



WILO AUSTRALIA PTY LTD
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Murarrie QLD, 4172
AU

Client Account Number: A00493572L0P
Eurofins Quote Number: XC8UPH19011204

Eurofins Sample Number NJ22AA1250-1

Original Received Date:	25-Jan-2022
Description:	STRATOS MAXO-Z 25(30)/0.5-12; CIRCULATOR PUMP
	Product Range: STRATOS MAXO-Z **/**-**
Containers Submitted:	4 Unit(s)

Analysis

AS/NZS 4020:2018 Compliance Testing

Refer to Attachment # 1

Subcontracted Testing (if performed) is not covered under NATA Accreditation 15773.
Method: AS/NZS 4020, Appendix A and in-house method TMP 191100 & TMP 191101
Analysis Date: 11-Feb-2022

Supplemental Information

Samples were tested as received. Specifications (if) reported are as provided by the client.

Accredited for compliance with ISO/IEC 17025:2017- Testing. NATA Accreditation Number 15773.

Contracted Company: Eurofins ams Laboratories (Sydney)

8, Rachael Close, Silverwater, NSW 2128 Australia
SampleReceiptAMS@eurofins.com

TGA Licence No: MI-15112007-LI-002191-11 APVMA Licence No: 6139

Questions about this report should be directed to your project manager or the general email listed above.

1. SAMPLE INFORMATION:

Methodology: AS/NZS 4020, *Appendix A* and in-house method TMP-191100 & TMP-191101

Cross Reference No.:	Not Applicable
Interim Reporting:	Not Applicable
Batch No./ Manufacturing Date:	Information not Provided
Product Manufacturer:	WILO SE WILOPARK 1, 44263 DORTMUND, GERMANY
Sampling Organisation:	Wilo Australia Pty. Ltd.
General Composition:	Refer to Section 9
Product Use:	In-Line
Temperature Range:	(0 - 80)°C
Previous Testing:	Not Applicable
Sample selection for tests:	As provided by the Submitting Organisation

Sample storage conditions:	Prepared and controlled as per AS/NZS 4020, <i>Appendix A</i>
Extracts:	Prepared as per AS/NZS 4020, <i>Appendices C, D, E, F, G & H</i>
Testing procedure:	<p>Initial testing is based on the recommended composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL) at (80 ± 2)°C to cover a cold and hot water application up to ~80°C.</p> <p>NOTE: FINAL VOLUME OF SYSTEM= 350mL.</p> <p>Due to Metals, passing at an evaluated composite exposure of 1 x system with a scaling factor of 0.06 (6/100), Taste testing only is based on composite exposure of 1 x system with a scaling factor of 0.06 (6/100) applied at (80 ± 2)°C.</p> <p>NOTE: FINAL VOLUME OF SYSTEM= 4.17L.</p> <p>Refer to Section 9 for product details.</p>
Volume retention:	~250mL per STRATOS MAXO-Z 25(30)/0.5-12

2. SUMMARY OF RESULTS:

APPENDIX	RESULTS
C - TASTE (CLAUSE 6.2)	PASSED at composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL) with a scaling factor of 0.06 (6/100) applied
D – APPEARANCE (COLOUR AND TURBIDITY) (CLAUSE 6.3)	PASSED at composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)
D – APPEARANCE (ORGANIC COMPOUNDS) (CLAUSE 6.8)	PASSED at composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)
E - GROWTH OF AQUATIC MICRO-ORGANISMS (CLAUSE 6.4)	PASSED at 'total immersion' exposure
F - CYTOTOXIC ACTIVITY (CLAUSE 6.5)	PASSED at composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)
G - MUTAGENIC ACTIVITY (CLAUSE 6.6)	PASSED at composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)
H - METALS (CLAUSE 6.7)	PASSED at an evaluated composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL) with a scaling factor of 0.06 (6/100) applied

* NOTE: Quantitative evaluation based on sample result, test scaling factor and AS/NZS 4020 test specification.

Based on completion and evaluation of all tests on 13/05/2022, the product, STRATOS MAXO-Z 25(30)/0.5-12; Circulator Pump; fully complied with the test requirements of AS/NZS 4020:2018 to cover a cold and hot water application up to ~80°C, at the recommended composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL) with a scaling factor of 0.06 (6/100) applied at (80 ± 2)°C.

Testing although determined by the relevant product Standard, is generally recognised for up to 5 years by the certifying body, providing the testing procedures remain the same, and the background information on all wetted parts and the product are adequately documented. Also, the results stated in the report relate to the samples of the product submitted for testing. Any changes in the material formulation and supplier/manufacture of all wetted items, the 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, and re-testing may be required before this actual time frame, governed by the completion and evaluation date.

3. TASTE:

Methodology: AS/NZS 4020, *Appendix C* and in-house method TMP-191130.

Exposure: composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)

Extraction temperature: (80 ± 2)°C **Scaling factor:** 0.06 (6/100) **Number of Panellists:** 5

No. of samples for Chlorine-free extract: 1 **No. of samples for Chlorinated extract:** 1

Description	Extract	Test Water	Taste (+ / –)	Taste Description (No. of tasters)	Test Dilution *(Taste intensity)
Test Blank	First 24h	Chlorine-free	NA	NA	NA
	Final 9-day	Chlorine-free	–	–	–
Sample	First 24h	Chlorine-free	NA	NA	NA
	Final 9-day	Chlorine-free	–	–	–
Test Blank	First 24h	Chlorinated	NA	NA	NA
	Final 9-day	Chlorinated	–	–	–
Sample	First 24h	Chlorinated	NA	NA	NA
	Final 9-day	Chlorinated	–	–	–

+ Taste detected – No taste detected NA Not applicable

AS/NZS 4020 test requirement: Minimum of 4 tasters with no discernible taste at the first 1/2 dilution.

Figure in brackets is the number of panellists detecting a taste at this dilution.

Note:

1. Tasters are given a 14-point scale to describe its intensity, with minimum of 1 as extremely weak, and maximum of >14 as extremely strong. An average of all tasters represents taste intensity.
2. First extract becomes final extract.

EVALUATION:

On the basis of these results the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, Taste; *Appendix C*.

4.A. APPEARANCE: COLOUR AND TURBIDITY

Methodology: AS/NZS 4020, *Appendix D* and in-house methods TMP-191140 and TMP-191106.

Exposure: composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)

Extraction temperature: $(80 \pm 2)^{\circ}\text{C}$

Scaling factor: NA

No. of samples tested: 1

	a) TRUE COLOUR: Hazen Units (HU)		b) TURBIDITY: Nephelometric Turbidity Units (NTU)	
	First 24h	Final 9-day	First 24h	Final 9-day
Sample Extract pH (24h) = 5.94	<2	NA	0.36	NA
Test Blank pH (24h) = 5.45	6.8	NA	0.12	NA
FINAL RESULT	<2	NA	0.24	NA
AS/NZS 4020 Test sample requirements	≤5		≤0.5	

< = less than	≤ = less than or equal to	NA Not applicable
First extract becomes final extract		

For test a), test extractions were performed by Eurofins |ams. The test extracts were subsequently subcontracted to Eurofins | Environment Testing for assessment (NATA Accreditation No. 1261), Report No. 868760-W. In-house Method based on APHA 2120 B.

EVALUATION:

On the basis of these results the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, Appearance (Colour & Turbidity); *Appendix D*.

4.B. APPEARANCE: ORGANIC COMPOUNDS

Methodology: AS/NZS 4020, *Appendix D* and in-house methods TMP-191140 and TMP-191106.

Refer to Section 4.A for testing conditions (Exposure, Extraction temperature, Scaling factor & No. of Samples tested)

Extract: 9-day

Organic Compound	Drinking Water Guideline Maximum Allowable Concentration mg/L (ppm)	Limit of Reporting mg/L (ppm)	Test Blank mg/L (ppm)	Sample Extract mg/L (ppm)	FINAL RESULT mg/L (ppm)
¹ Benzene	0.001*	0.001	<0.001	<0.001	<0.001
¹ Bromodichloromethane	0.06**	0.001	<0.001	<0.001	<0.001
¹ Carbon tetrachloride	0.003*	0.001	<0.001	<0.001	<0.001
¹ Chlorobenzene	0.3*	0.00001	<0.00001	<0.00001	<0.00001
¹ 1,2-dichlorobenzene	1.5*	0.001	<0.001	<0.001	<0.001
¹ 1,4-dichlorobenzene	0.04*	0.00001	0.00005	0.00005	<0.00001
¹ 1,2-dichloroethane	0.003*	0.00001	<0.00001	<0.00001	<0.00001
¹ 1,1-dichloroethene	0.03*	0.001	<0.001	<0.001	<0.001
¹ Cis 1,2-dichloroethene	0.06*	0.00001	<0.00001	<0.00001	<0.00001
¹ Trans 1,2-dichloroethene	0.06*	0.001	<0.001	<0.001	<0.001
¹ Dibromochloromethane	0.15**	0.001	<0.001	<0.001	<0.001
¹ Dichloromethane (methylene chloride)	0.004*	0.00002	<0.00002	<0.00002	<0.00002
² Epichlorohydrin	0.0005*	0.0004	<0.0004	<0.0004	<0.0004
¹ Ethylbenzene	0.3*	0.001	<0.001	<0.001	<0.001
¹ Hexachlorobutadiene	0.0007*	0.0005	<0.0005	<0.0005	<0.0005
³ N-Nitrosodimethylamine (NDMA)	0.0001*	0.00001	0.000041	0.000064	0.00002
¹ Plasticisers di(2-ethylhexyl) (Phthalate)	0.009**	0.0005	<0.0005	<0.0005	<0.0005
¹ Benzo-(a)-pyrene (PAHs)	0.00001*	0.00001	<0.00001	<0.00001	<0.00001
¹ Styrene (Vinylbenzene)	0.03*	0.001	<0.001	<0.001	<0.001
¹ Tetrachloroethene	0.05*	0.00002	<0.00002	<0.00002	<0.00002
¹ Toluene	0.8*	0.001	<0.001	<0.001	<0.001
¹ Trichlorobenzenes	0.03*	0.0005	<0.0005	<0.0005	<0.0005
¹ Trichloroethene	0.02**	0.00001	<0.00001	<0.00001	<0.00001
¹ Vinyl chloride	0.0003*	0.00005	<0.00005	<0.00005	<0.00005
¹ Xylene	0.6*	0.003	<0.003	<0.003	<0.003

*Australian Drinking Water Guideline **NZ Drinking Water Guideline

¹ Test extractions were performed by Eurofins |ams. The test extracts were subsequently subcontracted to Eurofins | Environment Testing, NATA Accreditation No. 1261, Report No. 871366-W. In-house Method based on USEPA 522, 8260D & 8270E.

² (Epichlorohydrin) Test extractions were performed by Eurofins |ams. The test extracts were subsequently subcontracted to Eurofins | Eaton, ANSI-ASQ National Accreditation Board/ANAB Accreditation No. AT 1807, Report No. 993641. In-house Method based on USEPA 524.2 Modified.

³ Test extractions were performed by Eurofins |ams. The test extracts were subsequently subcontracted to Sydney Water, NATA Accreditation No. 63, Report No. 260903. In-house Method based on USEPA 521.

EVALUATION:

On the basis of these results the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, Appearance (Organic Compounds); Appendix D.

5. GROWTH OF AQUATIC MICRO-ORGANISMS:

Methodology: AS/NZS 4020, *Appendix E* and in-house method TMP-191150.

Incubation temperature: $(30 \pm 1)^{\circ}\text{C}$

Exposure: 'total immersion'

No. of Samples: 1

Component Name	Testing Exposure	Inoculum (mL)	* MEAN DISSOLVED OXYGEN DIFFERENCE (MDOD) in mg/L
Item numbers: (2C + 3 + 6 + 8 + 15 + 15.2 + 19 + 46)	1 of each / 1L	100	0.68
Negative Reference Control (glass plate)	~15,000mm ² / 1L	100	0.36
Positive Reference Control (paraffin waxed glass plate)	~15,000mm ² / 1L	100	5.92
Test Blank	Blank / 1L	100	6.62 in mg/L as mean dissolved oxygen

* Difference from test blank and represents mean of five readings (weeks 5, 5 ½, 6, 6 ½ & 7)

AS/NZS 4020 test sample requirements: Less than or equal to 2.4 for MDOD

In-house Method based on APHA 4500 OG.

EVALUATION:

On the basis of these results the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, , Growth of Aquatic Micro-organisms; *Appendix E*.

6. CYTOTOXIC ACTIVITY:

Methodology: AS/NZS 4020, *Appendix F* and in-house method TMP-191160.

Exposure: composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)

Extraction temperature: (80 ± 2)°C

Scaling factor: NA

Extracts: 24h, 48h & 72h

No. of samples tested: 1

The test sample extracts from the product, as well as the test blank (test water) were used to prepare a nutrient growth medium, subsequently utilised to grow a monkey kidney cell line (VERO ATCC CCL 81).

Microscopic Examination	Test Sample Extract (24h, 48h and 72h)	Test Blank (24h, 48h and 72h)
Cell Morphology:	Satisfactory	Satisfactory
Monolayer: Confluence/Healthy Growth as ~%	100%	100%

NA = Not applicable

Cytotoxicity was detected with Zinc Sulphate, used as a positive control and analysed at 0.4mM of Zinc.

Water for Irrigation was included with the test blank as negative control.

AS/NZS 4020 test sample requirements: 1) Non-cytotoxic response- confluent monolayer similar to test blank.

2) Cytotoxic response- irregularly shaped cells & cell death similar to positive control 0.4mM Zinc Sulphate.

EVALUATION:

On the basis of these results the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, Cytotoxic Activity; *Appendix F*.

7. **MUTAGENIC ACTIVITY:**

Methodology: AS/NZS 4020, *Appendix G* and in-house method TMP-191170.

Exposure: composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)

Extraction temperature: (80 ± 2)°C

Scaling factor: NA

Extract: 24h

No. of samples tested: 1

-S9	<i>Salmonella typhimurium</i> TA98	Mean	Std Deviation	+ S9	<i>Salmonella typhimurium</i> TA98	Mean	Std Deviation
-ve c	25 28 34	29	5	-ve c	52 35 44	44	9
2,4-DNPH	230 158 220	203	39	2-AA	71 72 77	73	3
T.BLK	30 42 30	34	7	T.BLK	37 44 45	42	4
Sample	42 36 31	36	6	Sample	41 43 45	43	2

-S9	<i>Salmonella typhimurium</i> TA102	Mean	Std Deviation	+ S9	<i>Salmonella typhimurium</i> TA102	Mean	Std Deviation
-ve c	672 656 672	667	9	-ve c	720 576 736	677	88
2,4-DNPH	595 672 688	652	50	Benzo(a)pyrene	768 816 688	757	65
T.BLK	736 656 624	672	58	T.BLK	640 560 465	555	88
Sample	688 544 512	581	94	Sample	752 848 784	795	49

+ S9 = * Metabolic Activator

NA = Not applicable

> = greater than

2,4-DNPH = 2, 4-dinitrophenylhydrazine

2-AA = 2-aminoanthracene

-ve c = Negative Control

AS/NZS 4020 test sample requirements: (The differences in the mean number of revertants between either of the negative controls and test sample extracts should not exceed two standard deviations (for triplicate analysis)).

Positive response: If mean revertants for sample extract outside the range of spontaneous revertants for test strain.

EVALUATION:

On the basis of these results the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, Mutagenic Activity; *Appendix G*.

8. METALS:

Methodology: AS/NZS 4020, Appendix H and in-house methods TMP-191180 and TMP-191230.

Exposure: composite exposure of 1 x system (system = 'in-the-product' exposure of 1 x STRATOS MAXO-Z 25(30)/0.5-12 (~250mL) + 'total immersion' exposure of 1 x each Carbon Ring (15.2) + Holder Carbon Ring (15.3) / 100mL test water, with the extracts combined to make up 350mL)

Extraction temperature: (80 ± 2)°C

Scaling factor: NA

Extracts: 24h & 9-days

No. of samples for I: 1

No. of samples for II: 1

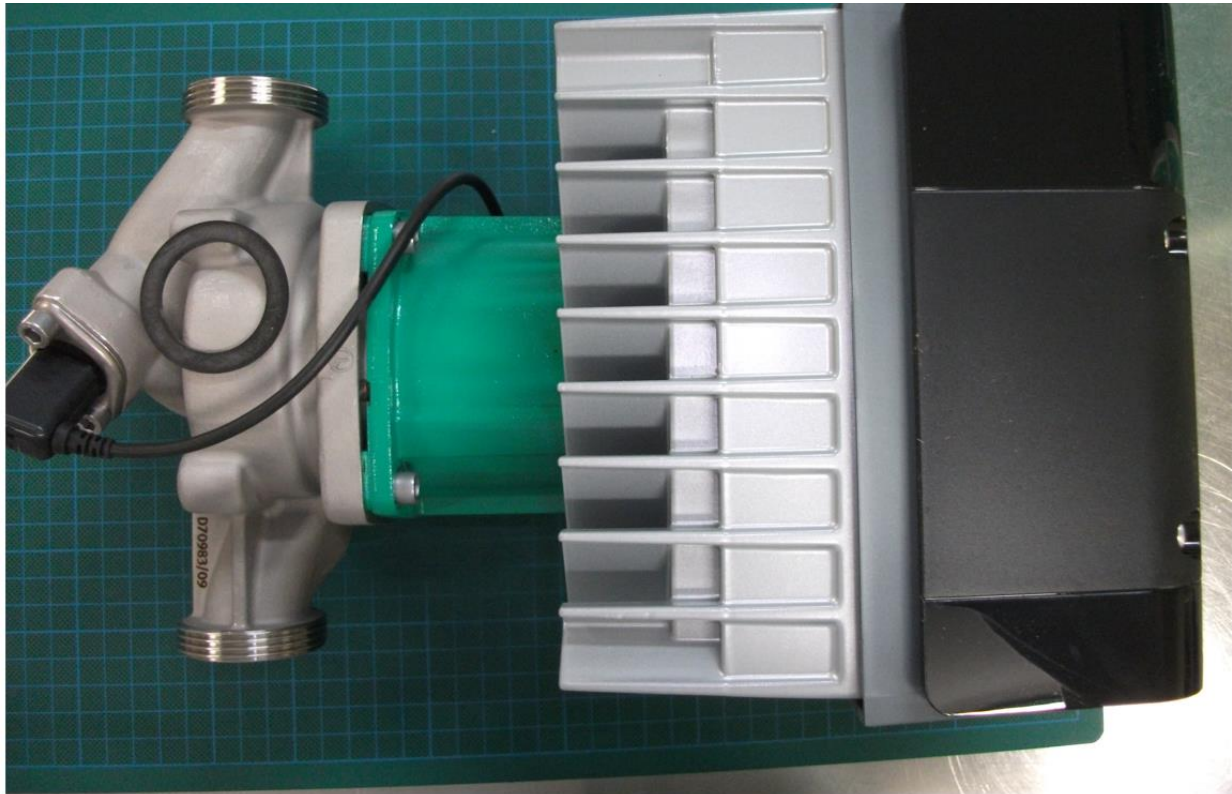
Element	AS/NZS 4020: Maximum Allowable Concentration mg/L (ppm)	Limit of Reporting mg/L (ppm)	Test Blank mg/L (ppm)	Sample Extract I mg/L (ppm)	Sample Extract II mg/L (ppm)	FINAL RESULT I mg/L (ppm)	FINAL RESULT II mg/L (ppm)
Aluminium ¹ (Al) a) First 24h: b) Final 9-day:	0.2	0.05	a) 0.11 b) 0.14	a) 0.46 b) 0.11	a) 0.34 b) 0.12	a) 0.35 b) <0.05	a) 0.23 b) <0.05
Antimony ¹ (Sb) a) First 24h: b) Final 9-day:	0.003	0.001	a) <0.001 b) <0.001	a) 0.004 b) <0.001	a) 0.002 b) <0.001	a) 0.004 b) <0.001	a) 0.002 b) <0.001
Arsenic ¹ (As)	0.01	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Barium ¹ (Ba)	0.7	0.001	<0.001	0.025	0.019	0.025	0.019
Boron ¹ (B)	1.4	0.05	0.29	<0.05	<0.05	<0.05	<0.05
Cadmium ¹ (Cd)	0.002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Chromium ¹ (Cr)	0.05	0.001	<0.001	0.005	<0.001	0.005	<0.001
Copper ¹ (Cu)	2	0.001	<0.001	0.041	0.027	0.041	0.027
Iron ¹ (Fe) a) First 24h: b) Final 9-day:	0.3	0.05	a) <0.05 b) <0.05	a) 0.44 b) 0.21	a) 0.06 b) 0.25	a) 0.44 b) 0.21	a) 0.06 b) 0.25
Lead ¹ (Pb) a) First 24h: b) Final 9-day:	0.01	0.001	a) <0.001 b) <0.001	a) 0.12 b) 0.13	a) 0.050 b) 0.16	a) 0.12 b) 0.13	a) 0.050 b) 0.16
Manganese ¹ (Mn)	0.1	0.005	<0.005	0.020	0.042	0.020	0.042
Mercury ¹ (Hg)	0.001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum ¹ (Mo)	0.05	0.002	<0.002	0.009	0.004	0.009	0.004
Nickel ¹ (Ni)	0.02	0.001	<0.001	0.010	0.015	0.010	0.015
Selenium ¹ (Se)	0.01	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver ¹ (Ag)	0.1	0.001	<0.001	<0.001	<0.001	<0.001	<0.001

< = less than mg/L = milligram per litre ¹ = ICPMS – In-house Method Code: LTM-MET 3040 First extract becomes final extract.

NA = Not applicable

The results have not complied at the testing exposure but on final calculation of evaluated exposure, the samples of this product referred to in this report have complied with the test requirements of AS/NZS 4020:2018, Metals; *Appendix H*, at an evaluated 'in-the-product' exposure with a scaling factor of 0.06 (6/100) applied.

9.I. PHOTOS OF TEST SAMPLE:



9.II. BILL OF MATERIAL (BOM):

Position	Designation	Material	Latest status	amples available	Stratos MAXO-Z 25/0.5-12 Stratos MAXO-Z 30/0.5-12
Volume (mL) ->					500
1 Pump Housing		1.4408			0.7220
2 Suction Gasket					-
2a Inner Cage		1.4301			0.0513
2b Outer Cage		1.4301			0.0385
2c Suction Ring					0.0365
3 Impeller					0.3772
		WITCOM PPS 2016-167			
		Fortron 1140L6 SF3001			
3a	Insert - Impeller	CW612N (CuZn39Pb2)	could be in use (up to impeller manufacturer)	possibly	
4	Mechanical Seal	CW617N (CuZn40Pb2)	could be in use (up to impeller manufacturer)	possibly	0.0048
4a	Rotary Seal Ring	SCC-950F	Q2 2022 - two suppliers in place		-
		Sedalox Ceramic Disc	In Use and build in the full pump samples	yes	0.0202
4b	EPDM Bellow	E7518	Currently not in use (available in Q2 2022)	no	
		E7581	In use and build in the full pump samples	yes	
		70 EPDM 331	Currently not in use	no	0.0251
		LOPI 70	Currently not in use (available in Q2 2022)	possibly	
4c	Locking Ring	1.4301		no	
4d	Ring	1.4301			0.0106
4e	Collar	1.4301			0.0062
4f	Spring	1.4301			0.0252
5	Bearing Plate				0.0129
		CW612N (CuZn39Pb2)	Currently not in use	no	
		CW617N (CuZn40Pb2)	In use and build in the full pump samples	yes	0.1947
6 Radial Bearing (1)					
7 Filter Disc		1.4301			0.0311
8	O-Ring (2pcs)	E 7518	In use and build in the full pump samples	yes	0.0600
		E 7581	Currently not in use	no	0.0209
9 Filter Plug		1.4301			0.0400
10	Shaft	1.4122		yes	
		with DLC-coating	available as an alternative	yes	0.1232
11 Rotor Sleeve		1.4301			0.1099
12 Sleeve Cover (1)		1.4301			0.0184
13 Sleeve Cover (2)		1.4301			0.0182

9.II. BILL OF MATERIAL (BOM) CONT.:

14	Rubber Sleeve	E 7518	In use and build in the full pump samples	yes	0.0413
		E7581	Currently not in use	no	
15	Thrust Plate	Rapox Brown C795	In use and build in the full pump samples	yes	0.0258
		T195	Currently not in use	no	
15.2 Carbon Ring HPC835					
15.3 Holder Carbon Ring 1.4122					
16 CAN Fortron 114016 SF3001					
17 Radial Bearing (2) HPC835					
18	Bearing Bracket	CW612N (CuZn39Pb2)	Currently not in use	no	0.0068
		CW617N (CuZn40Pb2)	In use and build in the full pump samples	yes	
19	O-Ring	E 7518	In use and build in the full pump samples	yes	0.0220
		E 7581	Currently not in use	no	
		70 EPDM 331	Currently not in use	possibly	
20 Axial/Thrust Bearing 1.4122					
21 Flow Sensor					
21a+b Hybrid Housing w/ Cap Fortron 114016 SF3001					
21c	O-ring	E7158	In use and build in the full pump samples	yes	0.0102
		E7581	Currently not in use	no	

NOTE: BOM FOR PRODUCT RANGE VERIFIED BY LABORATORY

9.III. METALLURGICAL TEST REPORT:



UNIVERSAL SCIENTIFIC LABORATORY PTY LTD

ABN 76 093 281 764

UNIT 12, 65 MARIGOLD STREET, REVESBY NSW 2212, AUSTRALIA

PO BOX 49, MILPERRA NSW 2214, AUSTRALIA

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EMAIL: info@usl.com.au WEBSITE: www.usl.com.au

ANALYSIS REPORT

ORIGIN: AMS LABORATORIES P/L

DESCRIPTION: Body of STM-Z25/0.5-6(2169972/C11275/18) "WIL NJ22AA1250-1"

ORDER NO: 7877

ALLOY CODE A351 CF8M

COLOUR CODE

REPORT NO: 22/1354

REPORT DATE 11/03/22

LOG BOOK NO: 220091

HEAT NO:

Sample No:

UNITS W/W %

	C	S	P	Si	Mn	Cr	Ni	Cu	Mo	V	Ti
1	.06	.01	.02	1.1	.93	19.0	10.2	.31	2.2	.06	.03

SPECIFICATION LIMITS

MAX: .08 .040 .040 - 1.50 21.0 12.0 3.0

MIN: 18.0 9.0 2.0

ANALYTICAL TECHNIQUE(S)

Method P016 P016 E353 M100 M100 M100 M100 M100 M100 M100 M100

MU

MU= Measurement Uncertainty

REMARKS

checked
35 14/03/2022

This analysis was performed at: 12, 65 Marigold St., Revesby

To the best knowledge of the company the results on this report are correct, however no legal responsibility will be accepted for or arising from their use. Samples were tested as received unless stated otherwise. The report shall not be reproduced unless in full. Measurement uncertainty data are available on request.



Accredited for compliance to ISO/IEC 17025 testing.
NATA accredited laboratory No. 492
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WILLIAM TING
AUTHORISING OFFICER