8/M
69 6454	9/L
69 6455	10/XL
69 6456	11/XXL

The manufacturer established in the Union:

## SHIELD Scientific B.V.

Dr Willem Dreeslaan 1 – 6721 ND BENNEKOM – THE NETHERLANDS

declares under his/her sole responsibility that the Medical Device and PPE (product codes as mentioned above) described hereafter:

### SHIELDskin XTREME™ ORANGE NITRILE™ 300 DI

is in conformity with the provisions of Council Directive 93/42/EEC and with the national standards transposing harmonized standards EN 455-1:2000, EN 455-2:2015, EN 455-3:2015 and EN 455-4:2009. It is self-certified as a Medical Device Class 1.

is in conformity with the provisions of Regulation (EU) 2016/425 and with the harmonized standards EN ISO 374-1:2016 (as a Type B glove against reagents: J, K, P & T), EN 374-2:2014 (performance level 3, including protection against viruses), EN 16523-1:2015, EN 374-4:2013, EN ISO 374-5:2016 and EN 420:2003 + A1:2009. This device is identical to the PPE, which is the subject of EU Type Examination (Module B) certificate of conformity no. GB18/962116 issued by the Notified Body:

**SGS FIMKO OY (Notified Body No: 0598)**  
**Särkiniementie 3 - 00211 Helsinki - Finland**

This device is subject to the procedure set out in Article VIII (Module D) of the Regulation under the surveillance of the Notified Body:

**SGS FIMKO OY (Notified Body No: 0598)**  
**Särkiniementie 3 - 00211 Helsinki - Finland**

Signed for and behalf of SHIELD Scientific B.V



J.F ROBLES  
General Manager

Date: 04<sup>th</sup> October 2018  
Place: Bennekom

Validity of this declaration: 04<sup>th</sup> October 2018 until 04<sup>th</sup> October 2023



## ESD CERTIFICATE

Product Description: **SHIELDskin Xtreme™ ORANGE NITRILE™ 300**  
Orange Nitrile gloves, white and orange, non sterile

Certificate Number: **1666/12** and **T1210128**

Date: **02.08. 2012**

Test with 3 pairs/6pieces in accordance with  
EN1149-1:2006 Protective Clothing - Electrostatic properties

- Part 1: Test method for measurement of **surface resistivity**  
(Certificate **1666/12**) samples tested as received

Surface Resistivity Information in accordance with EN1149-1:2006		
	Maximum Ohms in accordance to EN1149-5	Measured Ohms
	$2,5 \times 10^9 \Omega$	$4,04 \times 10^8 \Omega$

Air temperature =  $23^{\circ}\text{C} \pm 1$

Relative humidity =  $25 \% \pm 2 \%$

Test with 3 pairs/6 pieces in accordance with  
EN1149-2:1998 Protective Clothing - Electrostatic properties

- Part 2: Test method for measurement of **vertical resistance**  
(Certificate **1666/12**) samples tested as received

Vertical Resistance Information in accordance with EN1149-2:1998		
Maximum Ohms In accordance to EN1149-5	Maximum Value in accordance with TRGS 2153 (Technische Regeln für Gefahrstoffe) BG Germany	Measured Ohms
Not applicable	$< 10^8 \Omega$	$6,98 \times 10^7 \Omega$

Air temperature =  $23^{\circ}\text{C} \pm 1$

Relative humidity =  $25 \% \pm 2 \%$

**Test laboratory/Notified Body:** Eurotextil d.o.o., 10000 Zagreb, Croatia

In accordance with EN 1149-5:2008 Protective clothing - Electrostatic Properties

- Part 5: **Material performance and design requirements**

The data provided is based on gloves tested under laboratory conditions, in accordance with EN1149-1:2006, EN1149-2:1998, EN1149-3:2004 and EN1149-5:2008. The information is for guidance only and may not reflect the user's application. A risk assessment should always be made by purchaser to assess the suitability of gloves for a specific application. There is no test standard for in-use resistivity which is part of EN1149-5 for gloves.

Test with 3 pcs in accordance with  
EN1149-3:2004 Protective Clothing - Electrostatic properties

- Part 3: Test method for **induction decay**  
(Certificate T1210128) samples tested as received  
Dimension of the specimens: samples too small, measurement made with little ring

Induction Decay Information in accordance with EN1149-3:2004		
Shielding Factor S	Electrostatic dissipative if	Measured Half decay time T50 (S)
0,00	T50 <4 S	2,08

Air temperature = 23°C

Relative humidity = 25 %

**Test laboratory/Notified Body:** Centexbel-Verviers, 4650 Herve, Belgium

In accordance with EN 1149-5:2008 Protective clothing - Electrostatic Properties

- Part 5: **Material performance and design requirements**

## SHIELD Scientific B.V.



Cisco ROBLES  
General Manager

The data provided is based on gloves tested under laboratory conditions, in accordance with EN1149-1:2006, EN1149-2:1998, EN1149-3:2004 and EN1149-5:2008. The information is for guidance only and may not reflect the user's application. A risk assessment should always be made by purchaser to assess the suitability of gloves for a specific application. There is no test standard for in-use resistivity which is part of EN1149-5 for gloves.



## CHEMICAL ANALYTICAL SERVICES

### TEST REPORT ASTM D 6978-05

Project No: 104597A

SUBJECT: Permeation testing per ASTM D 6978-05 on sample submitted

SAMPLE: Powder free 6mil ORANGE nitrile glove  
(new Twin Tone SHIELDskin™ ORANGE NITRILE™ 300 Sterile,  
SHIELDskin™ ORANGE NITRILE™ 260 and 300,  
SHIELDskin Xtreme™ ORANGE NITRILE™ 300 gloves)

Test Laboratory: Akron Rubber Development Laboratories Inc  
2887 Gilchrist Road  
Akron Ohio 44305  
UNITED STATES

#### TEST CHEMICALS:

Test chemicals and their sources are listed in Table 1.

Table 1. List of the Test Chemicals, Sources, and Expiration Dates

Test Chemical	Chemical Source
Carmustine (BCNU)	Bristol-Myers
Cyclophosphamide (Cytosan)	Sigma
Doxorubicin Hydrochloride	Teva
Fluorouracil	APP
Etoposide (Toposar)	Teva
Paclitaxel (Taxol)	Dabur Oncology
Thiotepa	Sigma Aldrich

### COLLECTION MEDIA:

The collection media which were selected are listed in Table 2.

Table 2. Collection Media for Test Chemicals

Test Chemical	Concentration	Collection Medium
Carmustine (BCNU)	3,300 ppm	10% Ethanol Aqueous Solution
Cyclophosphamide (Cytocan)	20,000 ppm	Distilled Water
Doxorubicin Hydrochloride	2,000 ppm	Distilled Water
Fluorouracil	50,000 ppm	9.20 pH Sodium Hydroxide Solution
Etoposide (Toposar)	20,000 ppm	Distilled Water
Paclitaxel (Taxol)	6,000 ppm	30% Methanol Aqueous Solution
Thiotepa	10,000 ppm	Distilled Water

NOTE: The chemotherapy drugs were prepared as required by the ASTM D 6978-05 Standard at 5.2.2.5, page 2, using the highest concentration of the drugs to which a healthcare worker might be exposed during handling as referenced in the most recent edition of the Physician's Desk Reference or the package inserts of the testing drugs.

### TESTING CONDITIONS:

Standard Test Method Used:	ASTM D 6978-05
Deviation From Standard Test Method:	Used 1" (2.54cm) Permeation Cell
Analytical Method:	UV/VIS Spectrometry
Testing Temperature:	35.0°C ± 2.0
Collection System:	Closed Loop
Specimen Area Exposed:	5.067 cm <sup>2</sup>
Selected Data Points:	25/test
Number of Specimens Tested:	3/test
Location Sampled From:	Cuff
Comments/Other Conditions:	Magnetic stir bar was used in the sampling chamber

### DETECTION METHOD OF CHEMICAL PERMEATION; UV/VIS ABSORPTION SPECTROMETRY

Instrument: Perkin Elmer UV/VIS Spectrometer Lambda 25

UV/VIS Absorption Spectrometry was used to measure the absorbance of test chemicals which permeated through the specimens into the collection medium. The collection medium was circulated in a closed loop at 11 ml/minute of flow rate through the testing period. Data collection was performed according to the programmed schedule by means of UV Winlab software from the Perkin Elmer Corporation. The list of the characteristics wavelengths is shown in Table 3.

Table 3. Characteristics Wavelengths used in UV/VIS Absorption Spectrometry.

Test Chemical	Wave length (nm)
Carmustine (BCNU)	229
Cyclophosphamide (Cytoxan)	200
Doxorubicin Hydrochloride	232
Fluorouracil	269
Etoposide (Toposar)	205
Paclitaxel (Taxol)	231
Thiotepa	199

### SAMPLE CHARACTERISTICS

Table 4. Sample Characteristics

SAMPLE	THICKNESS (mm)	WEIGHT/UNIT AREA (g/m <sup>2</sup> )
	Average	
Carmustine (BCNU)	0.089	99.0
Cyclophosphamide (Cytoxan)	0.111	108.1
Doxorubicin Hydrochloride	0.112	108.1
Fluorouracil	0.111	108.1
Etoposide (Toposar)	0.107	108.1
Paclitaxel (Taxol)	0.109	108.1
Thiotepa	0.100	99.0

### CALCULATION:

Average permeation rate for each sampling time interval (except time = 0 minutes) was calculated using the equation below:

$$P_i = ((C_i - C_{i-1}) \times V_t) / ((T_i - T_{i-1}) \times A)$$

Where:

- P<sub>i</sub> = average permeation rate, ug/cm<sup>2</sup>/min. at time interval T<sub>i</sub> - T<sub>i-1</sub>
- C<sub>i</sub> = concentration of test chemical detected in collection medium, ug/l, at time T<sub>i</sub>
- V<sub>t</sub> = volume of collection medium, l
- i = an index number starting with i = 1 for the first sample
- T<sub>i</sub> = sampling time, minutes
- A = area of specimen in contact with the test chemical, cm<sup>2</sup>

## RESULTS

The permeation test results are listed in Table 5

Table 5 Permeation Test Results:

Test Chemical	Breakthrough* Detection Time	Steady State Permeation Rate
	Minutes	(Avg.) $\mu\text{g}/\text{cm}^2/\text{min.}$
Carmustine (BCNU) 3,300 ppm/ 3.3 mg/ml	34.0 (37.7, 34.0, 46.8)	0.7 (0.9, 0.9, 0.4)
Cyclophosphamide (Cytoxan) 20,000 ppm/ 20.0 mg/ml	No breakthrough was detected up to 240 minutes	N/A
Doxorubicin Hydrochloride 2,000 ppm/ 2.0 mg/ml	No breakthrough was detected up to 240 minutes	N/A
Fluorouracil 50,000 ppm/ 50.0 mg/ml	No breakthrough was detected up to 240 minutes	N/A
Etoposide (Toposar) 20,000 ppm/ 20.0 mg/ml	No breakthrough was detected up to 240 minutes	N/A
Paclitaxel (Taxol) 6,000 ppm/ 6.0 mg/ml	No breakthrough was detected up to 240 minutes	N/A
Thiotepa 10,000 ppm/ 10.0 mg/ml	166.1 (166.1, 180.8, 166.2)	0.1 (0.1, 0.1, 0.2)

\*Breakthrough detection time is the time in minutes measured from the start of the test to the sampling time that immediately precedes the sampling time at which the permeation rate reaches  $0.01 \mu\text{g}/\text{cm}^2/\text{min.}$

SHIELD Scientific B.V.



Cisco Robles  
General Manager

## ANALYTICAL SERVICES

**SUBJECT:** Test Report No BAN 178090/1a  
Amending Test Report No BAN 178090/1  
6 August 2013

**SAMPLE:** SHIELDskin™ ORANGE NITRILE™ 260  
SHIELDskin™ ORANGE NITRILE™ 300  
SHIELDskin XTREME™ ORANGE NITRILE™ 300 DI

**Test Laboratory:** SGS United Kingdom Ltd.  
Units 41 & 43, The Listerhills Park of Science and Commerce  
Campus Road,  
Bradford BD7 1 HR  
United Kingdom

**CONCLUSION:**

The products meet\*\* the overall migration limit as specified in EEC Commission Regulation 10/2011/EC for foodstuffs listed on page 2 and 3 in applications up to the temperature of 40°C (20°C for Iso-octane) for a contact time of 2 hours (30 minutes for Iso-octane). This product is suitable\*\* for contact with foodstuffs as detailed in EEC Council Directive 93/11/EEC and Council of Europe Resolution AP (2004) 4.



a) Rubber – Overall migration

Method: with reference to EN 1186-1:2002 for selection of conditions and test methods

EN1186-9:2002 aqueous food simulant by total immersion method  
EN1186-14:2002 substitute test

Simulant used	Test condition	Result (mg/dm <sup>2</sup> ) 1	Reporting Limit (mg/dm <sup>2</sup> )	Permissible Limit (mg/dm <sup>2</sup> )	Result
3% Acetic Acid (W/V) Aqueous Solution	2 hours at 40° C	6.7 *	3.0	10	Pass
10% Ethanol (V/V) Aqueous Solution	2 hours at 40° C	4.4 *	3.0	10	Pass
Fatty Food Substitute					
95% Ethanol	2 hours at 40° C	41.5*	3.0	10	Fail
Iso octane	0.5 hours at 20° C	ND*	3.0	10	Pass

NOTE:

1. mg/dm<sup>2</sup> = milligram per square decimeter
2. °C = degree Celsius
3. ND = Not Detected

Remark:

1. Test condition and simulant were specified by SHIELD Scientific B.V.
2. \* = The test data is based on first migration result only

Sample Received = 5th June 2013

The products meet the overall migration limit as specified in EEC Commission Regulation 10/2011/EC for foodstuffs listed below in applications up to the temperature of 40°C (20°C for Iso-octane) for a contact time of 2 hours (30 minutes for Iso-octane)

Test Conditions:

- a) Simulants/test media: 3% Acetic Acid, 10% Ethanol, 95% Ethanol, Iso-octane
- b) Temperature: 40°C (20°C for Iso-octane)
- c) Time: 2 hours (30 minutes for Iso-octane)

Date of Test: 11<sup>th</sup> July 2013 and 24<sup>th</sup> July 2013

The products are suitable\*\* for contact with the following food categories of foodstuffs as detailed in EEC Council Directive 85/572/EEC of 19th December 1985.

**01 Beverages**

01.01, 01.02, 01.03

**02 Cereals, cereal products, pastry, biscuits, cakes and other bakers' wares**

02.01, 02.02, 02.03, 02.04, 02.05A, 02.05B, 02.06A, 02.06B

**03 Chocolate, sugar and products thereof Confectionery products**

03.01, 03.02AI, 03.02AII, 03.02BII, 03.03A, 03.03B, 03.03.C

**04 Fruit, vegetables and products thereof**

04.01, 04.02A, 04.02B, 04.02CI, 04.02CII, 04.03A, 04.03B, 04.03C<sup>1</sup>, 04.04, 04.05A, 04.05B, 04.05CI, 04.05CIII

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\*\*If it can be demonstrated by means of an appropriate test that there is no fatty contact with the material  
SHIELD Scientific B.V. - Dr. Willem Dreeslaan 1 - 6721 ND Bennekom - The Netherlands  
Phone +31 (0)317 700 202 - Fax +31 (0)318 503 742 - E-mail: Info@shieldscientific.com

**06 Animal products and eggs**

06.01A<sup>1</sup>, 06.01B<sup>1</sup>, 06.02, 06.05A, 06.06A, 06.07A, 06.07B, 06.08

**07 Milk products**

07.01D, 07.04A, 07.05A, 07.05B

**08 Miscellaneous products**

08.01, 08.02A, 08.03AI, 08.03AII, 08.03BII, 08.04A, 08.04B, 08.05, 08.06A, 08.07<sup>1</sup>, 08.08A, 08.08B, 08.10A, 08.10B, 08.11, 08.12, 08.13A, 08.13B<sup>1</sup>, 08.14, 08.15, 08.16, 08.17

**SHIELD Scientific B.V.**

A handwritten signature in black ink, appearing to read 'C. Robles' with a stylized flourish underneath.

Cisco Robles  
General Manager