

Reference Material and Inter-laboratory Quality Control Materials Product Summary

October 2025

Version: 3

Assigned Values: Values provided have been generated from Inter-Laboratory Proficiency Programmes (ILPP) or from data provided by laboratories for the purpose of characterisation. The reference material values provided in this summary are the mean of the results after the exclusion of statistical outliers. The Assigned Range provided for the Inter-laboratory QC Materials is the range of test values available for purchase. Each Reference and QC Material comes with a Data Summary Sheet.

Missing Values and Available Tests: For Reference Materials where property values do not meet the statistical criteria, the summary values have not been provided. For this reason, not all tests will be available for every Reference Material of the same matrix. However, if there are 3 or more data points available, an Assigned Value will be provided with the corresponding QC material.

Sample Sizes: Available sample sizes are shown for reference materials.

Ordering Reference Materials and/or Quality Control Materials, acknowledges you have read and understood our terms and conditions. These can be found at: <https://www.global-proficiency.com/terms-conditions>

Note: When ordering QC materials, please quote both the Product ID AND the process run (PR) number.

Reference Material: Anhydrous Milk Fat - Anhydrous Milk Fat

Matrix: Anhydrous Milk Fat	Product ID	982-C-1	995-C-1	994-C-1
	Expiry Date	1 Apr 26	1 Apr 26	14 Feb 27
	Sample Size	100mL	100mL	100mL
	Alkalinity (mg/kg)		3	4
	Carotene (mg/kg)		9.2	
	Free Fatty Acids (%)	0.15	0.16	0.14
	Moisture KF (%)	0.06	0.06	0.05
	Peroxide Value (meq O ₂ /kg)	0.05	0.06	0.07

QC Material: Anhydrous Milk Fat - Anhydrous Milk Fat

Matrix: Anhydrous Milk Fat	Product ID	15517-QC	16356-QC	16357-QC
	Process Run	PR12227	PR12330	PR12330
	Expiry Date	1 Apr 26	1 Apr 26	14 Feb 27
	Sample Size	100mL	100mL	100mL
	Alkalinity (mg/kg)		4	5
	Carotene (mg/kg)	8.3	9.1	7.8
	Free Fatty Acids (%)	0.15	0.17	0.14
	Moisture KF (%)	0.06	0.06	0.05
	Peroxide Value (meq O ₂ /kg)	0.05	0.06	0.07

QC Material: Milk Powders for Bulk Density - Instant WMP (100 taps)

Matrix: Milk Powders for Bulk Density	Product ID	15520-QC
	Process Run	PR12330
	Expiry Date	28 Feb 26
	Sample Size	120g
	Bulk Density 100 Taps (g/ml)	0.51

QC Material: Protein Powders for Bulk Density - Mineral Acid Casein (35 taps test only)

Matrix: Protein Powders for Bulk Density	Product ID	14653-QC
	Process Run	PR12198
	Expiry Date	3 Dec 25
	Sample Size	170g
	Bulk Density 35 Taps (g/ml)	0.68

QC Material: Protein Powders for Bulk Density - Calcium Caseinate (35 taps test only)

Matrix: Protein Powders for Bulk Density	Product ID	14652-QC
	Process Run	PR12393
	Expiry Date	7 Apr 26
	Sample Size	85g
	Bulk Density 35 Taps (g/ml)	0.38

QC Material: Protein Powders for Bulk Density - Sodium Caseinate (35 taps test only)

Matrix: Protein Powders for Bulk Density	Product ID	14650-QC
	Process Run	PR12198
	Expiry Date	3 Dec 25
	Sample Size	110g
	Bulk Density 35 Taps (g/ml)	0.58

QC Material: Protein Powders for Bulk Density - MPI (35 taps test only)

Matrix: Protein Powders for Bulk Density	Product ID	15523-QC
	Process Run	PR12393
	Expiry Date	14 Jan 26
	Sample Size	90g
	Bulk Density 35 Taps (g/ml)	0.40

QC Material: Protein Powders for Bulk Density - WPC80 (Min. Acid) 35 taps test only

Matrix: Protein Powders for Bulk Density	Product ID	16364-QC
	Process Run	PR12198
	Expiry Date	3 Dec 25
	Sample Size	100g
	Bulk Density 35 Taps (g/ml)	0.51

Reference Material: Butter - Salted Butter

Matrix: Butter	Product ID	993-C-1
	Expiry Date	28 Feb 26
	Sample Size	55g
	Fat by Difference (%)	81.63
	Moisture Oven/Hot Plate (%)	15.48
	Salt (%)	1.83
	SNF (%)	2.87

QC Material: Butter - Salted Butter

Matrix: Butter	Product ID	16366-QC
	Process Run	PR12330
	Expiry Date	28 Feb 26
	Sample Size	55g
	Fat by Difference (%)	81.57
	Moisture Oven/Hot Plate (%)	15.52
	Salt (%)	1.84
	SNF (%)	2.87

QC Material: Butter - Unsalted Butter

Matrix: Butter	Product ID	15526-QC
	Process Run	PR12227
	Expiry Date	25 Dec 25
	Sample Size	55g
	Fat by Difference (%)	83.13
	Moisture Oven/Hot Plate (%)	15.65
	SNF (%)	1.26

QC Material: Butter for pH testing - Lactic Butter

Matrix: Butter for pH testing	Product ID	16368-QC
	Process Run	PR12330
	Expiry Date	28 Feb 26
	Sample Size	110g
	pH (pH units)	4.70

Reference Material: Casein - Lactic Acid Casein (30 Mesh)

Matrix: Casein	Product ID	1003-C-1
	Expiry Date	28 Aug 27
	Sample Size	150g
	Ash (%)	1.77
	Fat SBR (%)	0.7
	Free Acidity (ml/g)	0.21
	Moisture 102°C (%)	11.66
	Protein Kjeldahl (%)	86.74

QC Material: Casein - Lactic Acid Casein (30 Mesh)

Matrix: Casein	Product ID	14654-QC	16371-QC
	Process Run	PR11856	PR12393
	Expiry Date	17 Apr 26	28 Aug 27
	Sample Size	150g	150g
	Ash (%)	1.68	1.77
	Fat SBR (%)	0.8	0.7
	Free Acidity (ml/g)	0.22	0.20
	Lactose (%)	0.06	0.10
	Moisture 102°C (%)		11.68
	Part. Size Pass 1st Sieve (%)	99.9	99.9
	Part. Size Pass 2nd Sieve (%)	46.7	49.6
	pH (pH units)	3.9	4.1
	Protein Kjeldahl (%)	87.53	86.76

QC Material: Casein - Mineral Acid Casein (30 Mesh)

Matrix: Casein	Product ID	16372-QC
	Process Run	PR12393
	Expiry Date	4 Dec 27
	Sample Size	150g
	Ash (%)	1.86
	Fat SBR (%)	0.6
	Free Acidity (ml/g)	0.10
	Lactose (%)	0.16
	Moisture 102°C (%)	8.65
	Part. Size Pass 1st Sieve (%)	99.9
	Part. Size Pass 2nd Sieve (%)	48.6
	pH (pH units)	4.5
	Protein Kjeldahl (%)	89.69

QC Material: Caseinate - Calcium Caseinate

Matrix: Caseinate	Product ID	14656-QC
	Process Run	PR11215
	Expiry Date	2 Apr 26
	Sample Size	80g
	Ash (%)	3.91
	Lactose (%)	0.06
	Moisture 102°C (%)	5.11
	pH 5% Solution (pH units)	7.03
	Protein Kjeldahl (%)	91.69

QC Material: Caseinate - Sodium Caseinate

Matrix: Caseinate	Product ID	16373-QC
	Process Run	PR12393
	Expiry Date	23 Mar 28
	Sample Size	80g
	Ash (%)	3.63
	Fat SBR (%)	0.7
	Lactose (%)	0.04
	Moisture 102°C (%)	4.76
	pH 5% Solution (pH units)	6.73
	Protein Kjeldahl (%)	91.79

Reference Material: Cheese - Cheddar Cheese

Matrix: Cheese	Product ID	992-C-1
	Expiry Date	24 Mar 26
	Sample Size	75g
	Fat SBR (%)	35.07
	Moisture 105°C (%)	36.4
	pH (pH units)	5.20
	Protein (%)	23.46
	Salt (%)	1.71

QC Material: Cheese - Cheddar Cheese

Matrix: Cheese	Product ID	16376-QC
	Process Run	PR12330
	Expiry Date	24 Mar 26
	Sample Size	75g
	Calcium (mmol/kg)	177
	Fat SBR (%)	35.07
	Moisture 105°C (%)	36.3
	pH (pH units)	5.19
	Protein (%)	23.46
	Salt (%)	1.71

Reference Material: Cheese - Edam Cheese

Matrix: Cheese	Product ID	998-C-1
	Expiry Date	9 Jan 26
	Sample Size	75g
	Fat SBR (%)	27.07
	Moisture 105°C (%)	40.5
	pH (pH units)	5.52
	Salt (%)	1.99

QC Material: Cheese - Edam Cheese

Matrix: Cheese	Product ID	15537-QC
	Process Run	PR12330
	Expiry Date	9 Jan 26
	Sample Size	75g
	Calcium (mmol/kg)	185
	Fat SBR (%)	27.01
	Moisture 105°C (%)	40.3
	pH (pH units)	5.53
	Protein (%)	26.98
	Salt (%)	2.00

QC Material: Functional Powders - Instant WMP

Matrix: Functional Powders	Product ID	16384-QC	16385-QC	16383-QC
	Process Run	PR12330	PR12330	PR12330
	Expiry Date	28 Feb 26	28 Feb 26	28 Feb 26
	Sample Size	120g	120g	120g
	Coffee Sediment (mL)	0.2	0.2	0.3
	Cold SDP 25°C (A-E)	C	C	C
	Dispersibility (%)	99	100	100
	Dispersibility (1_7)	1	1	2
	Sediment 85°C (mL)	0.2	0.2	0.2
	Wettability 25°C (secs)	7	6	6

QC Material: Lactose - Edible Lactose

Matrix: Lactose	Product ID	14678-QC	15552-QC
	Process Run	PR11529	PR12393
	Expiry Date	12 Jan 26	1 Feb 27
	Sample Size	80g	80g
	Moist LOD (%)	0.04	0.04
	pH 10% solution (pH units)	4.61	4.42
	Total Moisture KF (%)	5.03	5.13

QC Material: Lactose - Pharmaceutical Lactose

Matrix: Lactose	Product ID	14677-QC	15551-QC
	Process Run	PR11529	PR12393
	Expiry Date	2 May 26	5 Apr 27
	Sample Size	80g	80g
	Moist LOD (%)	0.04	0.06
	pH 10% solution (pH units)	4.47	4.54
	Total Moisture KF (%)	5.14	5.15

Reference Material: Powders for Micronutrients - WPC80 (Cheese)

Matrix: Powders for Micronutrients	Product ID	997-C-1
	Expiry Date	18 Dec 27
	Sample Size	30g
	Calcium (mg/100g)	325
	Chloride (mg/100g)	41
	Copper (mg/kg)	1.67
	Iron (mg/kg)	13.0
	Magnesium (mg/100g)	57.8
	Zinc (mg/kg)	4.7

QC Material: Powders for Micronutrients - WPC80 (Cheese)

Matrix: Powders for Micronutrients	Product ID	15555-QC
	Process Run	PR12330
	Expiry Date	18 Dec 27
	Sample Size	30g
	Calcium (mg/100g)	323
	Chloride (mg/100g)	36
	Copper (mg/kg)	1.66
	Iron (mg/kg)	12.9
	Magnesium (mg/100g)	58.0
	Manganese (µg/100g)	4
	Phosphorus (mg/100g)	528
	Potassium (mg/100g)	293
	Sodium (mg/100g)	1005
	Zinc (mg/kg)	4.8

Reference Material: Powders for Micronutrients - WPC80 (Mineral Acid)

Matrix: Powders for Micronutrients	Product ID	952-C-1
	Expiry Date	6 Apr 27
	Sample Size	30g
	Calcium (mg/100g)	371
	Copper (mg/kg)	0.40
	Iron (mg/kg)	3.9
	Magnesium (mg/100g)	27.1
	Manganese (µg/100g)	15
	Phosphorus (mg/100g)	360
	Sodium (mg/100g)	52
	Zinc (mg/kg)	19.2

QC Material: Powders for Micronutrients - WPC80 (Mineral Acid)

Matrix: Powders for Micronutrients	Product ID	14686-QC
	Process Run	PR11795
	Expiry Date	6 Apr 27
	Sample Size	30g
	Calcium (mg/100g)	382
	Chloride (mg/100g)	149
	Copper (mg/kg)	0.40
	Iron (mg/kg)	3.9
	Magnesium (mg/100g)	27.5
	Manganese (µg/100g)	15
	Phosphorus (mg/100g)	361
	Potassium (mg/100g)	1703
	Sodium (mg/100g)	51
	Zinc (mg/kg)	19.0

Reference Material: Powders for Micronutrients - Skim Milk Powder

Matrix: Powders for Micronutrients	Product ID	893-C-1	954-C-1
	Expiry Date	15 Mar 26	27 Jan 27
	Sample Size	30g	30g
	Calcium (mg/100g)	1084	1089
	Chloride (mg/100g)	761	778
	Copper (mg/kg)	0.19	0.24
	Magnesium (mg/100g)	104.2	102.0
	Manganese (µg/100g)	23	26
	Phosphorus (mg/100g)	808	853
	Potassium (mg/100g)	1190	1338
	Sodium (mg/100g)		283
	Zinc (mg/kg)	34.3	34.3

QC Material: Powders for Micronutrients - Skim Milk Powder

Matrix: Powders for Micronutrients	Product ID	14680-QC	14681-QC
	Process Run	PR11326	PR11795
	Expiry Date	15 Mar 26	27 Jan 27
	Sample Size	30g	30g
	Calcium (mg/100g)	1093	1088
	Chloride (mg/100g)	758	769
	Copper (mg/kg)	0.19	0.24
	Iodine (µg/100gm)	61	
	Iron (mg/kg)	2.0	1.8
	Magnesium (mg/100g)	105.5	103.6
	Manganese (µg/100g)	25	26
	Phosphorus (mg/100g)	803	854
	Potassium (mg/100g)	1202	1336
	Sodium (mg/100g)	297	283
	Zinc (mg/kg)	34.6	34.4

QC Material: Milk Powder - Buttermilk Powder

Matrix: Milk Powder	Product ID	15529-QC
	Process Run	PR11646
	Expiry Date	9 Feb 26
	Sample Size	80g
	Fat RG (%)	8.48
	Insolubility Index 24°C (mL)	0.08
	Moisture 102°C (%)	3.79
	Moisture Reference Dryer (%)	3.82
	Protein Kjeldahl (%)	30.28
	Titrateable Acidity (%)	0.101

Reference Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	951-C-1	996-C-1
	Expiry Date	10 Sep 26	28 Nov 27
	Sample Size	80g	80g
	Fat RG (%)	0.90	0.72
	Moisture 102°C (%)	3.73	
	pH (pH units)	6.75	6.74
	Protein Kjeldahl (%)		32.62
	WPNI (mg/g)		3.1

QC Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	14694-QC	15561-QC
	Process Run	PR11795	PR12330
	Expiry Date	10 Sep 26	28 Nov 27
	Sample Size	80g	80g
	Fat RG (%)	0.90	0.69
	Insolubility Index 24°C (mL)	0.10	0.09
	Moisture 102°C (%)	3.70	3.84
	Moisture Reference Dryer (%)	3.83	3.89
	pH (pH units)	6.76	6.78
	Protein Kjeldahl (%)	32.61	32.59
	Titrateable Acidity (%)	0.094	0.098
	WPNI (mg/g)	6.4	3.1

QC Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	13785-QC
	Process Run	PR12403
	Expiry Date	7 Oct 26
	Sample Size	30g
	RDW WPNI Low Heat SMP (mg/g)	6.57

QC Material: Milk Powder - Whole Milk Powder

Matrix: Milk Powder	Product ID	15566-QC
	Process Run	PR12227
	Expiry Date	7 Sep 26
	Sample Size	80g
	Ash (%)	4.69
	Fat RG (%)	28.16
	Free Fat - in powder (%)	1.32
	Insolubility Index 24°C (mL)	0.18
	Moisture 102°C (%)	3.11
	Moisture KF (%)	3.50
	Moisture Reference Dryer (%)	3.19
	pH (pH units)	6.74
	Protein Kjeldahl (%)	23.43
	Titrateable Acidity (%)	0.087
	WPNI (mg/g SNF)	3.0

Reference Material: Milk Protein Concentrate - MPC42

Matrix: Milk Protein Concentrate	Product ID	991-C-1
	Expiry Date	4 Dec 26
	Sample Size	80g
	Moisture 102°C (%)	3.25
	pH 5% Solution (pH units)	7.05
	Protein Kjeldahl (%)	43.12

QC Material: Milk Protein Concentrate - MPC42

Matrix: Milk Protein Concentrate	Product ID	16392-QC
	Process Run	PR12330
	Expiry Date	4 Dec 26
	Sample Size	80g
	Ash (%)	5.53
	Fat RG (%)	25.65
	Insolubility Index 40°C (mL)	0.10
	Moisture 102°C (%)	3.25
	pH 5% Solution (pH units)	7.05
	Protein Kjeldahl (%)	43.11
	Tit Acidity 5% Solution (%m/m)	0.815
	WPNI (mg/g)	6.7

Reference Material: Milk Protein Concentrate - MPC80

Matrix: Milk Protein Concentrate	Product ID	984-C-1
	Expiry Date	29 Mar 26
	Sample Size	80g
	Ash (%)	6.88
	Fat SBR (%)	1.18
	Moisture 102°C (%)	5.73
	pH 5% Solution (pH units)	7.00
	Protein Kjeldahl (%)	77.97

QC Material: Milk Protein Concentrate - MPC80

Matrix: Milk Protein Concentrate	Product ID	16394-QC
	Process Run	PR12029
	Expiry Date	29 Mar 26
	Sample Size	80g
	Ash (%)	6.86
	Fat SBR (%)	1.15
	Lactose (%)	8.08
	Moisture 102°C (%)	5.69
	pH 5% Solution (pH units)	7.00
	Protein Kjeldahl (%)	77.64

Reference Material: Milk Protein Concentrate - MPI

Matrix: Milk Protein Concentrate	Product ID	973-C-1
	Expiry Date	13 Jan 26
	Sample Size	80g
	Ash (%)	6.31
	Fat SBR (%)	1.86
	Moisture 102°C (%)	5.90
	pH 5% Solution (pH units)	6.96
	Protein Kjeldahl (%)	85.50

QC Material: Milk Protein Concentrate - MPI

Matrix: Milk Protein Concentrate	Product ID	15559-QC
	Process Run	PR12127
	Expiry Date	13 Jan 26
	Sample Size	80g
	Ash (%)	6.31
	Fat SBR (%)	1.85
	Moisture 102°C (%)	5.87
	pH 5% Solution (pH units)	6.93
	Protein Kjeldahl (%)	85.42
	WPNI (mg/g)	16.7

QC Material: Milk Powder Nitrate / Nitrite - Instant SMP

Matrix: Milk Powder Nitrate / Nitrite	Product ID	16132-QC
	Process Run	PR12127
	Expiry Date	7 Oct 26
	Sample Size	15g
	Nitrate (mg/kg)	12.7
	Nitrite (mg/kg)	2.4

QC Material: Protein Powders Nitrate / Nitrite - MPC42

Matrix: Protein Powders Nitrate /	Product ID	15726-QC
	Process Run	PR11529
	Expiry Date	24 Jan 26
	Sample Size	15g
	Nitrate (mg/kg)	13.0
	Nitrite (mg/kg)	1.9

QC Material: Protein Powders Nitrate / Nitrite - WPC80 (Mineral Acid)

Matrix: Protein Powders Nitrate /	Product ID	13728-QC
	Process Run	PR11529
	Expiry Date	24 Jan 26
	Sample Size	15g
	Nitrate (mg/kg)	22.1
	Nitrite (mg/kg)	4.2

QC Material: Vitamin Milk Powders - Instant WMP

Matrix: Vitamin Milk Powders	Product ID	15562-QC
	Process Run	PR12330
	Expiry Date	28 Aug 26
	Sample Size	30g
	Vitamin A (µg/100gm)	773
	Vitamin C (mg/100g)	66.5

QC Material: Vitamin Milk Powders - Whole Milk Powder

Matrix: Vitamin Milk Powders	Product ID	14696-QC	16397-QC
	Process Run	PR12330	PR12029
	Expiry Date	28 Aug 26	27 Feb 26
	Sample Size	30g	30g
	Vitamin A (µg/100gm)	330	428
	Vitamin C (mg/100g)	55.5	69.4
	Vitamin D (µg/100gm)		7.1

Reference Material: Whey Powder - Whey Powder

Matrix: Whey Powder	Product ID	1004-C-1
	Expiry Date	27 May 27
	Sample Size	80g
	Ash (%)	9.31
	Fat RG (%)	0.91
	Moisture 102°C (%)	1.76
	pH (pH units)	6.79
	Protein Kjeldahl (%)	17.12

QC Material: Whey Powder - Whey Powder

Matrix: Whey Powder	Product ID	15563-QC
	Process Run	PR12393
	Expiry Date	27 May 27
	Sample Size	80g
	Ash (%)	9.31
	Fat RG (%)	0.93
	Insolubility Index 24°C (mL)	0.10
	Moisture 102°C (%)	1.74
	pH (pH units)	6.77
	Protein Kjeldahl (%)	17.09
	Salt (%)	2.98
	Titrateable Acidity (%)	0.065

Reference Material: Whey Protein Concentrate - WPC80 (Cheese)

Matrix: Whey Protein Concentrate	Product ID	980-C-1
	Expiry Date	8 Apr 26
	Sample Size	80g
	Fat SBR (%)	5.1
	Moisture 102°C (%)	4.44
	Protein Kjeldahl (%)	80.10

QC Material: Whey Protein Concentrate - WPC80 (Cheese)

Matrix: Whey Protein Concentrate	Product ID	15569-QC
	Process Run	PR12198
	Expiry Date	8 Apr 26
	Sample Size	80g
	Ash (%)	2.93
	Fat SBR (%)	5.0
	Insolubility Index 24°C (mL)	0.14
	Moisture 102°C (%)	4.48
	pH 5% Solution (pH units)	6.70
	Protein Kjeldahl (%)	80.00

QC Material: Whey Protein Concentrate - WPC80 (Lactic Acid)

Matrix: Whey Protein Concentrate	Product ID	16403-QC
	Process Run	PR12393
	Expiry Date	12 Mar 27
	Sample Size	80g
	Ash (%)	3.75
	Fat SBR (%)	4.2
	Insolubility Index 24°C (mL)	0.09
	Lactose (%)	4.88
	Moisture 102°C (%)	4.80
	pH 5% Solution (pH units)	6.81
	Protein Kjeldahl (%)	78.82

QC Material: Whey Protein Concentrate - WPC80 (Mineral Acid)

Matrix: Whey Protein Concentrate	Product ID	15568-QC
	Process Run	PR11856
	Expiry Date	24 Dec 25
	Sample Size	80g
	Ash (%)	4.67
	Fat SBR (%)	5.4
	Insolubility Index 24°C (mL)	0.08
	Lactose (%)	4.93
	Moisture 102°C (%)	5.85
	pH 5% Solution (pH units)	6.73
	Protein Kjeldahl (%)	77.08

QC Material: Whey Protein Concentrate - Whey Protein Isolate

Matrix: Whey Protein Concentrate	Product ID	16150-QC
	Process Run	PR12198
	Expiry Date	20 Jan 26
	Sample Size	80g
	Ash (%)	1.63
	Fat SBR (%)	0.2
	Insolubility Index 24°C (mL)	0.09
	Moisture 102°C (%)	4.78
	pH 5% Solution (pH units)	6.81
	Protein Kjeldahl (%)	93.88