WILO AUSTRALIA PTY LTD
2/29 ALEXANDRA PLACE QLD 4172
QLD,
AU

Client Account Number: A00493572L0P
Eurofins Quote Number: XC8UPH19011202

Eurofins Sample Number NJ21AA7482-3

Original Received Date:	09-Jun-2021
Description:	Jet FWJ-204; Household Jet Pump with Controller Product range: Jet WJ-204 and Jet FWJ-204
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: 10-Aug-2021

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.

Reviewed and electronically signed for Data Reviewer Approval by
Sandhya Singh, Department Manager -Chemistry & Toxicology
for Eurofins ams Laboratories Pty Ltd, on 18-Nov-2021 08:38:42 UTC+11:00

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:	(Pump) Guangdong Lingxiao Pump Industry Co. Ltd, 117 Chunjiang Road, Yangchun, Guangdong, China 529600 (Controller) Coelbo Control System, S.L, Ctra. De Rubi, 288 – P.I. Can Guitard – 08228 Terrassa, Spain
Sampling Organisation:	Wilo Australia Pty. Ltd.
General Composition:	Refer to Section 9
Product Use:	In-Line
Temperature Range:	(0 - 35)°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, *Appendix A*
Extracts:	Prepared as per AS/NZS 4020, *Appendices C, D, E, F, G & H*
Testing procedure:	Testing is based on the recommended 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied at (20 ± 2)°C to cover a cold water application up to <40°C. Refer to Section 9 for product details.
Volume retention:	~2.9L

2. SUMMARY OF RESULTS:

APPENDIX	RESULTS
C - TASTE (CLAUSE 6.2)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
D – APPEARANCE (COLOUR AND TURBIDITY) (CLAUSE 6.3)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
D – APPEARANCE (ORGANIC COMPOUNDS) (CLAUSE 6.8)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
E - GROWTH OF AQUATIC MICRO-ORGANISMS (CLAUSE 6.4)	PASSED at 'total immersion' exposure
F - CYTOTOXIC ACTIVITY (CLAUSE 6.5)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
G - MUTAGENIC ACTIVITY (CLAUSE 6.6)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
H - METALS (CLAUSE 6.7)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied

Based on completion and evaluation of all tests on 18/11/2021, the product, Jet FWJ-204, Household Jet Pump with Controller; fully complied with the test requirements of AS/NZS 4020:2018 to cover a cold water application up to <40°C, at the recommended 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied at (20 ± 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/manufacturer 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: 'in-the-product'

Extraction temperature: (20 ± 2)°C **Scaling factor:** 0.1 (1/10) **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: 'in-the-product'

Extraction temperature: (20 ± 2)°C **Scaling factor:** 0.1 (1/10)

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) = 6.13	<2	NA	0.09	NA
Test Blank pH (24h) = 6.20	<2	NA	0.11	NA
FINAL RESULT	<2	NA	<0.01	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. 817636-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	<0.00001	<0.00001	<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
[1] 1,4-dioxane	0.05**	0.00005	0.00008	0.00005	<0.00005
[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	<0.00001	0.000011	0.00001
[1] Plasticisers di(2-ethylhexyl) (Phthalate)	0.009**	0.0005	0.0079	0.0092	0.0013
[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. 817664-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. 953732. 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. 250121. 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 ± 1)°C

Exposure: 'total immersion'

No. of Samples: 2

Component Name	**Testing Exposure**	**Inoculum (mL)**	*** MEAN DISSOLVED OXYGEN DIFFERENCE (MDOD) in mg/L**
i) Ejector	~15,000mm^2 / 1L	100	<0.01
ii) O-ring (#3) + Mechanical Seal (#16)	5 + 2 / 1L	100	<0.01
iii) Guide Vane (#8)	~15,000mm^2 / 1L	100	<0.01
Negative Reference Control (glass plate)	~15,000mm^2 / 1L	100	<0.01
Positive Reference Control (paraffin waxed glass plate)	~15,000mm^2 / 1L	100	3.81
Test Blank	Blank / 1L	100	5.26 in mg/L as mean dissolved oxygen

NA = Not applicable
***** 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

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: 'in-the-product'

Extraction temperature: (20 ± 2)°C **Scaling factor:** 0.1 (1/10)

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%

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: 'in-the-product' **Extraction temperature:** (20 ± 2)°C
Scaling factor: 0.1 (1/10) **Extract:** 24h **No. of samples tested:** 1

-S9	*Salmonella typhimurium* TA98	Mean	Std Deviation	+ S9	*Salmonella typhimurium* TA98	Mean	Std Deviation
-ve c	20 30 27	26	5	-ve c	25 31 30	29	3
2,4-DNPH	160 153 147	153	7	2-AA	152 160 151	154	5
T.BLK	27 31 25	28	3	T.BLK	31 23 44	33	11
Sample	20 31 40	30	10	Sample	46 41 31	39	8

-S9	*Salmonella typhimurium* TA102	Mean	Std Deviation	+ S9	*Salmonella typhimurium* TA102	Mean	Std Deviation
-ve c	350 340 302	331	25	-ve c	402 411 405	406	5
2,4-DNPH	940 812 817	856	73	Benzo(a)pyrene	902 911 907	907	5
T.BLK	312 312 340	321	16	T.BLK	400 449 440	430	26
Sample	340 330 312	327	14	Sample	440 410 490	447	40

+ 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: 'in-the-product' **Extraction temperature:** (20 ± 2)°C **Scaling factor:** 0.1 (1/10)
Extracts: 24h **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)	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Antimony[1] (Sb)	0.003	0.001	<0.001	<0.001	<0.001	<0.001	<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	<0.001	<0.001	<0.001	<0.001
Boron[1] (B)	1.4	0.05	<0.05	<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	<0.001	<0.001	<0.001	<0.001
Copper[1] (Cu)	2	0.001	<0.001	0.004	0.004	0.004	0.004
Iron[1] (Fe)	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead[1] (Pb)	0.01	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese[1] (Mn)	0.1	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
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	<0.002	<0.002	<0.002	<0.002
Nickel[1] (Ni)	0.02	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
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
Test extractions were performed by Eurofins │ams. The test extracts were subsequently subcontracted to Eurofins │Environment Testing for assessment (NATA Accreditation No. 1261), Report Nos. 817636-W. In-house Method based on US EPA Method 3010A & US EPA Method 6020B.

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, Metals; *Appendix H*.

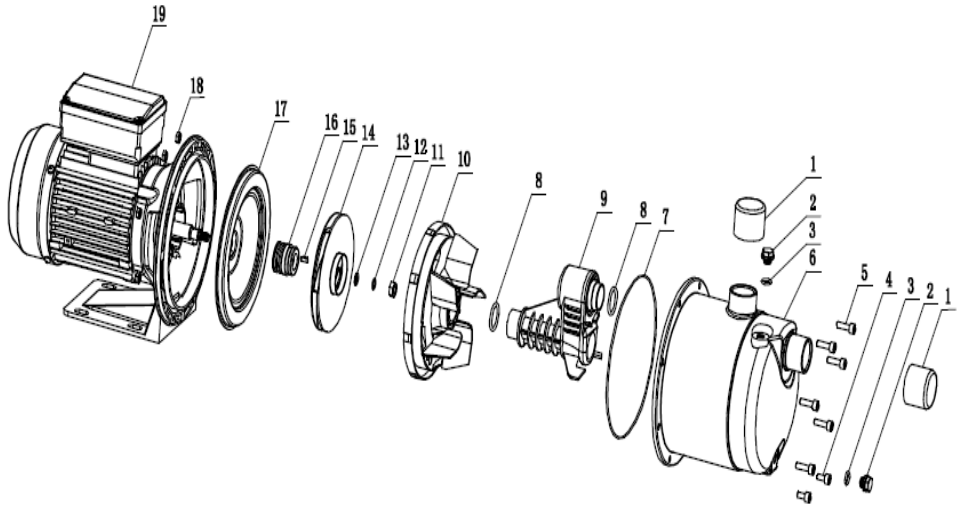
9.I. PHOTO OF TEST SAMPLE:

9.II. TECHNICAL DRAWING AND BILL OF MATERIAL (BOM):

PC110030002

WJ-204 不銹钢射流式自吸泵

WJ-204 Stainless Steel Self-Priming Jet Pump



序号 No.	名 称 Name	规 格 Spec	数量 QTY	序号 No.	名 称 Name	规 格 Spec	数量 QTY
1	防尘盖 Dust cap		2	11	六角螺母 Hexagonal Nut	M8	1
2	注放水螺塞 Injection or drainage plug	M10×1.25	2	12	弹簧垫圈 Spring washer	ϕ8	1
3	O形圈 O-Ring	d9×2.4	2	13	平垫圈 Washer	ϕ8	1
4	内六角螺栓 Inside hexagonal bolt	M6×12	2	14	叶轮 Impeller		1
5	内六角螺栓 Inside hexagonal bolt	M6×18	6	15	平键 Flat key	4×10	1
6	泵壳组件 Pump housring component		1	16	机械密封 Mechanical Seal	560A-15	1
7	O形圈 O-Ring	d164×4.5	1	17	泵盖 Pump Cover		1
8	O形圈 O-Ring	d24×3.1	1	18	六角螺母 Hexagonal Nut	M5	6
9	射流器总成 Ejector		1	19	电机 Motor		1
10	导叶总成 Guide vane assemblin		1				

编 制		审 核		批 准	

9.II. TECHNICAL DRAWING AND BILL OF MATERIAL (BOM) CONT.:

WJ-204 key components' suppliers list for drinking water approval

No.	Description	Specifications	Material	Supplier Name
1	drainage	M10x1.25	SUS304	Shanghai Baihe Huaxin Lihua special S.S products co.ltd.
2	O-ring	d9x2.4	EPDM	Zhejiang Hongxin damping system Ltd
3	pump housing assembling		SUS304	Fuxian(Foshan) Steel materials process Co.ltd.
4	O-ring	d164x4.5	EPDM	Zhejiang Hongxin damping system Ltd
5	O-ring	d24x3.1	EPDM	Zhejiang Hongxin damping system Ltd
6	diffusor		PA66+35% GF U1 tramid A3EG7	GE
8	guide vane		PA66+35% GF U1 tramid A3EG7	GE
9	screw	M8	SUS304	Shanghai Baihe Huaxin Lihua special S.S products co.ltd.
10	spring washer	ϕ8	SUS304	Shanghai Baihe Huaxin Lihua special S.S products co.ltd.
11	flat washer	ϕ8	SUS304	Shanghai Baihe Huaxin Lihua special S.S products co.ltd.
12	impeller		SUS304	Fuxian(Foshan) Steel materials process Co.ltd.
13	flat key	4x10	SUS304	Shanghai Baihe Huaxin Lihua special S.S products co.ltd.
14	mechanical seal	560A-15	carbon/ceremic/EPDM/SUS304	Wenlin Great Wall mechnical seal co.ltd.
15	pump cover		SUS304	Fuxian(Foshan) Steel materials process Co.ltd.
16	shaft		45+SUS304	Shanghai Baihe Huaxin Lihua special S.S products co.ltd.

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
TELEPHONE: +61(2) 9771 5592 • FACSIMILE: +61(2) 9771 2482
EMAIL: info@usl.com.au WEBSITE: www.usl.com.au

ANALYSIS REPORT

ORIGIN: AMS LABORATORIES P/L
DESCRIPTION: Pump Housing #6.
ORDER NO: 7866
ALLOY CODE UNS S30400.
COLOUR CODE
REPORT NO: 21/1877
REPORT DATE 03 /09/21
LOG BOOK NO: 210316
HEAT NO:

Sample No. **UNITS** W/W %

	C	S	P	Si	Mn	Cr	Ni	Cu	Mo	V	Ti
3	.05	<.01	.02	.49	1.1	18.1	8.0	.36	.13	.06	<.01
SPECIFICATION LIMITS											
MAX:	.08	.030	.045	1.00	2.00	20.0	10.5				
MIN:						18.0	8.0				
ANALYTICAL TECHNIQUE(S)											
Method	P016	P016	E353	M100	M100	M100	M100	M100	M100	M100	M100
MU						.2	.1				

MU= Measurement Uncertainty

REMARKS:
WIL NJ21AA7482-3

heated
SJ 06/10/2021

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.

WILLIAM TING
AUTHORISING OFFICER

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance to ISO/IEC 17025 testing.
NATA accredited laboratory No. 492
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