



Scheme Description

Dairy Chemistry (QDCS) Proficiency Testing Scheme

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Issue No: 34
Issued: September 2026



RECORD OF ISSUE STATUS AND MODIFICATIONS

Issue	Issue Date	Details	Authorised by
22	Apr 21	Amended units for sample 65, updated methods for 68 Amended accreditation status for colour in sample 63	S. Xystouris A. Collins
23	July 21	Added Vitamin B12 & Vitamin E in sample 44. Removed A & M analyte from 31. Changed format of sample 68 Updated email address and UKAS LOGO	L. Fielding S Xystouris A. Collins
24	Feb 22	Added pH into samples 38A, 38B, 51, 52 and 66	L. Fielding
25	July 2022	Sample 67 analytes updated add lactose, calcium, and phosphorus. Samples 34 and 57 (antibiotics) removed and replaced with samples 70, 71 & 72. Sample 31 (phosphatase) moved to separate category	L. Fielding W. Gaunt
26	January 2023	Sample 68 is now accredited, Quantity of sample 67 changed to 100g and Quantity of sample 66 changed to 100g	A. Collins
27	July 2023	Removal for Cholesterol from sample 59. Removal of sample 41 and analytes added to sample 42. New samples added 74, 75 and 76.	L. Fielding S. Xystouris
28	July 2024	pH added to sample 67 Nickel added to sample 74 Methods split for Bulk density in sample 43 Added GOS in sample 76 Added a new sample 77 and 78 Specified the type of cheese for sample 73 Clarified units for sample 44	R. Connolly S. Xystouris
29	June 2025	pH added to sample 39	W. Gaunt
30	July 2025	Removal of sample 35 Updated name for samples 42 & 44 Updated SDPA for 77 Protein Added analytes in 76 (Chloride, Nitrogen, Choline, Vitamin K1, Iodine, Non-protein Nitrogen) and removed net carbohydrates Added Selenium to 42 and Vitamins B1, B2, B6 to 44. Methods for Titratable acidity in milk powders reviewed.	R. Connolly S. Xystouris
31	Nov 2025	Amended "Supplied as" section for Sample 60 Increased volume of samples 42 and 44 to 50g	S. Xystouris R. Connolly
32	Feb 2026	PT-CH-60 accredited under flexible scope	A Collins
33	May 2026	SDPA for pH in 37 updated New UKAS logo added	R. Connolly A Collins
34	June 2026	Analytes for sample 63 corrected Added ash in 52, solids non-fat in 28 & 58 Improved description for 42, 44, 74, 75, 76 Changed units for 74, added "total" to Arsenic and two new analytes Added new samples 79 and 80	R. Connolly S. Xystouris

Notes: Where this document has been translated, the English version shall remain the definitive version

SCHEME INFORMATION

Scheme Aims and Organisation

The primary aim of the Dairy Chemistry Proficiency Testing Scheme (QDCS) is to enable laboratories performing the analysis of dairy products to monitor their performance and compare it with that of their peers. QDCS also aims to provide information to participants on technical issues and methodologies relating to the chemical examination of foods.

The QDCS scheme year operates from January to December. Further information about QDCS, including test material availability, round despatch dates and reporting deadlines, are available on the current QDCS application form

Test Materials

Details of test materials available in QDCS are given in the 'Samples Available' section. The test parameters are continually reviewed to ensure they meet the needs of current laboratory testing and regulatory requirements.

Test material batches are tested for homogeneity for at least one test parameter where deemed appropriate. Details of homogeneity tests performed and results are given in the QDCS Scheme Reports.

Some aspects of the scheme, such as test material production, homogeneity testing and stability assessment, can from time to time be subcontracted. When subcontracting occurs, it is placed with a competent subcontractor and LGC is responsible for this work. The planning of the scheme, the evaluation of performance and the authorisation of the final report will never be subcontracted.

Statistical Analysis

Information on the statistics used in QDCS can be found in the General Protocol and in the Scheme Report. Methods for determining assigned values and the values for SDPA used for individual samples are given in the 'Samples Available' section.

Methods

Methods are listed PORTAL. Please select the most appropriate method from the list. If none of the methods are appropriate, then please report your method as 'Other' and record a brief description in the Comments Section in PORTAL.

Results and Reports

QDCS results are returned through our electronic reporting software, PORTAL, full instructions for which are provided by email.

QDCS reports will be available on the website within 10 working days of round closure. Participants will be emailed a link to the report when it is available.

DESCRIPTION OF ABBREVIATIONS USED

Assigned Value (AV)

The assigned value may be derived in the following ways:

- From the robust mean (median) of participant results (RMean). This is the median of participant results after the removal of test results that are inappropriate for statistical evaluation, e.g. miscalculations, transpositions and other gross errors. Generally, the assigned value will be set using results from all methods, unless the measurement is considered method-dependant, in which case the assigned value will be set by method and indicated in the report tables. For some analytes, where there is a recognised reference method for that type of measurement, this may be used as the assigned value for a particular analyte i.e. it would be applied to results obtained by any method.

Traceability: Assigned values which are derived from the participant results, or a sub-set of the results are not traceable to an international measurement standard. The uncertainty of assigned values derived in this way is estimated from the participant results, according to ISO 13528.

- From a formulation value (Form). This denotes the use of an assigned value derived from sample preparation details, where known and exact quantities of analyte have been used to prepare the sample.

Traceability: Assigned values calculated from the formulation of the test sample are traceable, via an unbroken metrological traceability chain, to an international measurement standard. The measurement uncertainty of the assigned value is calculated using the contributions from each calibration in the traceability chain.

- From a qualitative formulation (Qual Form). This applies to qualitative tests where the assigned value is simply based on the presence/absence of the analyte in the test material.

Traceability: Assigned values calculated from the qualitative formulation of the test sample are traceable to a certified reference standard or a microbiological reference strain.

- From expert labs (Expert). The assigned value for the analyte is provided by an 'expert' laboratory.

Traceability: Assigned values provided by an 'expert' laboratory may be traceable to an international measurement standard, according to the laboratory and the method used. The uncertainty of measurement for an assigned value produced in this way will be provided by the laboratory undertaking the analysis. Details of traceability and the associated uncertainty will be provided in the report for the scheme/round.

Range

This indicates the concentration range at which the analyte may be present in the test material.

SDPA

The SDPA represents the 'standard deviation for proficiency assessment' which is used to assess participant performance for the measurement of each analyte. This may be a fixed value (as stated), a percentage (%) of the assigned value or based on the robust standard deviation of the participant measurement results, either across all methods or by method depending on whether the measurement made is method dependent (see assigned value).

Units

This indicates the units used for the assessment of data and in which participants should report their results. For some analytes in some schemes participants may have a choice of which units to report their results, however, the units stipulated in this scheme description are the default units to which any results reported using allowable alternative results will be converted to.

DP

This indicates the number of decimal places to which participants should report their measurement results.

SAMPLES AVAILABLE

Nutritional Information

Sample PT-CH-27

Supplied as

Skimmed/non-fat milk for fat analysis

250mL skimmed/non-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Filter NIR FTMIR Gerber Rose Gottlieb	0.1 – 0.5	Median	0.03	%	2

Sample PT-CH-28

Supplied as

Whole/full-fat milk for protein analysis

250mL whole/full-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
Protein	Dumas FTMIR IR Kjeldahl NIR	3 – 4	Median	0.04	%	2
Calcium	AAS ICP-OES Titration	All	Median	10% of AV	mg/100g	2
Total Solids	FTIR FTMIR Microwave Moisture Analyser Oven Drying	All	Median	Robust SD	%	2
Lactose	FTIR HPLC Spectrophotometer	All	Median	Robust SD	% lactose monohydrate	2
Solids non-fat	GB 5413.39 (gravimetric drying method) Gravimetry Other	All	Median	Robust SD	% g/100g	2

Sample PT-CH-29

Supplied as

Titratable acidity solution

125mL HCl solution

Analyte	Method	Range	AV	SDPA	Units	DP
Titratable Acidity	Titration	All	Median	Robust SD (min 0.03)	% lactic acid	2

Sample PT-CH-31 (A & B) Phosphatase
 Supplied as 2 x 10mL freeze dried milk

Analyte	Method	Range	AV	SDPA	Units	DP
Phosphatase	Fluorescence	≤ 200	Median	12% of AV	mU/L	1
		> 200	Median	10% of AV	mU/L	1
	Luminescence	All	Median	20% of AV	mU/L	1

Sample PT-CH-32A pH in milk
 Supplied as 250mL whole/full-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
pH	pH Meter	All	Median	0.05	-	2

Sample PT-CH-32B pH solution
 Supplied as 250mL buffer solution

Analyte	Method	Range	AV	SDPA	Units	DP
pH	pH Meter	All	Median	0.05	-	2

Sample PT-CH-36 Butter for nutritional analysis
 Supplied as 250g butter

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Acid Hydrolysis & Soxhlet Gerber NIR NMR Soxhlet	All	Median	Robust SD	%	2
Saturates	GC	All	Median	Robust SD	%	2
Salt	Chloride Analyser Mohr Potentiometric Titration Volhard	All	Median	0.05	% (NaCl)	2
Sodium	AAS Flame Photometry ICP-MS ICP-OES Titration	All	Median	Robust SD	% (Na)	2

Analyte	Method	Range	AV	SDPA	Units	DP
Moisture	Automatic Food Analyser Automatic Moisture Analyser Flame Drying Heating to Constant Weight Hotplate Drying Microwave Oven Drying	All	Median	0.2	%	2
pH	pH Meter	All	Median	0.1	-	2
Solids-non-fat (SNF)	Calculation NIR Oven Drying	All	Median	Robust SD	%	2

Sample PT-CH-37

Supplied as

Hard cheese for nutritional analysis

100g hard cheese

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Babcock Food Analyser Gerber Mojonnier NIR NMR Rose Gottlieb Schmid Boudzynski Ratzlaff Van Gulik Werner Schmid	All	Median	0.50	%	2
Saturates	GC	All	Median	Robust SD	%	2
Protein	Dumas Kjeldahl NIR	All	Median	0.5	%	2
Salt (from chloride)	Chloride Analyser Mohr Potentiometric Titration Volhard	All	Median	0.08	%	2
Sodium	AAS Flame Photometry ICP-MS ICP-OES Titration	All	Median	Robust SD	%	2

Analyte	Method	Range	AV	SDPA	Units	DP
Moisture	Automatic Food Analyser Automatic Moisture Analyser Heating to Constant Weight Hotplate Drying Microwave Oven Drying Vacuum Oven	All	Median	0.45	%	2
pH	pH Meter	All	Median	0.10	-	2
Cholesterol	GC	All	Median	Robust SD	%	2
Calcium	AAS ICP-MS ICP-OES	All	Median	Robust SD	%	2
Lactose	HPLC Spectrophotometer	All	Median	Robust SD	% lactose monohydrate	2
Ash	Gravimetry	All	Median	Robust SD	%	2

Sample PT-CH-38A

Supplied as

Quality of skimmed/non-fat milk powder

120g Skimmed/non-fat milk powder

Analyte	Method	Range	AV	SDPA	Units	DP
Moisture	Automatic Food Analyser Automatic Moisture Analyser Heating to Constant Weight Oven Drying Vacuum Oven	All	Median	0.1	%	2
Ash	Drying at 525°C Drying at 550°C	All	Median	0.07	%	2
Scorched Particles	ADPI 005 BS1743: Part 19: 1985	All	Formulation	-	-	-
pH	pH Meter	All	Median	0.1	-	2

Sample PT-CH-38B

Supplied as

Quality of whey powder

120g Whey powder

Analyte	Method	Range	AV	SDPA	Units	DP
Moisture	Moisture Analyser Oven Drying at 102°C Oven Drying at 87°C	All	Median	0.12	%	2
Scorched Particles	ADPI 005 BS1743: Part 19: 1985	All	Formulation	-	-	-

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Acid Hydrolysis & Soxhlet FTMIR Mojonnier Rose Gottlieb		Median	Robust SD	%	2
Protein	Dumas Kjeldahl		Median	Robust SD	%	2
Ash	Drying at 525°C Drying at 550°C	All	Median	Robust SD	%	2
Lactose	HPLC Spectrophotometer		Median	Robust SD	% lactose monohydrate	2
Galactose	HPLC		Median	Robust SD	%	2
pH	pH Meter	All	Median	0.1	-	2

Sample PT-CH-39

Supplied as

Whipping cream for nutritional analysis

240g Whipping cream

Analyte	Method	Range	AV	SDPA	Units	DP
pH**	pH Meter	All	Median	0.1	-	2
Fat	Filter NIR FTMIR Gerber Rose Gottlieb	30 – 40	Median	0.5	%	2
Protein	Dumas Kjeldahl NIR	All	Median	Robust SD	%	2
Dry Matter	Oven Drying	All	Median	Robust SD	%	2
Titrateable Acidity	Titration	All	Median	Robust SD (min 0.03)	% lactic acid	2

Sample PT-CH-40

Supplied as

Semi-skimmed/low-fat milk for fat analysis

250mL semi-skimmed/low-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Filter NIR FTMIR Gerber Rose Gottlieb	1.2 – 2.0	Median	0.05	%	2

**Currently not included in LGC's UKAS Scope of Accreditation

Sample PT-CH-42

Supplied as

Infant Formula for element analysis

50g infant formula powder

Analyte	Method	Range	AV	SDPA	Units	DP
Calcium	AAS ICP-MS ICP-OES	All	Median	5% of AV	mg/100g	1
Potassium	AAS ICP-MS ICP-OES	All	Median	5% of AV	mg/100g	1
Copper	AAS ICP-MS ICP-OES	All	Median	5% of AV (min 0.1)	mg/kg	2
Sodium	AAS ICP-MS ICP-OES	All	Median	5% of AV	mg/100g	1
Chloride	IC Potentiometric Titration Visual Titration	All	Median	5% of AV	mg/100g	1
Iron	AAS ICP-MS ICP-OES	All	Median	5% of AV (min 5.0)	mg/kg	1
Magnesium	AAS ICP-MS ICP-OES	All	Median	5% of AV	mg/100g	1
Manganese	AAS ICP-MS ICP-OES	All	Median	5% of AV	µg/100g	2
Phosphorus	ICP-MS ICP-OES Spectrophotometry	All	Median	5% of AV	mg/100g	1
Zinc	AAS ICP-MS ICP-OES	All	Median	5% of AV (min 5.0)	mg/kg	1
Selenium**	AAS ICP-MS ICP-OES	All	Median	Robust SD	µg/100g	2

**Analyte currently not included in LGC's UKAS Scope of Accreditation

Sample PT-CH-43
Supplied as

Whey powder for quality analysis
120g Whey protein concentrate

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Gerber IR Mojonnier Rose Gottlieb	All	Median	0.20	%	2
Protein	Dumas IR Kjeldahl	All	Median	0.75	%	2
Moisture	IR Oven Drying Vacuum Oven	All	Median	0.75	%	2
Ash	Drying at 525°C Drying at 550°C	All	Median	0.10	%	2
pH	pH Meter	All	Median	Robust SD	-	2
Bulk density	Extreme Bulk Density (x1250)	All	Median	Robust SD	g/mL	2
	Loose/poured Bulk Density		Median	Robust SD	g/mL	2
	Tapped Bulk Density (x100)		Median	Robust SD	g/mL	2
Lactose	Enzymatic HPLC IR Luff Schoorl	All	Median	Robust SD	% lactose monohydrate	2
Insolubility index	ADPI Standard ISO 8156:2005 (IDF 129:2005)	All	Median	Robust SD	mL	2

Sample PT-CH-44
Supplied as

Infant Formula for vitamin analysis
50g infant formula powder

Analyte	Method	Range	AV	SDPA	Units	DP
Vitamin A	HPLC	All	Median	Robust SD	µg/100g as retinol	2
Vitamin B12	HPLC	All	Median	Robust SD	µg/100g as cyanocobalamin	2
Vitamin C	HPLC Titration	All	Median	Robust SD	mg/100g as ascorbic acid	2
Vitamin D	HPLC	All	Median	Robust SD	µg/100g as sum of D2 & D3	2
Vitamin E	HPLC	All	Median	Robust SD	mg/100g as α-tocopherol	2
Vitamin B1	HPLC	All	Median	Robust SD	µg/100g as thiamine	2
Vitamin B2	HPLC	All	Median	Robust SD	mg/100g as riboflavin	2
Vitamin B6	HPLC	All	Median	Robust SD	µg/100g as pyridoxine HCl	2

Sample PT-CH-51

Supplied as

Skimmed/non-fat milk powder for quality analysis

120g Skimmed/non-fat milk powder

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	FTMIR Gerber Mojonnier Rose Gottlieb Soxhlet	All	Median	0.20	%	2
Protein	Dumas IR Kjeldahl	All	Median	0.50	%	2
WPNI	ADPI Standard GEA Niro A21a	All	Median	Robust SD	mg/g	2
Titratable acidity (as % lactic acid)	GEA Niro method A19a	All	Median	Robust SD	% lactic acid	2
	BS 1743-7.2: 1982					
	SMEDP 15.021					
	Titration					
Titratable acidity (as mL of 0.1M NaOH)	ISO 6091: 2010 (IDF 86: 2010)	All	Median	Robust SD	mL 0.1M NaOH/10 g solids non fat (SNF)	2
	ISO 6092:1980					
	Titration					
Insolubility index	ADPI Standard ISO 8156:2005 (IDF 129:2005)	All	Median	Robust SD	mL	2
pH	pH Meter	All	Median	0.1	-	2

Sample PT-CH-52

Supplied as

Whole/full-fat milk powder for quality analysis

120g Whole/full-fat milk powder

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	FTMIR Gerber Mojonnier Rose Gottlieb Soxhlet	All	Median	0.50	%	2
Protein	Dumas IR Kjeldahl	All	Median	0.50	%	2
Moisture	Automatic Food Analyser Automatic Moisture Analyser Heating to Constant Weight Oven Drying Vacuum Oven	All	Median	0.15	%	2
WPNI	ADPI Standard GEA Niro A21a	All	Median	Robust SD	mg/g	2

Analyte	Method	Range	AV	SDPA	Units	DP
Titratable acidity (as % lactic acid)	GEA Niro method A19a	All	Median	Robust SD	% lactic acid	2
	BS 1743-7.2: 1982					
	SMEDP 15.021					
	Titration					
Titratable acidity (as mL of 0.1M NaOH)	ISO 6091: 2010 (IDF 86: 2010)	All	Median	Robust SD	mL 0.1M NaOH/10 g solids non fat (SNF)	2
	ISO 6092:1980					
	Titration					
Insolubility index	ADPI Standard GEA Niro A3a ISO 8156:2005 (IDF 129:2005)	All	Median	Robust SD	mL	2
pH	pH Meter	All	Median	0.1	-	2
Ash	Drying at 525°C Drying at 550°C	All	Median	0.10	%	2

Sample PT-CH-53

Supplied as

Single/light cream for fat analysis

240gL single/light cream

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Filter NIR	12 – 25	Median	0.5	%	2
	FTMIR					
	Gerber					
	Rose Gottlieb					
	Soxhlet					

Sample PT-CH-54

Supplied as

Double/heavy cream for fat analysis

240g double/heavy cream

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Filter NIR	40 – 50	Median	0.5	%	2
	FTMIR					
	Gerber					
	Rose Gottlieb					
	Soxhlet					

Sample PT-CH-55

Supplied as

Whole/full-fat milk for fat analysis

250mL whole/full-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Filter NIR	2.8 - 5	Median	0.05	%	2
	FTMIR					
	Gerber					
	Rose Gottlieb					

Sample PT-CH-56

Supplied as

Whole/full-fat milk for FPD analysis

250mL whole/full-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
Titrateable Acidity	Titration	All	Median	Robust SD (min 0.03)	% lactic acid	3
Freezing Point	Cryoscope Lactoscope	All	Median	2.0	m°C	1

Sample PT-CH-58

Supplied as

Yogurt for quality analysis

100g Yogurt

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Gerber Mojonnier NIR Rose Gottlieb Soxhlet	All	Median	0.15	%	2
Protein	Dumas IR Kjeldahl	All	Median	0.08	%	2
Salt	Determined from Chloride Determined from Sodium NIR Potentiometric Titration	All	Median	0.08	% (NaCl)	2
Sodium	AAS IC ICP-MS ICP-OES	All	Median	Robust SD	% (Na)	2
Total Solids	Microwave Moisture Analyser Oven Drying	All	Median	0.25	%	2
pH	pH Meter	All	Median	0.06	-	2
Calcium	ICP-MS ICP-OES	All	Median	Robust SD	%	2
Solids non-fat	GB 5413.39 (gravimetric drying method) Gravimetry Other	All	Median	Robust SD	% g/100g	2

Sample PT-CH-59

Supplied as

Soft Cheese for quality analysis

100g Soft cheese

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Babcock Food Analyser Gerber Mojonnier NIR Rose Gottlieb Schmid Boudzynski Ratzlaff Van Gulik Werner Schmid	All	Median	0.50	%	2
Saturates	GC	All	Median	Robust SD	%	2
Protein	Dumas IR Kjeldahl NIR	All	Median	0.50	%	2
Salt (from chloride)	Chloride Analyser Mohr Potentiometric Titration Volhard	All	Median	0.08	% (NaCl)	2
Sodium	AAS Flame Photometry ICP-MS ICP-OES	All	Median	Robust SD	% (Na)	2
Moisture	Automatic Food Analyser Automatic Moisture Analyser Heating to Constant Weight Hotplate Drying Microwave Oven Drying Vacuum Oven	All	Median	0.45	%	2
pH	pH Meter	All	Median	0.06	-	2
Calcium	AAS ICP-MS ICP-OES	All	Median	Robust SD	%	2
Lactose	HPLC Spectrophotometer	All	Median	Robust SD	% lactose monohydrate	2
Ash	Gravimetry	All	Median	Robust SD	%	2

Analyte	Method	Range	AV	SDPA	Units	DP
Total Dietary Fibre	AOAC 985.29 AOAC 991.43 AOAC 2017.16 AOAC 2022.01	All	Median	Robust SD	%	2

Sample PT-CH-60

Aflatoxin M1 in milk

Supplied as

25ml milk (when reconstituted)-

Analyte	Method	Range	AV	SDPA	Units	DP
Aflatoxin M1	ELISA HPLC Lateral Flow (e.g. Charm, Neogen)	20 – 200	Median	25% of AV	ng/kg	1

Sample PT-CH-62

Aflatoxin M1 in cheese

Supplied as

70g soft cheese

Analyte	Method	Range	AV	SDPA	Units	DP
Aflatoxin M1	ELISA HPLC LC-MS	All	Median	25% of AV	µg/kg	2

Sample PT-CH-63

Powdered Cheese for quality analysis

Supplied as

100g Cheese powder

Analyte	Method	Range	AV	SDPA	Units	DP
Salt	Chloride Analyser Mohr Potentiometric Titration	All	Median	Robust SD	%	2
Moisture	Automatic Moisture Analyser Heating to Constant Weight Microwave Oven Drying Vacuum Oven	All	Median	Robust SD	%	2
pH	pH Meter	All	Median	Robust SD	-	2
Fat	Gerber Mojonnier Rose Gottlieb Schmid Boudzynski Ratzlaff Soxhlet	All	Median	Robust SD	%	2
Protein	Dumas IR Kjeldahl NIR	All	Median	Robust SD	%	2

Analyte	Method	Range	AV	SDPA	Units	DP
Ash	Drying at 525°C Drying at 550°C	All	Median	Robust SD	%	2
Sodium	AAS ICP-MS ICP-OES	All	Median	Robust SD	%	2
Colour	Lovibond	All	Median	Robust SD	Lovibond	1

Sample PT-CH-65**

Supplied as

Nitrate and nitrite in milk powder

50g milk powder

Analyte	Method	Range	AV	SDPA	Units	DP
Nitrate	IC ISO 14673-3:2004 Spectrophotometry	All	Median	Robust SD	mg NaNO ₃ /kg	2
Nitrite	IC ISO 14673-3:2004 Spectrophotometry	All	Median	Robust SD	mg NaNO ₂ /kg	2

Sample PT-CH-66

Supplied as

Condensed milk for nutritional analysis

100g Condensed milk

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Gerber Rose Gottlieb	All	Median	Robust SD	%	2
Saturates	GC	All	Median	Robust SD	%	2
Carbohydrate	Calculation	All	Median	Robust SD		
Total Sugars	HPLC Titration	All	Median	Robust SD		
Protein	Dumas IR Kjeldahl NIR	All	Median	Robust SD	%	2
Salt	Chloride Analyser Mohr Potentiometric Titration	All	Median	Robust SD	% (NaCl)	2
Sodium	AAS ICP-MS ICP-OES	All	Median	Robust SD	% (Na)	2
pH	pH Meter	All	Median	0.1	-	2

**Currently not included in LGC's UKAS Scope of Accreditation

Sample PT-CH-67

Supplied as

Processed cheese for nutritional analysis

100g Processed cheese

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Babcock Gerber Mojonnier NMR Rose Gottlieb Schmid Boudzynski Ratzlaff Soxhlet	All	Median	Robust SD	%	2
Saturates	GC	All	Median	Robust SD	%	2
Cholesterol	Enzymatic GC Spectroscopy	All	Median	Robust SD	%	2
Carbohydrate	Calculation	All	Median	Robust SD	%	2
Total Sugars	HPLC	All	Median	Robust SD	%	2
Protein	Dumas IR Kjeldahl NIR	All	Median	Robust SD	%	2
Salt	Chloride Analyser Mohr Potentiometric Titration Volhard	All	Median	Robust SD	% (NaCl)	2
Sodium	AAS Flame Photometry ICP-MS ICP-OES	All	Median	Robust SD	% (Na)	2
Moisture	Oven Drying	All	Median	Robust SD	%	2
Sorbic Acid	HPLC	All	Median	Robust SD	mg/kg	2
Lactose	Enzymatic HPLC IC	All	Median	Robust SD	% lactose monohydrate	2
Calcium	AAS ICP-MS ICP-OES	All	Median	Robust SD	mg/100g	1
Phosphorus	ICP-MS ICP-OES Spectrophotometry	All	Median	Robust SD	mg/100g	1
pH	pH Meter	All	Median	Robust SD	-	2

Sample PT-CH-68 (A & B) Staphylococcal Enterotoxins in cheese
Supplied as 2 x 70g soft cheese

Analyte	Method	Range	AV	SDPA	Units	DP
Staphylococcal Enterotoxins	BAM Chapter 13B ISO 19020:2017 Ridascreen SET Total (R-Biopharm) VIDAS SET 2 (bioMérieux)	-	Formulation	-	-	-

Sample PT-CH-70 (A & B) Antibiotics (Beta lactams) in milk
Supplied as 2 x 5mL freeze-dried milk

Analyte	Method	Range	AV	SDPA	Units	DP
Antibiotics (Beta lactams)	Auroflow Betastar Charm Delvotest SP-NT Delvotest P Delvotest T IDEXX Snap Beta-Lactam Trisensor Twinsensor	-	Formulation	-	-	-

Sample PT-CH-71 (A & B) Antibiotics (Sulphonamides) in milk
Supplied as 2 x 5mL freeze-dried milk

Analyte	Method	Range	AV	SDPA	Units	DP
Antibiotics (Sulphonamides)	Charm Delvotest SP-NT Delvotest P Delvotest T Trisensor	-	Formulation	-	-	-

Sample PT-CH-72 (A & B) Antibiotics (Tetracyclines) in milk
Supplied as 2 x 5mL freeze-dried milk

Analyte	Method	Range	AV	SDPA	Units	DP
Antibiotics (Tetracyclines)	Charm Delvotest SP-NT Delvotest T IDEXX Snap Tetracyclines Trisensor Twinsensor	-	Formulation	-	-	-

Sample PT-CH-73**

Supplied as

Natamycin in cheese

25g grated cheese

Analyte	Method	Range	AV	SDPA	Units	DP
Natamycin	HPLC	All	Median	Robust SD	mg/kg	2

Sample PT-CH-74**

Supplied as

Infant Formula for toxic element analysis

10g infant formula powder

Analyte	Method	Range	AV	SDPA	Units	DP
Lead	AAS ICP-MS ICP-OES	All	Median	Robust SD	µg/kg	1
Cadmium	AAS ICP-MS ICP-OES	All	Median	Robust SD	µg/kg	1
Total Arsenic	AAS ICP-MS ICP-OES	All	Median	Robust SD	µg/kg	1
Total Inorganic arsenic ^{1***}	LC-ICP-MS	All	Median	Robust SD	µg/kg	2
Dimethylarsenic acid (DMA)	LC-ICP-MS	All	Median	Robust SD	µg/kg	2
Mercury	AAS ICP-MS ICP-OES	All	Median	Robust SD	µg/kg	1
Nickel	AAS ICP-MS ICP-OES	All	Median	Robust SD	µg/kg	1

¹Sum of As (III) and As (V)

Sample PT-CH-75**

Supplied as

Density in liquid infant formula

150 – 200mL liquid infant formula

Analyte	Method	Range	AV	SDPA	Units	DP
Density	Anton Parr Densitometer Density Cup Gravimetric Pycnometer	All	Median	Robust SD	g/mL	5

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Sample PT-CH-76**

Supplied as

Infant formula for nutritional analysis

150g infant formula powder

Analyte	Method	Range	AV	SDPA	Units	DP
Fat	Food Analyser Gerber Mojonnier NMR Rose Gottlieb	All	Median	Robust SD	%	2
Saturates	GC	All	Median	Robust SD	%	2
Carbohydrate	Calculation	All	Median	Robust SD	%	2
Total Sugars	HPLC	All	Median	Robust SD	%	2
Protein	Dumas Kjeldahl NIR	All	Median	Robust SD	%	2
Salt	Chloride Analyser Mohr Potentiometric Titration Volhard	All	Median	Robust SD	% (NaCl)	2
Fibre	AOAC 985.29 AOAC 991.43 AOAC 2017.16 AOAC 2022.01	All	Median	Robust SD	%	2
Docosahexaenoic acid (DHA)	GC-FID GC-MS	All	Median	Robust SD	%	2
Arachidonic acid (ARA)	GC-FID GC-MS	All	Median	Robust SD	%	3
β-galactooligosaccharides (GOS)	AOAC 2001.02 AOAC 2001.02 Modified IC-PAD	All	Median	Robust SD	%	2
Chloride	Potentiometric titration (AOAC Official Method 2016.03), Ion Chromatography, Potentiometric titration (ISO 21422:2018 IDF 242:2018)	All	Median	Robust SD	mg/100g	2
Nitrogen (total)	ISO 14891:2008 (Dumas principle) Kjeldahl	All	Median	Robust SD	g/100g	2
Choline	Ion Chromatography, AOAC Method 2012.20 (ion chromatography)	All	Median	Robust SD	mg/100g	2
Vitamin K1 (cis + trans)	HPLC-UV, HPLC-Fluorescence	All	Median	Robust SD	µg/100g	3

Analyte	Method	Range	AV	SDPA	Units	DP
Iodine	Ion Chromatography, IC-PAD, ICP-MS	All	Median	Robust SD	mg/kg	3
Non-protein nitrogen	AOAC 991.21-1994, AOAC 991.22-1994	All	Median	Robust SD	g/100g	3

Sample PT-CH-77**

Supplied as

Skimmed/non-fat milk for protein analysis

250mL skimmed/non-fat milk

Analyte	Method	Range	AV	SDPA	Units	DP
Protein	Dumas FTMIR IR Kjeldahl NIR	3 – 4	Median	0.04	%	2
Calcium	AAS ICP-OES Titration	All	Median	10% of AV	mg/100g	2
Total Solids	FTIR FTMIR Microwave Moisture Analyser Oven Drying	All	Median	Robust SD	%	2
Lactose	FTIR HPLC Spectrophotometer	All	Median	Robust SD	% lactose monohydrate	2

Sample PT-CH-78**

Supplied as

2,3 butanedione (diacetyl) in butter

50g butter

Analyte	Method	Range	AV	SDPA	Units	DP
2,3 butanedione (diacetyl)	GC-FID GC-MS	All	Median	Robust SD	mg/kg	2

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Sample PT-CH-79

Supplied as

Freeze dried (powdered) yogurt for quality analysis

25g powdered yogurt (to be re-constituted)

Analyte	Method	Range	AV	SDPA	Units	DP
Energy	Type 1: Protein+Fat+Total Carb Type 2: Protein+Fat+Available Carb+TDF	All	Median	Robust SD	Kcal or kJ/100g	0
Fat	Gerber Mojonnier NIR Rose Gottlieb Soxhlet	All	Median	0.15	%	2
Protein	Dumas IR Kjeldahl	All	Median	0.08	%	2
Salt	Determined from Chloride Determined from Sodium NIR Potentiometric Titration	All	Median	0.08	% (NaCl)	2
Sodium	AAS IC ICP-MS ICP-OES	All	Median	Robust SD	% (Na)	2
Total Solids	Microwave Moisture Analyser Oven Drying	All	Median	0.25	%	2
pH	pH Meter	All	Median	0.06	-	2
Calcium	ICP-MS ICP-OES	All	Median	Robust SD	%	2
Solids non-fat	GB 5413.39 (gravimetric drying method) Gravimetry Other	All	Median	Robust SD	% g/100g	2

Sample PT-CH-80**

Supplied as

Casein in whole milk powder (composition)

25g whole milk powder

Analyte	Method	Range	AV	SDPA	Units	DP
Casein	AOAC 998.05, Other	All	Median	Robust SD	% w/w	2

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