

Laboratory Accreditation Programmes

Schedule to

CERTIFICATE OF ACCREDITATION

AsureQuality Limited
Laboratory Services - Auckland Laboratory

Client No: 113

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Authorised Representative:
Mrs Vijaya Sharma
Laboratory Quality Manager

Programme
Dairy Testing Laboratory

Accreditation Number: 445

Date of Accreditation: 16 July 1992

Conformance Standard

NZS ISO/IEC 17025:2005

General requirements for the competence of testing and calibration laboratories

Testing Services Summary

Chemistry

9.01	Dairy Products - Chemical Tests
9.61	Dairy Products Residues
9.62	Dairy Products Micronutrients

Microbiology

9.02	Dairy Products - Microbiological Tests
9.31	Microbiological Condition in Dairy Factories
9.51	Testing of Other Specified Products

Key Technical Personnel

Chemistry

Mr Shakeel Ali	9.01; selected
Mrs Joy Argano	9.01; selected
Mr Kristoph Cave	9.01; selected
Ms Karishma Charan	9.01; selected
Miss Purnima Devi	9.01; selected
Mrs Anita Goyal	9.01; selected
Ms Saras Green	9.01; selected
Mr Timothy Hudson	9.01; selected

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Ms Shalini Wadhawan	9.01; selected
Mrs Deepa Dias Kadawatha-Arachchi	9.01; selected
Mr Peter Peterson	9.01; selected
Mr Ronil Prasad	9.01; selected
Ms Rajnish Sen	9.01; selected
Mr Lawrence Pickston	9.01; metals
Miss Priye Murthi	9.01; ICP-OES
Mrs Kanthi Mupnar	9.01, 9.61; selected
Ms Shanel Ram	9.01, 9.61, 9.62; selected
Miss Sheena Fyfe	9.01, 9.61, 9.62; selected
Dr George Joseph	9.01, 9.61, 9.62; selected
Mr Peter Thomas	9.01, 9.61, 9.62; selected
Mrs Sarita Vyas	9.01, 9.62; selected
Mr Pathik Vyas	9.01, 9.62; selected
Ms Jenny Zhang	9.01, 9.62; selected
Mr Tony Tsang	9.62; selected
Ms Rhonda Lennard	9.62; selected
Mrs Foram Thakar	9.62; selected
Mr Joseph Fan	9.62; selected
Mrs Sheleen Lata	9.62; selected
Mr Nebojsa Jeremijic	9.62; selected

Microbiology

Mrs Khyati Modha	9.02; pathogens
Ms Eleen Tseng	9.02; pathogens
Ms Bei Bei Li	9.02, 9.31
Mrs Chandrika Roland	9.02, 9.31
Miss Yi (Alice) Yin	9.02, 9.31
Ms Ingrid Houg-Lee	9.02, 9.31; pathogens
Mr Craig McCulloch	9.02, 9.31; pathogens
Mrs Swati Jain	9.02; selected, 9.31; pathogens
Mrs Bhama Senthuran	9.02; selected, 9.31; pathogens
Miss Beverly Steel	9.02; selected, 9.31; pathogens
Miss Sarah White	9.02; selected, 9.31; pathogens
Ms Justine Inverarity	9.02; selected, 9.31; pathogens
Miss Melissa Young	9.02; selected, 9.31; pathogens
Mrs Navneet Ahluwalia	9.02, 9.31, 9.51
Mr Warwick Aspin	9.02, 9.31, 9.51
Ms Bina Rajesh	9.02; excludes pathogens, 9.31, 9.51
Mr Peter Griffin	9.02, 9.51; excludes pathogens
Mrs Radmilla Lawford	9.02, 9.51; excludes pathogens
Mrs Tamara Johnston-Nimmo	9.02, 9.51; excludes pathogens
Mrs Andrea Renner	9.02, 9.51; excludes pathogens
Mrs Anu Kaloti	9.02; selected, 9.51; excludes pathogens
Mrs Preetika Prasad	9.02; selected, 9.51; excludes pathogens
Mrs Morag Taylor	9.02; selected, 9.51; excludes pathogens

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Chemistry

9.01 Dairy Products - Chemical Tests

In accordance with current editions of tests published in NZTM3: New Zealand Dairy Industry Chemical Methods Manual, NZTM4: New Zealand Dairy Industry Physical Methods Manual, and NZTM5: New Zealand Dairy Functional Methods Manual except where otherwise indicated.

- (a) **Milk**
- (b) **Cream**
- (c) **Milk powders**
- (d) **Butter**
- (e) **Other fat products**
- (f) **Cheese**
- (g) **Caseins and caseinates**
- (h) **Whey products**
- (i) **Cultured products**
- (j) **Frozen Confectionery**
- (k) **Dairy Foods**
- (l) **Ice Cream**
- (n) **Alamin**
- (o) **Lactose**
- (p) **Milk protein concentrate**
- (q) **Other specified products**

Free Acidity	3.2.1
Free Acidity	ISO 5547 / IDF 91:2008
Titratable Acidity	3.2.2
Titratable Acidity	3.2.3
Titratable Acidity	3.23.5
Titratable Acidity	McDowell
Titratable Acidity	AOAC 947.05 (16 th Edition)
pH	3.2.8
pH	3.23.17
pH	ISO 7238 / IDF 104:2004
pH	IDF 115A:1989
pH	BS770:1986
pH	APHA (17 th Edition) Ch 15
Hydrogen Peroxide	Merck
Ash (fixed)	3.4.1
Ash	ISO 5544 / IDF 89:2008 (modified)
Ash	3.4.2
Ash	BS1741:1988 (modified)
Lactose (Chloramine-T Method)	3.5.1
Lactose	3.5.4
Lactose	3.5.6

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Lactose	IDF 28A:1974
Lactose	ISO 5548 / IDF 106:2004
Lactose	Calculation by difference
Fat (RG)	3.6.3
Fat (SBR)	3.6.4
Fat by Difference	3.6.9
Free Fat	3.6.7
Free Fat	Netherlands Milk & Dairy Jnl 25:1971
Fat	IDF 5B:1986
Fat	IDF 22C:1996
Fat	ISO 7328 / IDF 116: 2008
Fat	ISO 5543 / IDF 127:2004 (modified)
Fat	Calculation by difference
Free Fatty Acids	3.7.1
Free Fatty Acids	Jnl Dairy Research 25:1958
Chloride	3.9.1
Salt (Titration)	3.9.6 (modified)
Salt (Titration)	3.9.7
Salt	3.9.20 (modified)
Salt/Chloride	IDF 88A:1988
Salt/Chloride	IDF 88A:1988 (modified)
Salt/Chloride	IDF 179:1997 (modified)
Phosphatase	3.11.4
Phosphatase	3.11.5
Phosphatase	3.11.6
Residual Phosphatase	3.11.8
Phosphatase	IDF 82A:1987
Phosphatase	Jnl Dairy Research 16:1949
Milksolids-Not-Fat (Curd)	3.12.1
Free Moisture	3.12.2
Moisture (Gravimetry)	3.12.8
Moisture (Karl Fischer Titration)	3.12.11
Moisture (Gravimetry)	3.12.17
Moisture	IDF 26A:1993
Moisture	IDF 78C:1991
Moisture	BS 2511:1970
Free Moisture	Analytical Methods for Dried Milk Products (4 th Edition)
Total Solids/Solids-Non-Fat (Gravimetry)	3.12.15
Total Solids/Solids-Non-Fat (Gravimetry)	3.12.15 (modified)
Total Solids/Solids-Non-Fat	IDF 21B:1987 (modified)
Nitrate and Nitrite (Automated Colorimetry)	3.13.1
Nitrate and Nitrite	NZJDST volume 15:1980
Casein protein	3.15.2
Casein protein	IDF 29:1964
Non-protein nitrogen	3.15.3
Non-protein nitrogen	IDF 20B:1993
Total Nitrogen (Kjeldahl)	3.15.4

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Whey Protein Nitrogen Index	3.15.6
Whey Protein Nitrogen Index	3.23.18
Whey Protein Nitrogen Index	NZJDST volume 5 1970
Protein, Total Nitrogen (Dumas)	3.15.7
Protein, Total Nitrogen (Kjeldahl)	3.15.8
Protein	ISO 8968-1 / IDF 20-1:2001
Protein	ISO 14891 / IDF 185:2002
Packed Bulk Density	4.2.3
Packed Bulk Density	Analytical Methods for Dried Milk Products Method 2a (2006)
Foreign Matter	4.3.3
Foreign Matter	ADMI Bulletin 916:1990 (modified)
Insolubles	4.3.15
Insolubles	ADMI Bulletin 916:1990 (modified)
Background Colour	4.3.16
Background Colour	ADMI Bulletin 916:1990 (modified)
Scorched Particles	4.3.17
Scorched Particles	ADMI Bulletin 916:1990 (modified)
Particle Size Analysis	4.5.4
Particle Size Analysis	BS 1796:1976
Insolubility Index	4.6.3
Insolubility Index	ISO 8156 / IDF 129:2005
Colour	5.5.1
Fatty Acid Profile	In-house
Sugar Profile (Fructose, Glucose, Sucrose, Lactose, Maltose)	In-house
Cholesterol	AOAC 933.08 (15 th Edition) (modified)
Cholesterol	AOAC 970.50 (15 th Edition) (modified)
Cholesterol	AOAC 970.51 (15 th Edition) (modified)
Preservatives (Sorbates, Benzoates)	Leatherhead Food RA (2 nd Edition)
Sulphated Ash	BP 2009 Appendix IXA, Method I
Energy	ANZ Food Stds. Code 2002 (Amendment 2)
Galatose	Boehringer Mannheim enzymatic test kit (R-Bopharm)
Fluoride	Fluoride specific ion electron
Fluoride	JAOAC volume 62, microdiffusion (modified)
Antioxidants (BHA, BHT, TBHQ)	J Chrom. volume 356(1986)
Ethyl Vanillin	JAOAC volume 83 (2000)
Vanillin	JAOAC volume 83 (2000)
Carbohydrates by difference	Calculation

Fat Products

Alkalinity	3.2.5
Alkalinity	BS 684 Section 2.5:1995
Free Fatty Acids	3.7.3

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Free Fatty Acids	AOCS Ca 5a-40 1979
Peroxide Value	3.7.4
Peroxide Value	Loftus Hills G, Thielcc Jnl Dairy Research 14:1946
Peroxide Value	3.7.5
Peroxide Value	IDF 74A:1991
Colour as Carotene	3.10.1
Colour as Carotene	Laboratory Handbook for Oil and Fat Analysis (1966)
Curd	3.12.1
Curd	Calculation by difference
Moisture	3.12.4
Moisture	IDF 137:1986
Moisture	3.12.10
Moisture	IDF 23A:1998 (modified)
Moisture	EU 880/98 (1998)
Total Solids	3.12.15
Solids (Non Fat)	3.12.19
Solids (Non Fat)	ISO 8851-2 / IDF 191-2:2004
Solids (Non Fat)	EU 880/98 (1998)
Iodine Value	3.10.2
Iodine Value	ISO 3961:1996
Iodine Value	BS 684, 2.13:1996
Iodine Value	AOCS Cd 1d-92
Iodine Value	AOAC 993.20 (18 th Edition)

Metals


Total phospholipids In-house

The following metals by In-house methods using Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES) - Acid Digest / Wet Oxidation

Calcium	Copper	Iron	Magnesium
Manganese	Phosphorus	Potassium	Sodium
Sulphur	Zinc		

The following metals by In-house methods using Inductively Coupled Plasma - Mass Spectrometry (ICP-MS) – Acid Digest / Wet Oxidation

Aluminium	Antimony	Arsenic	Bismuth
Boron	Cadmium	Caesium	Chromium
Cobalt	Copper	Iodine	Lead
Lithium	Manganese	Mercury	Molybdenum
Nickel	Rubidium	Selenium	Silver
Strontium	Titanium	Tin	Tungsten

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Uranium Vanadium Zinc

9.61 Dairy Products Residues

Formaldehyde	3.20.12
Formaldehyde	Neth. Milk Dairy J. volume 37 (1983)
Polysorbates (as Tween 80)	Ishimata et al GFH, volume 14(5):1973

9.62 Dairy Products Micronutrients

In accordance with the current editions of tests published in NZTM 3: New Zealand Dairy Industry Chemical Methods Manual unless otherwise indicated

(c) Milkpowders

Vitamin A	3.17.1
Vitamin A	3.17.29
Vitamin A	EN 12823-1:2000
Vitamin A	AOAC 992.04
Vitamin A	AOAC 992.06
Vitamin C	3.17.3
Vitamin C	AOAC 985.33 (16 th Edition)
Vitamin D3	3.17.7
Vitamin D3	Cost 91
Vitamin D3	JMA 1 p121-141 (1985)
Taurine	Anal. Biochem 178 p 227-232 (1989)
Vitamin E	3.17.6
Vitamin E	3.17.9 (modified)
Vitamin E	Cost 91(1986)
Vitamin B1	Royal ACI, volume 2 (1987)
Vitamin B2	Royal ACI, volume 2 (1987)
Vitamin B3	Royal ACI, volume 2 (1987)
Vitamin B5	JMA 1 (1985) 39 (GC)
Vitamin B5	Food Chem. Volume 69 (2000), (HPLC)
Vitamin B5	Biacore
Vitamin B6	Royal ACI, volume 2 (1987)
Vitamin B12	Biacore
Biotin	Biacore
Folic acid	Biacore
Choline	AOAC 999.14, 18 th Edition
Vitamin K1	JAOAC 83 p121-130
Vitamin K1	AOAC 999.15
Beta Carotene	EN12812-3:1999
Beta Carotene	COST 91 (1986)
Amino acids	Anal. Biochem 178 (1989) 318 (modified)
Tryptophene	Journal of Science Food and Agriculture

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References

AOAC	Association of Official Analytical Chemists (17 th Edition)
BP	British Pharmacopoeia
BS	British Standards
Codex CAC	Codex Alimentarius Commission
IDF	International Dairy Federation
USFDA PAM	US Food and Drug Administration, Pesticide Analytical Manual
JAOAC	Journal of Association of Official Analytical Chemists
JMA	Journal of Micronutrient Analysis
AOCS	American Oil Chemists Society
EN	European standard
COST	European Cooperation in Science and Technology
ADMI	American Dairy Products Institute
ACI	Australian Chemical Institute
APHA	Examination of Dairy Products

Microbiology

9.02 Dairy Products - Microbiological Tests

In accordance with current editions of tests published in NZTM2: New Zealand Dairy Industry Microbiological Methods Manual except where otherwise indicated

- (a) **Milk**
- (b) **Cream**
- (c) **Milk powders**
- (d) **Butter**
- (e) **Other fat products**
- (f) **Cheese**
- (g) **Caseins and caseinates**
- (h) **Whey products**
- (i) **Cultured products**
- (j) **Frozen confectionery**
- (k) **Dairy foods**
- (l) **Ice cream**
- (n) **Alamin**
- (o) **Lactose**
- (p) **Milk protein concentrate**

Aerobic Plate Count	43.03
Aerobic Plate Count	43.1
Aerobic Plate Count	132.35
Aerobic Plate Count	IDF 100B:1991
Aerobic Plate Count	ISO 4833:2003(E)

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<i>Bacillus cereus</i> count	44.1
<i>Bacillus cereus</i> detection	44.2
<i>Bacillus cereus</i> count	132.42
<i>Bacillus cereus</i> count	ISO 7932:2004
<i>Clostridium perfringens</i>	46.1
<i>Clostridium perfringens</i>	46.2
<i>Clostridium perfringens</i>	132.43
<i>Clostridium perfringens</i>	ISO 7937:2004
Coagulase-positive <i>Staphylococcus aureus</i>	47.1
Coagulase-positive <i>Staphylococcus aureus</i>	47.2
Coagulase-positive <i>Staphylococcus aureus</i>	ISO 5944/IDF 60:2001
Coagulase-positive <i>Staphylococcus aureus</i>	ISO 6888-1:2003
<i>Staphylococcus aureus</i> count	132.89
Coliforms	48.1
Coliforms	48.2
Coliforms	48.5
Coliforms	ISO 4832:2006
Coliforms	ISO 11866-1/IDF 170-1:2005 (modified)
<i>E coli</i> detection	48.5
<i>E coli</i> count	48.7
<i>E coli</i> detection	48.10
<i>E coli</i> detection	48.11
<i>E coli</i> detection	48.12
<i>E coli</i> detection	132.38
<i>E coli</i> count	ISO 16649-2:2001
<i>E coli</i> detection	ISO 11866-1/IDF 170-1:2005 (modified)
Enterobacteriaceae count	49.1
Enterobacteriaceae count	132.88
Enterobacteriaceae detection	49.2
Enterobacteriaceae detection	132.46
Enterobacteriaceae count	ISO 21528-2:2004
Enterobacteriaceae detection	ISO 21528-1:2004
<i>Enterobacter sakazakii</i> screen	49.4
<i>Enterobacter sakazakii</i> screen	132.87
<i>Enterobacter sakazakii</i> screen	49.5
<i>Enterobacter sakazakii</i> screen	ISO/TS 22964 / IDF/RM 210:2006
<i>Enterobacter sakazakii</i> screen	BAX
Enterococci count	50.1
Enterococci detection	50.2
Enterococci detection	132.39
Enterococci count	132.43
Inhibitory Substances	51.1
Inhibitory Substances	51.2
Inhibitory Substances	51.3
Inhibitory Substances	IDF 57:1987 (modified)
Inhibitory Substances	FDA BAM 20A
<i>Listeria monocytogenes</i>	53.1
<i>Listeria monocytogenes</i>	53.2

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<i>Listeria monocytogenes</i>	53.3 (TECRA)
<i>Listeria monocytogenes</i>	ISO 11290-1: Amt 2004
<i>Listeria monocytogenes</i>	FDA BAM 10
<i>Listeria monocytogenes</i>	BAX
Non-Starter Lactic Acid Bacteria	54.1
Non-Starter Lactic Acid Bacteria	Jnl of Bac 62 132 (1951)
<i>Pseudomonas</i>	56.1
Psychrotrophic Bacteria	57.1
Psychrotrophic Bacteria	ISO 6730/IDF 101:2005
<i>Salmonella</i>	58.1
<i>Salmonella</i>	58.2
<i>Salmonella</i>	58.3
<i>Salmonella</i>	58.4 (TECRA)
<i>Salmonella</i>	58.5
<i>Salmonella</i>	ISO 6785:2001
<i>Salmonella</i>	ISO 6579:2002
<i>Salmonella</i>	FDA BAM Ch. 5
Mesophilic Aerobic Spore Count	59.01
Mesophilic Anaerobic Spore Count	59.2
Sulphite Reducing Clostridial Spore Count	59.3
Sulphite Reducing Clostridial Spore Count	132.44
Sulphite Reducing Clostridial Spore Count	ISO 15213: 2003(E)
Sulphite Reducing Clostridial Spore Count (46°)	ISO 15213: 2003(E) (modified)
Thermophilic Aerobic Spore Count	59.4
Thermophilic organisms	60.1
Thermophilic organisms	APHA 8.040
Yeasts and Moulds	61.02
Yeasts and Moulds	61.03
Yeasts and Moulds	61.1
Yeasts and Moulds	132.36
Yeasts and Moulds	ISO 6611:2004
Yeasts and Moulds	IDF 94:2004
Staphylococcal enterotoxin	62.1
Staphylococcal enterotoxin	FDA BAM Ch.13A (ELISA)
<i>Clostridium tyrobutyricum</i>	NZJFST 11, pp100-103(1976)

The following tests in accordance with Nutricia methods on **Milk Powder**

Aerobic Plate Count at 30 °C, 55 °C	M01_02ME:2001
<i>Bacillus cereus</i> count	M01_03ME:2001
<i>Staphylococcus aureus</i> count	M01_05ME:2001
Yeasts and moulds count	M01_06ME:2001
Enterobacteriaceae detection	M01_07ME:2006
Enterobacteriaceae count	M01_08ME:2006
<i>E coli</i> detection	M01_09ME:2006
<i>Clostridium perfringens</i> detection	M01_10ME:2001
Sulphite-reducing Clostridia Spore count	M01_11ME:2001
Enterococci detection	M01_12ME:2001

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Enterococci count M01_13ME:2001
Enterobacter sakazakii M01_30ME:2005

9.31 Microbiological Condition in Dairy Factories

In accordance with current editions of tests published in NZTM2: New Zealand Dairy Industry Microbiological Methods of Manual except where otherwise indicated

(c) Environment Hygiene Evaluation

Listeria	53.1
Listeria	53.2
Listeria	FDA BAM 10
Listeria	TECRA
Salmonella	58.2
Salmonella	58.4
Salmonella	TECRA
Swabbing for hygiene evaluation	120.1
Swabbing for hygiene evaluation	BS 4285-4:1991
<i>Enterobacter sakazakii</i>	49.5
<i>Enterobacter sakazakii</i>	BAX

9.51 Testing of Other Specified Products

Clostridium tyrobutyricum NZJFST 11, pg 100-106 (1976)

References

IDF	International Dairy Federation
BS	British Standards
ISO	International Organisation for Standardisation
BAM	United States Food and Drug Administration, Bacteriological Analytical Manual (online)
Jnl of Bac	Journal of Bacteriology
AQIS	Australian Quarantine and Inspection Services and SM87R13:1987
APHA:	American Public Health Association "Standard Methods for the Examination of Dairy and Dairy Products"

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