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Test Report

REPORT NO. MA5342/N

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Factory applied thread sealant

Loctite® 506 Dri Seal

CLIENT:

Henkel Ltd.
Wood Lane End
Hemel Hempstead
Hertfordshire
HP2 4RQ

reported by:

**DEEPA VIJAYAKUMAR
ANALYST**

DATE: 10 JUNE 2015

reviewed by:

**HANNAH SNELL
SECTION HEAD OF MATERIALS**

CLIENT'S REFERENCE: 4592016455

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

**SUITABILITY OF NON-METALLIC PRODUCTS FOR USE IN CONTACT WITH WATER INTENDED FOR HUMAN CONSUMPTION WITH REGARD TO THEIR EFFECT ON THE QUALITY OF THE WATER
WRAS TESTS OF EFFECT ON WATER QUALITY (BS 6920: 2014)
AUDIT TESTS; HIGH TEMPERATURE TESTS (BS6920: PART 3: 2014)**

INFORMATION AND GUIDANCE NOTE

WATER REGULATIONS ADVISORY SCHEME

The Scheme wishes to draw to the attention of product manufacturers and users that reports issued by accredited test laboratories do not of themselves constitute approval by the Scheme or the test laboratory. Only a letter from the Scheme, citing a Directory Reference Number, can be regarded as indicating approval.

1. SAMPLES FOR TESTING

General composition of product	polyacrylate aqueous emulsion base thread sealant
Trade name and reference of material	Loctite [®] 506 Dri Seal
Material manufacturer	Henkel Ireland
Submitting organisation	Henkel Ltd., UK
Batch number of product	4ED2792
Date of manufacture of product	May 2014
Method of manufacture of sample	information not provided
Sampling procedure	specially prepared test pieces
Description of sample	light blue opaque coating applied to a stainless steel fitting
Surface area of test piece	N/A
Number of articles constituting a test piece	1
Calibration mark of test containers	1 litre
Date of application	30 January 2015
Date of receipt of test samples	9 February 2015
Condition of samples on receipt	satisfactory
Method of packaging	plastic bag
Conditions of storage of the samples between receipt and testing	as instructed in BS6920-2.1: 2014: clause 5.2
Proposed use of the product	thread sealant

FACTORY APPLIED PRODUCTS

The samples were prepared in accordance with manufacturer's application instructions.

Samples prepared by	Henkel Ltd.
Mode of preparation of the product	product brushed onto screw threads of fittings supplied by Intertek
Nature of test plates	stainless steel compression fitting as described in BS 6920-2.1: 2014 clause 4.2.2 without the 2 screw collars
Number of coats	1
Wet film thickness of each coat	1mm
Application conditions	22°C
Curing conditions	20 minutes at 80°C
Date of preparation of the samples	30 January 2015

2. ODOUR AND FLAVOUR OF WATER

Number of tasters in the taste panel – 3

Date tests commenced – 17 March 2015

Extraction temperature – **23°C**

Extract 1

(i) chlorine free test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

(ii) chlorinated test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	bitter	2
3	nil	nil	<1

Extract 7 (final extract)

(ii) chlorinated test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

Comment - thus the samples of this product have been found to comply with the requirements of BS 6920: Part 1: clause 4 when extracted at **23°C**.

Extraction temperature – 85°C

Extract 1

(i) chlorine free test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	chemical	N/A	N/A
2	musty	N/A	N/A
3	musty	N/A	N/A

(ii) chlorinated test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	musty	N/A	N/A
2	musty	N/A	N/A
3	musty	N/A	N/A

Extract 7 (final extract)

(i) chlorine free test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

(ii) chlorinated test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

Comment - thus the sample of this product has been found to comply with the requirements of BS 6920: Part 1: clause 4 when extracted at 85°C.

3. THE EXTRACTION OF SUBSTANCES THAT MAY BE OF CONCERN TO PUBLIC HEALTH

Extracts were tested using African Green Monkey Cell Line (VERO ATCC CCL 81)

Extraction temperature – **23°C**

Date test commenced – 10 March 2015

Extract	Growth of cell tissue (monolayer)
Reagent blank	healthy, confluent
Zinc sulphate validation solution (cytotoxic)	cell death
Sample	healthy, confluent

Comment - thus the sample of this product has been found to give a non-cytotoxic response and therefore it has been found to comply with the requirements of BS 6920: Part 1: clause 7 when extracted at **23°C**.

4. THE EXTRACTION OF METALS

Extraction temperature – 85°C

Date test commenced – 9 March 2015

Number of extracts – 7

All analyses carried out at location A, Sunbury Technology Centre, on duplicate samples of the product as specified below

Aluminium, Antimony, Arsenic, Boron, Cadmium, Chromium, Iron, Lead, Manganese, Mercury, Nickel, Selenium: Inductively coupled plasma – mass spectrometry (ICP-MS)

Extract 1

Metal	Expression of the results	Max. admissible concentration	Reporting Limit	Concentration Final Extract		Determined Reagent Blanks	Metal fitting blank
				I	II		
Aluminium	Al µg/L	200	20.0	109.0	120.0	51.6	112.0
Antimony	Sb µg/L	5	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	As µg/L	10	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Boron	B µg/L	1000	100.0	326.0	365.0	172.0	323.0
Cadmium	Cd µg/L	5	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	Cr µg/L	50	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Iron	Fe µg/L	200	20.0	< 20.0	< 20.0	< 20.0	< 20.0
Lead	Pb µg/L	25	1.0	1.27	1.32	1.32	3.03
Manganese	Mn µg/L	50	5.0	5.29	< 5.0	< 5.0	< 5.0
Mercury	Hg µg/L	1	0.1	0.27	0.25	< 0.1	< 0.1
Nickel	Ni µg/L	20	2.0	2.01	< 2.0	< 2.0	7.32
Selenium	Se µg/L	10	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Extract 7

Metal	Expression of the results	Max. admissible concentration	Reporting Limit	Concentration Final Extract		Determined Reagent Blanks	Metal fitting blank
				I	II		
Aluminium	Al µg/L	200	20.0	< 20.0	< 20.0	< 20.0	< 20.0
Boron	B µg/L	1000	100.0	115.0	110.0	< 100	130.0
Nickel	Ni µg/L	20	2.0	3.29	< 2.0	< 2.0	< 2.0

Comment - thus the samples of this product have been found to comply with the requirements of BS 6920: Part 1: clause 8 when extracted at 85°C.

Further Comment - In the Extraction of Metals Test the concentration of lead found in the reagent blank exceeded the reporting limit of detection for this element. After investigation it was concluded, that the test was valid and that the results obtained for the product conform with the requirements for this test.

CONCLUSION

The sample of the product referred to in this report has been tested in accordance with the methods specified in BS 6920: Part 2: 2014 "Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water: Methods of test" (including High Temperature Tests in accordance with BS 6920: Part 3: 2014) and the requirements of the Water Regulations Advisory Scheme 'WRAS Materials Guidance, Version 2 dated 8 March 2013'.

This product has satisfied the criteria set out in BS 6920: Part 1: 2014 "Specification" and thus complies with the requirements of the Water Regulations Advisory Scheme Tests of Effect on Water Quality (BS 6920: 2014): Audit Tests / Odour & Flavour of Water / Cytotoxicity / Extraction of Metals / High Temperature Tests (85°C).

NO OTHER TESTS WERE UNDERTAKEN ON THIS PRODUCT

N.B The results specified in this report relate only to the sample of the product submitted for testing. Any changes in the nature or source of ingredients and the process of manufacture or application could affect the suitability of the product for use in contact with potable water.

Materials and products intended for use by a public water supply company in the preparation or conveyance of water may need to satisfy more comprehensive toxicological requirements as set specified by the Drinking Water Inspectorate. These additional requirements are necessary to ensure legal compliance with Regulation 31 of Water Supply (Water Quality) Regulations 2000.

NOTE FOR WRAS

Audit tests on product covered by our report ref. MA4119/C dated 9 August 2010 and your letter ref Hannah Lewis dated 10 December 2014 relating to WRAS approval number 1008503.

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