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Chesterton Customseal
Attn: Jorge Mellado
95 Excellence Drive
Wangara
WA 6065
AUSTRALIA

14/05/2024

Dear Jorge,

Please find the attached report to AS/NZS 4020:2018 (Incorporating Amendment No.1) for S1PW Two Colour Epoxy (Light Blue) submitted for testing.

Should you have any enquiries about the report or any other matters pertaining to the Standard please contact the laboratory on 61 8 7424 1512

Yours sincerely,

Peter Christopoulos
Senior Technical Officer Product Testing



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FINAL REPORT

Report ID : 382947

Report Information

Submitting Organisation : 00100964 : Chesterton Customseal
Account : 144549 : Chesterton Customseal
AWQC Reference : 144549-2023-CSR-3 : Prod Test: Blue Coating System
Project Reference : PT-5458
Product Designation : S1PW Two Colour Epoxy (Light Blue)
Composition of Product : 100% Solids (no other information disclosed by submitting organisation).
Product Manufacturer : AW Chesterton, Groveland, MA, USA.
Use of Product : In-Line/Epoxy Ceramic Coating System for coating of Pump, Valves, Tanks & Pipes.
Sample Selection: As provided by the submitting organisation.
Testing Requested : **AS/NZS 4020:2018 TESTING OF PRODUCTS FOR USE IN CONTACT WITH DRINKING WATER**
Product Type : Composite
Samples : Samples were prepared and controlled as described in Appendix A of AS/NZS 4020:2018 (Incorporating Amendment No.1)
Extracts : Extracts were prepared as described in Appendix/Clause C, D, E, F, H, 6.8.
Project Completion Date : 14-May-2024
Project Comment : Samples received 25-Sep-2023, testing commenced 19-Feb-2024. Coating system applied and cured by the submitting organisation prior to submission.

PLEASE NOTE THAT THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL

THE RESULTS STATED IN THIS REPORT RELATE TO THE SAMPLE OF THE PRODUCT SUBMITTED FOR TESTING TO AS/NZS 4020:2018. ANY CHANGES IN THE MATERIAL FORMULATION, PROCESS OF MANUFACTURE, THE METHOD OF APPLICATION, OR THE SURFACE AREA-TO-VOLUME RATIO IN THE END USE, COULD AFFECT THE SUITABILITY OF THE PRODUCT FOR USE IN CONTACT WITH DRINKING WATER



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Notes

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Summary of Results

APPENDIX/CLAUSE	RESULTS
C – Taste	Passed at an exposure of 40,000 mm ² per Litre.
D – Appearance	Passed at an exposure of 40,000 mm ² per Litre.
E – Growth of Aquatic Micro-organisms	Passed at an exposure of 15,000 mm ² per Litre.
F – Cytotoxic Activity	Passed at an exposure of 40,000 mm ² per Litre.
H – Metals	Passed at an exposure of 40,000 mm ² per Litre.
6.8 – Organic Compounds	Passed at an exposure of 40,000 mm ² per Litre.

Test Methods

Test(s) in Appendix	AWQC Test Method	NATA Accredited
C	T0320-01	Y
D	TO029-01 & TO018-01	Y
E	TO014-03	Y
F	TM-001	Y
H	TIC-006	Y

Organic Test Methods

Test(s) in Clause	Test Method	NATA Accredited
Clause 6.8	TMZ-M36	Y
	EP239	Y
	EP132-LL	Y
	EP075C	Y
	EP075ASIM	Y



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Laboratory Information

Laboratory	NATA accreditation ID
Product Testing	1115
Australian Laboratory Services Pty Ltd - New South Wales	825,992
Inorganic Chemistry - Physical	1115
Protozoology	1115
Organic Chemistry	1115
Inorganic Chemistry - Metals	1115
Inorganic Chemistry - Waste Water	1115

Summary Comment : Not applicable.



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CLAUSE 6.2 Taste

Sample Description	The sample consisted of four panels (with target coating to one side) with dimensions 75 mm x 100 mm providing a total surface area of approximately 40,000 mm ² per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.
Extraction Temperature	20°C ± 2°C.
Test Method	Taste (Appendix C)
Test Information	
Scaling Factor	Not applied.
Results	Not detected.
Evaluation	The product passed the requirements of clause 6.2 when tested at an exposure of 40,000 mm ² per Litre.
Number of Samples	2.
Test Comment	Not applicable.

Peter Christopoulos
APPROVED SIGNATORY



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CLAUSE 6.3 Appearance

Sample Description The sample consisted of four panels (with target coating to one side) with dimensions 75 mm x 100 mm providing a total surface area of approximately 40,000 mm² per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Appearance (Appendix D)

Scaling Factor Not applied.

Results

	<u>Test (- Blank)</u>	<u>Maximum Allowed</u>	<u>Units</u>
Colour	<1	5	HU
Turbidity	<0.1	0.5	NTU

Evaluation The product passed the requirements of clause 6.3 when tested at an exposure of 40,000 mm² per Litre.

Number of Samples 1.

Test Comment Not applicable.

Andrew Ford
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CLAUSE 6.4 Growth of Aquatic Micro-organisms

Sample Description The sample consisted of two panels (with target coating to one side) with dimensions 75 mm x 100 mm providing a total surface area of approximately 15,000 mm² per Litre. Extracts were prepared using 1000 mL volumes of test water.

Test Method Growth of Aquatic Micro-organisms (Appendix E)

Inoculum The volume of the inoculum was 100 mL

Scaling Factor Not applied.

Results			
Mean Dissolved Oxygen	Control		7.4 mg/L
Mean Dissolved Oxygen Difference	Positive Reference		4.3 mg/L
	Negative Reference		<0.1 mg/L
	Test		0.20 mg/L

Evaluation The product passed the requirements of clause 6.4 when tested at an exposure of 15,000 mm² per Litre.

Number of Samples 1.

Test Comment The positive reference value is outside the specified range in E10.2, however, the value indicates the organic substance (paraffin) still supported microbial growth, therefore is positive, and the test value is well below the positive reference value.

Thuy Diep
APPROVED SIGNATORY



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CLAUSE 6.5 Cytotoxic Activity

Sample Description The sample consisted of four panels (with target coating to one side) with dimensions 75 mm x 100 mm providing a total surface area of approximately 40,000 mm² per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Cytotoxic Activity (Appendix F)

Scaling Factor Not applied.

Results

24 HR	Non-cytotoxic response, healthy cell morphology with <30% cell death
48 HR	Non-cytotoxic response, healthy cell morphology with <30% cell death
72 HR	Non-cytotoxic response, healthy cell morphology with <30% cell death

Blank Control Results Blank; non-cytotoxic response, healthy cell morphology with <30% cell death

Positive Control Results Positive control; Cytotoxic response, unhealthy cell morphology with >70% cell death

The test extracts and blank extracts were used to prepare nutrient growth medium and subsequently used to grow a cell line (ATCC Number CCL 81) in the analysis. In addition zinc sulphate (0.4 mmol) was used for the positive control in the analysis.

Evaluation The product passed the requirements of clause 6.5 when tested at an exposure of 40,000 mm² per Litre.

Number of Samples 1.

Test Comment Not applicable.

Mira Maric
APPROVED SIGNATORY



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CLAUSE 6.7

Metals

Sample Description

The sample consisted of four panels (with target coating to one side) with dimensions 75 mm x 100 mm providing a total surface area of approximately 40,000 mm² per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

Extraction Temperature

20°C ± 2°C.

Test Method

Metals (Appendix H)

Scaling Factor

Not applied.

Method of Analysis

Concentration of the metals described in Table 2 of the AS/NZS 4020:2018 are determined as follows:

Aluminium, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium and Silver by Inductively Coupled Plasma Mass Spectrometry.

Results	Limit of Reporting mg/L	Blank mg/L	Test 1 mg/L	Test 2 mg/L	Max Allowed mg/L
Final Extract					
Aluminium	0.001	0.007	0.011	0.009	0.2
Antimony	0.0003	<0.0003	<0.0003	<0.0003	0.003
Arsenic	0.00006	<0.00006	<0.00006	<0.00006	0.01
Barium	0.0003	0.0004	0.0005	0.0005	0.7
Boron	0.020	0.020	0.042	0.035	1.4
Cadmium	0.0001	<0.0001	<0.0001	<0.0001	0.002
Chromium	0.0001	0.0002	0.0002	0.0003	0.05
Copper	0.0001	0.0003	0.0002	0.0002	2.0
Iron	0.0005	0.0008	0.0010	<0.0005	0.3
Lead	0.0001	<0.0001	<0.0001	<0.0001	0.01
Manganese	0.0001	<0.0001	<0.0001	<0.0001	0.1
Mercury	0.00003	<0.00003	<0.00003	<0.00003	0.001
Molybdenum	0.0001	<0.0001	<0.0001	<0.0001	0.05
Nickel	0.0002	<0.0002	0.0007	<0.0002	0.02
Selenium	0.0001	<0.0001	<0.0001	<0.0001	0.01
Silver	0.00002	<0.00002	<0.00002	<0.00002	0.1

Evaluation

The product passed the requirements of clause 6.7 when tested at an exposure of 40,000 mm² per Litre.

Number of Samples

1.

Test Comment

Not applicable.

Dzung Bui
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CLAUSE 6.8 Organic Compounds

Sample Description The sample consisted of four panels (with target coating to one side) with dimensions 75 mm x 100 mm providing a total surface area of approximately 40,000 mm² per Litre. Extracts were prepared using 750 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Organic Compounds (Clause 6.8). The maximum allowed (Max Allowed) values are taken from the Australian Drinking Water Guidelines and Drinking-water Standards for New Zealand. Please note, some reported compounds have no guideline value.

Scaling Factor Not applied.

Results

Organic Compound

Nitrosamines	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2406905	ES2406905	
N-Nitrosodimethylamine (NDMA)	<0.003	<0.003	0.1 µg/L

Organic Compound

Phenols	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2406905	ES2406905	
2 4 5-trichlorophenol	<1.0	<1.0	
2 4 6-trichlorophenol	<1.0	<1.0	20 µg/L
2 4-dichlorophenol	<1.0	<1.0	200 µg/L
2 4-dimethylphenol	<1.0	<1.0	
2 6-dichlorophenol	<1.0	<1.0	
2-chlorophenol	<1.0	<1.0	300 µg/L
2-nitrophenol	<1.0	<1.0	
4-chloro-3-methylphenol	<1.0	<1.0	
m+p cresol	<2.0	<2.0	
o-cresol	<1.0	<1.0	
pentachlorophenol	<2.0	<2.0	9 µg/L
phenol	<1.0	<1.0	

Organic Compound

Phthalate Esters	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2406905	ES2406905	
Bis(2-ethylhexyl) phthalate	<10	<10	10 µg/L
Butyl benzyl phthalate	<2	<2	
Di(2-ethylhexyl) adipate	<2	<2	
Diethyl phthalate	<2	<2	
Dimethyl phthalate	<2	<2	
Di-n-butyl phthalate	<2	<2	
Di-n-octyl phthalate	<2	<2	



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Organic Compound

Polycyclic Aromatic Hydrocarbons

	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2406905	ES2406905	
Acenaphthene	<0.02	<0.02	
Acenaphthylene	<0.02	<0.02	
Anthracene	<0.02	<0.02	
Benzo(a)anthracene	<0.02	<0.02	
Benzo(a)pyrene	<0.005	<0.005	0.01 µg/L
Benzo(a)pyrene TEQ	<0.005	<0.005	
Benzo(b+j)fluoranthene	<0.02	<0.02	
Benzo(ghi)perylene	<0.02	<0.02	
Benzo(k)fluoranthene	<0.02	<0.02	
Chrysene	<0.02	<0.02	
Dibenzo(a-h)anthracene	<0.02	<0.02	
Fluoranthene	<0.02	<0.02	
Fluorene	<0.02	<0.02	
Indeno(123-cd)pyrene	<0.02	<0.02	
Naphthalene	<0.02	<0.02	
PAH - Total	<0.005	<0.005	
Phenanthrene	<0.02	<0.02	
Pyrene	<0.02	<0.02	



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Organic Compound

Organic Compound	Blank µg/L	Test µg/L	Max Allowed
Volatile Organic Compounds GCMS			
1 1 1 2-Tetrachloroethane	<1	<1	
1 1 1-Trichloroethane	<1	<1	
1 1 2 2-Tetrachloroethane	<1	<1	
1 1 2-Trichloroethane	<1	<1	
1 1-Dichloropropene	<1	<1	
1 2 3-Trichlorobenzene	<1	<1	
1 2 3-Trichloropropane	<1	<1	
1 2 4-Trichlorobenzene	<1	<1	
1 2 4-Trimethylbenzene	<1	<1	
1 2-Dibromo-3-chloropropane	<1	<1	1 µg/L
1 2-Dibromoethane	<1	<1	1 µg/L
1 2-Dichlorobenzene	<1	<1	1500 µg/L
1 2-Dichloroethane	<1	<1	3 µg/L
1 2-Dichloropropane	<1	<1	
1 3 5-Trimethylbenzene	<1	<1	
1 3-Dichlorobenzene	<1	<1	
1 3-Dichloropropane	<1	<1	
1 4-Dichlorobenzene	<1	<1	40 µg/L
1,1-Dichloroethane	<1	<1	
1,1-Dichloroethene	<1	<1	30 µg/L
2,2-Dichloropropane	<1	<1	
2-Chlorotoluene	<1	<1	
4-Chlorotoluene	<1	<1	
4-Isopropyltoluene	<1	<1	
Benzene	<1	<1	1 µg/L
Bromobenzene	<1	<1	
Bromochloromethane	<1	<1	
Bromodichloromethane	<1	<1	60 µg/L
Bromoform	<1	<1	100 µg/L
Bromomethane	<4	<4	
Carbon tetrachloride	<1	<1	3 µg/L
Chlorobenzene	<1	<1	300 µg/L
Chloroethane	<4	<4	
Chloroform	1	1	400 µg/L
Chloromethane	<4	<4	
cis-1 3-Dichloropropene	<1	<1	
cis-1,2-Dichloroethene	<1	<1	
Dibromochloromethane	<1	<1	150 µg/L
Dibromomethane	<1	<1	
Dichlorodifluoromethane	<1	<1	
Dichloromethane	<4	<4	4 µg/L
Ethylbenzene	<1	<1	300 µg/L
Hexachlorobutadiene	<0.7	<0.7	0.7 µg/L
Isopropylbenzene	<1	<1	
m+p-Xylenes - Total	<2	<2	



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Organic Compound

Organic Compound	Blank µg/L	Test µg/L	Max Allowed
Volatile Organic Compounds GCMS			
Naphthalene	<1	<1	
n-Butylbenzene	<1	<1	
n-Propylbenzene	<1	<1	
o-Xylene	<1	<1	
sec-Butylbenzene	<1	<1	
Styrene	<1	<1	30 µg/L
tert-Butylbenzene	<1	<1	
Tetrachloroethene	<1	<1	50 µg/L
Toluene	<1	<1	800 µg/L
Total 1 2-dichloroethene	<2	<2	60 µg/L
Total 1 3-dichloropropene	<2	<2	20 µg/L
Total Trichlorobenzene	<2	<2	30 µg/L
Total Xylene	<3	<3	600 µg/L
trans-1 3-Dichloropropene	<1	<1	
trans-1,2-Dichloroethene	<1	<1	
Trichloroethene	<1	<1	
Trichlorofluoromethane	<1	<1	
Trihalomethanes - Total	<4	<4	250 µg/L
Vinyl chloride	<0.3	<0.3	0.3 µg/L

Evaluation The product passed the requirements of clause 6.8 when tested at an exposure of 40,000 mm² per Litre.

Number of Samples 1.

Test Comment Not applicable.

Rashed Hoque

APPROVED SIGNATORY



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REPORT ATTACHMENT 1.

REPORT ID 382947
PROJECT REFERENCE PT-5458
DATE 14-05-2024

