

AUSTRALIAN WATER
QUALITY CENTRE

Our Reference : REF130015-0004
Enquiries : M. Marchesan
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Mr Craig Chapman
Parbury Technologies Pty Ltd
P.O. Box 336
Wyong NSW 2259

12 JUL

Dear Mr Chapman,

Attached are reports to AS 4020(Int)-1994 for Indextene HDPE and Testudo Membranes submitted for testing. The products passed all the requirements of the Standard at the exposures of 7500 mm² and 6000 mm² per Litre respectively.

Should you have any enquiries about the report or any other matters pertaining to the Standard please contact Marilena Marchesan or Michael Glasson on (08) 8259 0332.

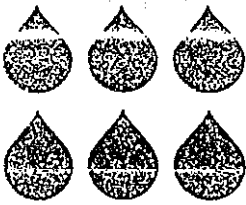
Yours sincerely,

M. Marchesan

M. Marchesan
SENIOR TECHNICAL OFFICER

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A BUSINESS UNIT OF THE SOUTH AUSTRALIAN WATER CORPORATION



AUSTRALIAN WATER
QUALITY CENTRE



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Registration No 1115
Registration No 1300

Chemical Testing
Biological Testing

CERTIFICATE OF TEST

REPORT NUMBER 4007/92.540
SAMPLE REFERENCE 130015-0005
DATE 17/06/99
TRADE NAME OF PRODUCT TESTUDO.
COMPOSITION OF PRODUCT POLYESTER REINFORCED POLYMER - BITUMEN MEMBRANE.
PRODUCT MANUFACTURER INDFX, PREFORMED MEMBRANES
SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.
USE OF PRODUCT WATERPROOFING MEMBRANE, TORCH APPLIED.
TESTING REQUESTED AS 4020(Int)-1994

PRODUCTS FOR USE IN CONTACT WITH WATER INTENDED FOR HUMAN CONSUMPTION WITH REGARD TO THEIR EFFECT ON THE QUALITY OF WATER

(ON SAMPLES RECEIVED AT THE AUSTRALIAN WATER QUALITY CENTRE)

SAMPLES SAMPLES WERE PREPARED AND CONTROLLED AS DESCRIBED IN APPENDIX A OF AS 4020(Int)-1994

EXTRACTS EXTRACTS WERE PREPARED AS DESCRIBED IN APPENDICES B - G AS INDICATED.

TEST REPORT

COMMENCES ON PAGE 2. PLEASE NOTE THAT THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL

M. Marchesan

M. MARCHESAN
APPROVED SIGNATORY



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PAGE 1 OF 10

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 5 - TASTE OF WATER EXTRACTS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration No. 1115)

REPORT NUMBER 400/92.540

SAMPLE REFERENCE 130015-0005

DATE 17/06/99

TRADE NAME OF PRODUCT TESTUDO.

COMPOSITION OF PRODUCT POLYESTER REINFORCED POLYMER – BITUMEN MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE, TORCH APPLIED.

DESCRIPTION OF SAMPLE The manufacturer supplied the testudo membrane panels fixed to one sandblasted glass plate with the dimensions 75 x 100 mm and providing a total surface area of 7500 mm².

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 TASTE OF WATER EXTRACT (APPENDIX B)

SCALING FACTOR The sample was diluted to provide an exposure of 6000 mm² per Litre.

RESULTS No tastes were detected in the extracts prepared with either the chlorinated or unchlorinated water from the products or the controls.

EVALUATION The product passed the requirements of clause 5 at an exposure of 6000 mm² per Litre.

NUMBER OF SAMPLES Two samples were tested.

M. Drikas
M.DRIKAS - SENIOR CHEMIST
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 6 - APPEARANCE OF WATER EXTRACTS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration No. 1115)

REPORT NUMBER 4007/92.540

SAMPLE REFERENCE 130015-0005

DATE 17/06/99

TRADE NAME OF PRODUCT TESTUDO.

COMPOSITION OF PRODUCT POLYESTER REINFORCED POLYMER – BITUMEN MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE, TORCH APPLIED.

DESCRIPTION OF SAMPLE The manufacturer supplied the testudo membrane panels fixed to two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm².

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 APPEARANCE OF WATER EXTRACT (APPENDIX C)


SCALING FACTOR Not applied.

RESULTS

	Test (- Blank)	Maximum Allowed	
Colour	< 1.0	5.0	HU
Turbidity	0.01	0.5	NTU

EVALUATION The product passed the requirements of clause C at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES One sample was tested.


A. GLATZ - SENIOR CHEMIST
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 7 - GROWTH OF MICRO-ORGANISMS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration Nos. 1390 and 1115)

REPORT NUMBER 4007/92.540

SAMPLE REFERENCE 130015-0005

DATE 17/06/99

TRADE NAME OF PRODUCT TESTUDO.

COMPOSITION OF PRODUCT POLYESTER REINFORCED POLYMER – BITUMEN MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE, TORCH APPLIED.

DESCRIPTION OF SAMPLE The manufacturer supplied the testudo membrane panels fixed to two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm².

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 GROWTH OF AQUATIC MICRO-ORGANISMS IN EXTRACT (APPENDIX D)

INOCULUM The volume of inoculum was 100 mL.

SCALING FACTOR The results were scaled to an exposure of 6000 mm² per Litre.

RESULTS

Mean Dissolved Oxygen	Control	6.9	mg/L
Mean Dissolved Oxygen Difference	Positive Reference	5.0	mg/L
	Negative Reference	0	mg/L
	Test	1.6	mg/L

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 7 - GROWTH OF MICRO-ORGANISMS

REPORT NUMBER 4007/92.540
SAMPLE REFERENCE 130015-0005
DATE 17/06/99
TEST METHOD AS 4020(Int)-1994 GROWTH OF AQUATIC MICRO-ORGANISMS IN EXTRACT (APPENDIX D)

RESULTS

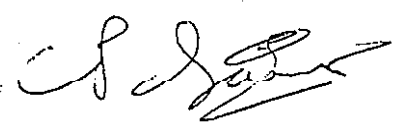
		Negative Reference	Test
<i>Pseudomonas aeruginosa</i> per 100 mL	- 1	0	0
	- 2	0	0
	- 3	0	0
Coliform organisms per 100 mL	- 1	0	0
	- 2	0	0
	- 3	0	0

EVALUATION

The numbers of microorganisms and the Mean Dissolved Oxygen Difference in the extracts did not exceed the maxima allowed, and accordingly the product passed the requirements of clause 7 at an exposure of 6000 mm² per Litre.

NUMBER OF SAMPLES

One sample was tested.



C.P SAINT - SENIOR MICROBIOLOGIST
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.1 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - NON METALLIC SUBSTANCES

TESTING LABORATORY INSTITUTE OF MEDICAL AND VETERINARY SCIENCE
FROME ROAD, ADELAIDE, SOUTH AUSTRALIA
(NATA Registration No. 2348)

REPORT NUMBER 4007/92.540

SAMPLE REFERENCE 130015-0005

DATE 17/06/99

TRADE NAME OF PRODUCT INDEX, PREFORMED MEMBRANES.

COMPOSITION OF PRODUCT POLYESTER REINFORCED POLYMER - BITUMEN MEMBRANE.

PRODUCT MANUFACTURER INDEX.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE, TORCH APPLIED.

DESCRIPTION OF SAMPLE The manufacturer supplied the testudo membrane panels fixed to two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm².

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 CYTOTOXICITY OF SUBSTANCES THAT LEACH FROM PRODUCTS (APPENDIX E)

SCALING FACTOR Not applied.

RESULTS Confluent growth of regularly-shaped cells was observed in the containers with the control and test extracts.

EVALUATION No cytotoxic response was detected; accordingly the product passed the requirements of clause 8.1 relating to cytotoxicity when tested at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES One sample was tested.

L. E. Payne

L. PAYNE - SENIOR TECHNICIAN
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.1 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - NON METALLIC SUBSTANCES

REPORT NUMBER 4007/92.540
 SAMPLE REFERENCE 130015-0005
 DATE 17/06/99
 TEST METHOD AS 4020(Int)-1994 GENETIC TOXICITY OF SUBSTANCES THAT I FACH FROM PRODUCTS (APPENDIX F)

RESULTS

<u>BACTERIAL STRAIN</u>	<u>NUMBER OF REVERTANTS per PLATE</u>			
	S9	BLANK	TEST	<u>POSITIVE CONTROLS</u> NPD (20ug) 2 - AF (20ug)
<i>Salmonella typhimurium</i> TA98 Mean ± Standard deviation	-	15, 13, 26 18.0 ± 7.0	14, 16, 17 15.7 ± 1.5	753, 893, 636 760.7 ± 128.7
	+	24, 23, 16 21.0 ± 4.4	17, 15, 22 18.0 ± 3.6	- 406, 393, 426 408.3 ± 16.6
<i>Salmonella typhimurium</i> TA100 Mean ± Standard deviation	-	139, 118, 149 135.3 ± 15.8	121, 95, 134 116.7 ± 19.9	535, 522, 533 530.0 ± 7.0
	+	150, 135, 180 155.0 ± 22.9	160, 104, 126 130.0 ± 28.2	- 678, 692, 693 687.7 ± 8.4
<i>Salmonella typhimurium</i> TA102 Mean ± Standard deviation	-	278, 270, 282 276.7 ± 6.1	267, 259, 264 263.3 ± 4.0	641, 582, 611 611.3 ± 29.5
	+	293, 280, 321 298.0 ± 21.0	292, 306, 306 301.3 ± 8.1	

COMMENTS

S9 was used as a metabolic activator. NPD (4-nitro-o-phenylenediamine), Azide, and Mitomycin C are specific positive controls for strains TA 98, TA 100 and TA 102 respectively while 2 - AF (2-aminofluorene) when used in conjunction with S9 is a positive control for both TA98 and TA100.

EVALUATION

The differences in the mean number of revertants between the blank and test extracts do not exceed two standard deviations; accordingly there is no evidence of any mutagenic effect. The product passed the requirements of clause 8.1 relating to genetic toxicity when tested at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES

One sample was tested.

M. Marchesan

M. MARCHESAN - SENIOR TECHNICAL OFFICER
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.2 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - METALS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration No. 1115)

REPORT NUMBER 400/92.540

SAMPLE REFERENCE 130015-0005

DATE 17/06/99

TRADE NAME OF PRODUCT TESTUDO.

COMPOSITION OF PRODUCT POLYESTER REINFORCED POLYMER – BITUMEN MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE, TORCH APPLIED.

DESCRIPTION OF SAMPLE The manufacturer supplied the testudo membrane panels fixed to two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm².

TEST METHOD AS 4020(Int)-1994 THE EXTRACTION OF METALS (APPENDIX G)

SCALING FACTOR Not applied.

METHODS OF ANALYSIS-

All methods used to determine concentrations of metals are based on those described in the 17th edition of *Standard Methods for the Examination of Water and Wastewater* published by the American Public Health Association (1989). The methods have been adapted for the instrumentation in use at the Australian Water Quality Centre.

Concentrations of the metals described in Table 1 of the AS-4020(Int)-1994 are determined as follows:

Antimony, Arsenic, Mercury and Selenium by vapour generation and atomic absorption spectrophotometry (Varian).

Cadmium, Lead, Nickel and Silver using graphite furnace and atomic absorption spectrophotometry (Varian).

Barium and Chromium by inductively coupled plasma atomic emission spectrometry.

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.2 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - METALS

REPORT NUMBER 4007/92.510
SAMPLE REFERENCE 130015-0005
DATE 17/06/99
TEST METHOD AS 4020(Int)-1994 THE EXTRACTION OF METALS (APPENDIX G)

RESULTS

	Limit of Detection µg/L	Blank µg/L	Test 1 µg/L	Test 2 µg/L	Max. Allowed µg/L
Antimony	1.0	< 1.0	< 1.0	< 1.0	10.
Arsenic	2.0	< 2.0	< 2.0	< 2.0	50.
Barium	5.0	< 5.0	< 5.0	< 5.0	1000.
Cadmium	0.2	< 0.2	< 0.2	< 0.2	5.
Chromium	1.0	< 1.0	1.0	< 1.0	50.
Lead	1.0	< 1.0	< 1.0	< 1.0	50.
Mercury	0.3	< 0.3	< 0.3	< 0.3	1.
Nickel	1.0	< 1.0	< 1.0	< 1.0	50.
Selenium	1.0	< 1.0	< 1.0	< 1.0	10.
Silver	0.2	< 0.2	< 0.2	< 0.2	10.

EVALUATION

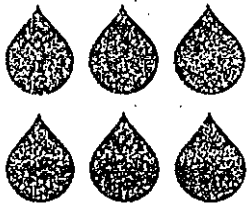
The results from the 24hr extraction complied with the requirements of clause 8.2 when tested at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES

Two samples tested - one extract prepared from each.


A. GLATZ - SENIOR CHEMIST
APPROVED SIGNATORY

END OF REPORT



AUSTRALIAN WATER
QUALITY CENTRE



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Registration No 1115
Registration No 1090

Chemical Testing
Biological Testing

CERTIFICATE OF TEST

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEXTENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

TESTING REQUESTED AS 4020(Int)-1994

PRODUCTS FOR USE IN CONTACT WITH WATER INTENDED FOR HUMAN CONSUMPTION WITH REGARD TO THEIR EFFECT ON THE QUALITY OF WATER

(ON SAMPLES RECEIVED AT THE AUSTRALIAN WATER QUALITY CENTRE)

SAMPLES SAMPLES WERE PREPARED AND CONTROLLED AS DESCRIBED IN APPENDIX A OF AS 4020(Int)-1994

EXTRACTS EXTRACTS WERE PREPARED AS DESCRIBED IN APPENDICES B - G AS INDICATED.

TEST REPORT

COMMENCES ON PAGE 2. PLEASE NOTE THAT THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL

M. Marchesan

M. MARCHESAN
APPROVED SIGNATORY



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A BUSINESS UNIT OF THE SOUTH AUSTRALIAN WATER CORPORATION

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 5 - TASTE OF WATER EXTRACTS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration No. 1115)

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEXTENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

DESCRIPTION OF SAMPLE The indextene primer was applied to the surface of one sandblasted glass plate with the dimensions 75 x 100 mm and providing a total surface area of 7500 mm². After a 15 minute period the HDPE membrane was pressed on to the primed surface of the glass plate. The sample was then cured for 24 hrs at 20°C.

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 TASTE OF WATER EXTRACT (APPENDIX B)

SCALING FACTOR Not applied.

RESULTS No tastes were detected in the extracts prepared with either the chlorinated or unchlorinated water from the products or the controls.

EVALUATION The product passed the requirements of clause 5 at an exposure of 7500 mm² per Litre.

NUMBER OF SAMPLES Two samples were tested.

M. Drikas
M. DRIKAS - SENIOR CHEMIST
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 6 - APPEARANCE OF WATER EXTRACTS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration No. 1115)

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEXTENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

DESCRIPTION OF SAMPLE The indextene primer was applied to the surface of two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm². After a 15 minute period the HDPE membrane was pressed on to the primed surface of the glass plates. The samples were then cured for 24 hrs at 20°C.

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 APPEARANCE OF WATER EXTRACT (APPENDIX C)


SCALING FACTOR Not applied.

RESULTS

	Test (- Blank)	Maximum Allowed	
Colour	< 1.0	5.0	HU
Turbidity	0.05	0.5	NTU

EVALUATION The product passed the requirements of clause 6 at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES One sample was tested.


A. GLATZ - SENIOR CHEMIST
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 7 - GROWTH OF MICRO-ORGANISMS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration Nos. 1390 and 1115)

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEXTENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

DESCRIPTION OF SAMPLE The indextene primer was applied to the surface of two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm². After a 15 minute period the HDPE membrane was pressed on to the primed surface of the glass plates. The samples were then cured for 24 hrs at 20°C.

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 GROWTH OF AQUATIC MICRO-ORGANISMS IN EXTRACT (APPENDIX D)

INOCULUM The volume of inoculum was 100 mL.

SCALING FACTOR Not applied.

RESULTS

Mean Dissolved Oxygen	Control	7.3	mg/L
Mean Dissolved Oxygen Difference	Positive Reference	5.1	mg/L
	Negative Reference	0.2	mg/L
	Test	1.4	mg/L

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 7 - GROWTH OF MICRO-ORGANISMS

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TEST METHOD AS 4020(Int)-1994 GROWTH OF AQUATIC MICRO-ORGANISMS IN EXTRACT (APPENDIX D)

RESULTS

		Negative Reference	Test
<i>Pseudomonas aeruginosa</i> per 100 mL	- 1	0	0
	- 2	0	0
	- 3	0	0
Coliform organisms per 100 mL	- 1	0	0
	- 2	0	0
	- 3	0	0

EVALUATION

The numbers of microorganisms and the Mean Dissolved Oxygen Difference in the extracts did not exceed the maxima allowed, and accordingly the product passed the requirements of clause 7 at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES

One sample was tested.



C.P SAINT - SENIOR MICROBIOLOGIST
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.1 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - NON METALLIC SUBSTANCES

TESTING LABORATORY INSTITUTE OF MEDICAL AND VETERINARY SCIENCE
FROME ROAD, ADELAIDE, SOUTH AUSTRALIA
(NATA Registration No. 2348)

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEX IENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

DESCRIPTION OF SAMPLE The indextene primer was applied to the surface of two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm². After a 15 minute period the HDPE membrane was pressed on to the primed surface of the glass plates. The samples were then cured for 24 hrs at 20°C.

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 . CYTOTOXICITY OF SUBSTANCES THAT LEACH FROM PRODUCTS (APPENDIX E)

SCALING FACTOR Not applied.

RESULTS Confluent growth of regularly-shaped cells was observed in the containers with the control and test extracts.

EVALUATION No cytotoxic response was detected; accordingly the product passed the requirements of clause 8.1 relating to cytotoxicity when tested at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES One sample was tested.

L. E. Payne

L. PAYNE - SENIOR TECHNICIAN
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.1 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - NON METALLIC SUBSTANCES

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEXTENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX. PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

DESCRIPTION OF SAMPLE The indextene primer was applied to the surface of two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm². After a 15 minute period the HDPE membrane was pressed on to the primed surface of the glass plates. The samples were then cured for 24 hrs at 20°C.

Extracts were prepared using 1000 mL volumes of water.

TEST METHOD AS 4020(Int)-1994 GENETIC TOXICITY OF SUBSTANCES THAT LEACH FROM PRODUCTS (APPENDIX F)

SCALING FACTOR Not applied.

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.1 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - NON METALLIC SUBSTANCES

REPORT NUMBER 4007/92.539
 SAMPLE REFERENCE 130015-0004
 DATE 25/06/99
 TEST METHOD AS 4020(Int)-1994 GENETIC TOXICITY OF SUBSTANCES THAT LEACH FROM PRODUCTS (APPENDIX F)

RESULTS

BACTERIAL STRAIN	NUMBER OF REVERTANTS per-PLATE				
	S9	BLANK	TEST	POSITIVE CONTROLS	
				<u>NPD</u> (20ug)	<u>2 - AF</u> (20ug)
<i>Salmonella typhimurium</i> TA98	-	15, 13, 26	24, 18, 13	753, 893, 636	
Mean ± Standard deviation		18.0 ± 7.0	18.3 ± 5.5	760.7 ± 128.7	
	+	24, 23, 16	15, 13, 16	-	406, 393, 426
Mean ± Standard deviation		21.0 ± 4.4	14.7 ± 1.5	-	408.3 ± 16.6
				<u>AZIDE</u> (1.0ug)	<u>2 - AF</u> (20ug)
<i>Salmonella typhimurium</i> TA100	-	139, 118, 149	107, 161, 101	535, 522, 533	
Mean ± Standard deviation		135.3 ± 15.8	123.0 ± 33.0	530.0 ± 7.0	
	+	150, 135, 180	134, 137, 133	-	678, 692, 693
Mean ± Standard deviation		155.0 ± 22.9	134.7 ± 2.1	-	687.7 ± 8.4
				<u>MITOMYCIN C</u> (2ug)	
<i>Salmonella typhimurium</i> TA102	-	278, 270, 282	264, 246, 286	641, 582, 611	
Mean ± Standard deviation		276.7 ± 6.1	265.3 ± 20.0	611.3 ± 29.5	
	+	293, 280, 321	310, 302, 310		
Mean ± Standard deviation		298.0 ± 21.0	307.3 ± 4.6		

COMMENTS

S9 was used as a metabolic activator. NPD (4-nitro-o-phenylenediamine), Azide, and Mitomycin C are specific positive controls for strains TA 98, TA 100 and TA 102 respectively while 2 - AF (2-aminofluorene) when used in conjunction with S9 is a positive control for both TA98 and TA100.

EVALUATION

The differences in the mean number of revertants between the blank and test extracts do not exceed two standard deviations; accordingly there is no evidence of any mutagenic effect. The product passed the requirements of clause 8.1 relating to genetic toxicity when tested at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES

One sample was tested.

M. Marchesan

M. MARCHESAN - SENIOR TECHNICAL OFFICER
APPROVED SIGNATORY

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.2 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - METALS

TESTING LABORATORY AUSTRALIAN WATER QUALITY CENTRE
PORT WAKEFIELD ROAD, BOLIVAR, SOUTH AUSTRALIA
(NATA Registration No. 1115)

REPORT NUMBER 4007/92.539

SAMPLE REFERENCE 130015-0004

DATE 25/06/99

TRADE NAME OF PRODUCT INDEXTENE HDPE.

COMPOSITION OF PRODUCT SELF ADHESIVE BITUMENOUS MEMBRANE.

PRODUCT MANUFACTURER INDEX, PREFORMED MEMBRANES.

SUBMITTING ORGANISATION PARBURY TECHNOLOGIES PTY LTD, LUCCA RD, NORTH WYONG, NSW.

USE OF PRODUCT WATERPROOFING MEMBRANE.

DESCRIPTION OF SAMPLE The indextene primer was applied to the surface of two sandblasted glass plates with the dimensions 75 x 100 mm and providing a total surface area of 15000 mm². After a 15 minute period the HDPE membrane was pressed on to the primed surface of the glass plates. The samples were then cured for 24 hrs at 20°C.

TEST METHOD AS 4020(Int)-1994 THE EXTRACTION OF METALS (APPENDIX G)

SCALING FACTOR Not applied.

METHODS OF ANALYSIS-

All methods used to determine concentrations of metals are based on those described in the 17th edition of *Standard Methods for the Examination of Water and Wastewater* published by the American Public Health Association (1989). The methods have been adapted for the instrumentation in use at the Australian Water Quality Centre.

Concentrations of the metals described in Table 1 of the AS-4020(Int)-1994 are determined as follows:

Antimony, Arsenic, Mercury and Selenium by vapour generation and atomic absorption spectrophotometry (Varian).

Cadmium, Lead, Nickel and Silver using graphite furnace and atomic absorption spectrophotometry (Varian).

Barium and Chromium by inductively coupled plasma atomic emission spectrometry.

TEST REPORT FOR AS 4020(INT)-1994

CLAUSE 8.2 - EXTRACTION OF SUBSTANCES OF CONCERN TO PUBLIC HEALTH - METALS

REPORT NUMBER 4007/92.530
SAMPLE REFERENCE 130015-0004
DATE 25/06/99
TEST METHOD AS 4020(Int)-1994 THE EXTRACTION OF METALS (APPENDIX G)

RESULTS

	Limit of Detection µg/L	Blank µg/L	Test 1 µg/L	Test 2 µg/L	Max. Allowed µg/L
Antimony	1.0	<1.0	<1.0	<1.0	10.
Arsenic	2.0	<2.0	<2.0	<2.0	50.
Barium	5.0	<5.0	<5.0	<5.0	1000.
Cadmium	0.2	<0.2	<0.2	<0.2	5.
Chromium	1.0	<1.0	<30.0	<30.0	50.
Lead	1.0	<1.0	<1.0	<1.0	50.
Mercury	0.3	<0.3	<0.3	<0.3	1.
Nickel	1.0	<1.0	2.0	<1.0	50.
Selenium	1.0	<1.0	<1.0	<1.0	10.
Silver	0.2	<0.2	<0.2	<0.2	10.

EVALUATION

The results from the 24hr extraction complied with the requirements of clause 8.2 when tested at an exposure of 15000 mm² per Litre.

NUMBER OF SAMPLES

Two samples tested -one extract prepared from each.


A. GLATZ - SENIOR CHEMIST
APPROVED SIGNATORY

END OF REPORT