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SATRA reference: PRC0239440/1543/EN

Your reference: 5792 Issue 1

Date of report: 15th January 2016

Samples received: 5th January 2016

For the attention of: Robert Hill

Date(s) work carried out: 12th to 15th January 2016

TECHNICAL REPORT

Subject: Article 11A testing of gloves described as Nugard Nitrile examination glove in accordance with BS EN 374-3: 2003 resistance to permeation by chemicals against 40% sodium hydroxide.

Conditions of Issue:

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked \neq fall outside the UKAS Accreditation Schedule for SATRA. All interpretations of results of such tests and the comments based upon them are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

The uncertainty of the results (UoM) in this report is based on a standard uncertainty multiplied by a coverage factor $k=2$, which provides for a confidence level of approximately 95%.

Report signed by: Emma Norris
Position: Chemical Technologist
Department: Chemical & Analytical Technology

WORK REQUESTED:

Samples of gloves described as Nugard Nitrile examination glove (size 9 large) were obtained by SATRA from ULMA International on 5th January 2016 for testing in accordance with BS EN 374-3:2003 and with the performance requirements of BS EN 374-1:2003 to demonstrate ongoing production compliance with EC Directive 89 / 686 / EEC Article 11A. The gloves are certified by SATRA certificate number 5792 Issue 1. SATRA purchase order number: SATRA ART015.

CONCLUSION:

When tested in accordance with BS EN 374-3:2003 the samples of gloves described as Nugard Nitrile examination glove achieved the following performance levels. The full results are given in the tables below.

Chemical	Performance level
40% sodium hydroxide (CAS: 1310-73-2)	6

TESTING REQUIRED:

- BS EN 374:2003 Protective gloves against chemicals and micro-organisms Part 1: Terminology and performance requirements.
- BS EN 374:2003 Protective gloves against chemicals and micro-organisms Part 3: Determination of resistance to permeation by chemicals.

RESULTS AND REQUIREMENTS:

The performance levels are as given in table 1 of BS EN 374-1:2003 and are based on the lowest individual result achieved per chemical.

BS EN 374-1:2003 Table 1. Permeation performance levels

Permeation performance level	Measured breakthrough time (minutes)
1	>10
2	>30
3	>60
4	>120
5	>240
6	>480

Test specimen thicknesses less than 1mm are subject to a significant measurement uncertainty and are therefore provided for information only.

Test/Property	Specimen	Results		Performance
BS EN 374-3:2003 Chemical Permeation In accordance with SATRA SOP CAT-009	Nugard Nitrile examination glove	Chemical: 40% sodium hydroxide Detection system: Conductivity Collection medium: Deionised water Loop system: Closed Test temperature: 23°C		Level 6
		Sample thickness (mm)	Breakthrough time (mins)	
	1	0.09	>480	
	2	0.08	>480	
	3	0.08	>480	
	Mean	0.08		
	Lowest result		>480	
UoM ±		<1		
Appearance of sample after testing	No change			

Test/Property	Specimen	Results		Performance
BS EN 374-3:2003 Chemical Permeation In accordance with SATRA SOP CAT-009	Nugard Nitrile examination glove	Chemical: 40% sodium hydroxide Detection system: Conductivity Collection medium: Deionised water Loop system: Closed Test temperature: 23°C		Level 6
		Sample thickness (mm)	Breakthrough time (mins)	
	1	0.08	>480	
	2	0.07	>480	
	3	0.08	>480	
	Mean	0.08		
	Lowest result		>480	
UoM ±		<1		
Appearance of sample after testing	No change			

Test/Property	Specimen	Results		Performance
BS EN 374-3:2003 Chemical Permeation In accordance with SATRA SOP CAT-009	Nugard Nitrile examination glove	Chemical: 40% sodium hydroxide Detection system: Conductivity Collection medium: Deionised water Loop system: Closed Test temperature: 23°C		Level 6
		Sample thickness (mm)	Breakthrough time (mins)	
	1	0.09	>480	
	2	0.09	>480	
	3	0.09	>480	
	Mean	0.09		
	Lowest result		>480	
UoM ±		<1		
Appearance of sample after testing	No change			

APPENDICES:



Gloves described as Nugard Nitrile examination glove

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1. **GENERAL**
Work done or services undertaken are subject to the terms and conditions detailed below and all other conditions, warranties and representations, expressed or implied are hereby excluded.
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 - ii. Where SATRA has given consent to disclosure, the Customer shall draw the attention of the third party to these terms of business and the basis on which SATRA undertakes test, reporting and advising. The Customer shall indemnify SATRA for any failure to do so.
 - iii. The above items are submitted to the Customer as confidential documents. Confidentiality shall continue to apply after completion of the business, but shall cease to apply to information or knowledge which may come into the public domain.
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The laws of England shall govern all contracts and the parties submit to exclusive jurisdiction of the courts of England, unless otherwise agreed.

Issue Date: 1st October 2009