

Reference Material and Inter-laboratory Quality Control Materials Product Summary

March 2022

Version: 2

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.

Note: When ordering QC materials, please quote both the Product ID AND the process run

Reference Material: Anhydrous Milk Fat - Anhydrous Milk Fat

Matrix: Anhydrous Milk Fat	Product ID	657-C-1	658-C-1	673-C-1	692-C-1	672-C-1	690-C-1	691-C-1
	Expiry Date	1 Jun 22	1 Jun 22	1 Jun 22	1 Aug 22	31 Aug 22	1 Oct 22	1 Oct 22
	Sample Size	100mL	100mL	100mL	100mL	100mL	100mL	100mL
	Alkalinity (mg/kg)	6	5	5	6		4	5
	Carotene (mg/kg)							
	Free Fatty Acids (%)		0.17	0.16	0.16	0.16	0.17	0.17
	Moisture KF (%)		0.05	0.05				0.05
	Peroxide Value (meqO2 /kg)			0.03	0.03	0.03	0.03	0.03

QC Material: Anhydrous Milk Fat - Anhydrous Milk Fat

Matrix: Anhydrous Milk Fat	Product ID	12673-QC	12674-QC	12675-QC	12678-QC	12676-QC	12679-QC	12680-QC
	Process Run	PR9462	PR9462	PR9571	PR9712	PR9571	PR9712	PR9712
	Expiry Date	1 Jun 22	1 Jun 22	1 Jun 22	1 Aug 22	31 Aug 22	1 Oct 22	1 Oct 22
	Sample Size	100mL	100mL	100mL	100mL	100mL	100mL	100mL
	Alkalinity (mg/kg)	5	6	5	6	7	6	5
	Carotene (mg/kg)	8.6	8.7	8.8	9.5	9.6	9.7	9.6
	Free Fatty Acids (%)	0.17	0.18	0.17	0.16	0.16	0.17	0.17
	Moisture KF (%)	0.05	0.05	0.04	0.04	0.04	0.05	0.04
	Peroxide Value (meqO2 /kg)	0.04	0.03	0.02	0.03	0.03	0.03	0.03

QC Material: Milk Powders for Bulk Density - Buttermilk Powder (100 taps)

Matrix: Milk Powders for Bulk Density	Product ID	11630-QC	11631-QC	12984-QC
	Process Run	PR9938	PR9712	PR9869
	Expiry Date	23 Aug 22	28 Apr 22	14 Jun 22
	Sample Size	160g	160g	160g
	Bulk Density 100 Taps (g/ml)	0.70	0.65	0.69

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

Matrix: Milk Powders for Bulk Density	Product ID	12697-QC
	Process Run	PR9938
	Expiry Date	23 Aug 22
	Sample Size	120g
	Bulk Density 100 Taps (g/ml)	0.49

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

Matrix: Milk Powders for Bulk Density	Product ID	12698-QC	11635-QC
	Process Run	PR9869	PR9712
	Expiry Date	14 Jun 22	28 Apr 22
	Sample Size	120g	120g
	Bulk Density 100 Taps (g/ml)	0.50	0.52

QC Material: Milk Powders for Bulk Density - Whole Milk Powder (100 taps)

Matrix: Milk Powders for Bulk Density	Product ID	11634-QC	12699-QC
	Process Run	PR9938	PR9712
	Expiry Date	23 Aug 22	28 Apr 22
	Sample Size	120g	120g
	Bulk Density 100 Taps (g/ml)	0.55	0.61

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

Matrix: Protein Powders for Bulk	Product ID	12221-QC	12706-QC
	Process Run	PR9909	PR9669
	Expiry Date	2 Aug 22	28 Mar 22
	Sample Size	85g	85g
	Bulk Density 35 Taps (g/ml)	0.35	0.36

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

Matrix: Protein Powders for Bulk	Product ID	12705-QC
	Process Run	PR9909
	Expiry Date	2 Aug 22
	Sample Size	110g
	Bulk Density 35 Taps (g/ml)	0.46

QC Material: Protein Powders for Bulk Density - MPC42 (100 taps)

Matrix: Protein Powders for Bulk	Product ID	12704-QC
	Process Run	PR9669
	Expiry Date	28 Mar 22
	Sample Size	120g
	Bulk Density 100 Taps (g/ml)	0.59

QC Material: Protein Powders for Bulk Density - MPC70 (100 taps)

Matrix: Protein Powders for Bulk	Product ID	12707-QC
	Process Run	PR9909
	Expiry Date	2 Aug 22
	Sample Size	100g
	Bulk Density 100 Taps (g/ml)	0.56

QC Material: Protein Powders for Bulk Density - WPC80 (Cheese) 35 taps

Matrix: Protein Powders for Bulk	Product ID	12708-QC
	Process Run	PR9784
	Expiry Date	10 May 22
	Sample Size	100g
	Bulk Density 35 Taps (g/ml)	0.43

QC Material: Protein Powders for Bulk Density - WPC80 (Mineral Acid) 35 taps

Matrix: Protein Powders for Bulk	Product ID	12703-QC
	Process Run	PR9909
	Expiry Date	2 Aug 22
	Sample Size	100g
	Bulk Density 35 Taps (g /ml)	0.52

Reference Material: Butter - Salted Butter

Matrix: Butter	Product ID	608-C-2
	Expiry Date	23 Aug 22
	Sample Size	55g
	Fat by Difference (%)	81.79
	Moisture Oven/Hot Plate (%)	15.54
	Salt (%)	1.71
	SNF (%)	2.67

QC Material: Butter - Salted Butter

Matrix: Butter	Product ID	12182-QC
	Process Run	PR9938
	Expiry Date	23 Aug 22
	Sample Size	55g
	Fat by Difference (%)	81.80
	Moisture Oven/Hot Plate (%)	15.62
	Salt (%)	1.71
	SNF (%)	2.66

QC Material: Butter for pH testing - Lactic Butter

Matrix: Butter for pH testing	Product ID	12693-QC	12694-QC	13033-QC
	Process Run	PR9938	PR9938	PR9938
	Expiry Date	23 Aug 22	23 Aug 22	23 Aug 22
	Sample Size	110g	110g	110g
	pH (pH units)	4.72	4.75	4.67

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

Matrix: Casein	Product ID	546-C-2	687-C-1
	Expiry Date	25 Jun 22	7 Mar 23
	Sample Size	150g	150g
	Ash (%)	1.72	1.74
	Fat SBR (%)		0.8
	Free Acidity (ml/g)	0.08	0.16
	Lactose (%)	0.07	0.11
	Moisture 102°C (%)	11.60	11.40
	pH (pH units)	4.5	4.3
	Protein Kjeldahl (%)	86.66	

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

Matrix: Casein	Product ID	10534-QC	11639-QC
	Process Run	PR8504	PR9669
	Expiry Date	25 Jun 22	7 Mar 23
	Sample Size	150g	150g
	Ash (%)	1.74	1.80
	Fat SBR (%)	1.0	0.7
	Free Acidity (ml/g)	0.09	0.17
	Lactose (%)	0.08	0.11
	Moisture 102°C (%)	11.60	11.42
	Part. Size Pass 1st Sieve (%)	100.0	100.0
	Part. Size Pass 2nd Sieve (%)	55.7	51.5
	pH (pH units)	4.6	4.3
	Protein Kjeldahl (%)	86.73	86.76

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

Matrix: Casein	Product ID	547-C-2	686-C-1
	Expiry Date	9 Apr 22	29 Dec 22
	Sample Size	150g	150g
	Ash (%)	1.64	1.74
	Fat SBR (%)	0.5	0.8
	Free Acidity (ml/g)	0.09	
	pH (pH units)	4.1	4.2
	Protein Kjeldahl (%)	89.62	88.84

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

Matrix: Casein	Product ID	10535-QC	11640-QC
	Process Run	PR8504	PR9669
	Expiry Date	9 Apr 22	29 Dec 22
	Sample Size	150g	150g
	Ash (%)	1.64	1.78
	Fat SBR (%)	0.6	0.8
	Free Acidity (ml/g)	0.09	0.08
	Lactose (%)	0.02	0.02
	Moisture 102°C (%)	9.20	9.83
	Part. Size Pass 1st Sieve (%)	100.0	99.4
	Part. Size Pass 2nd Sieve (%)	44.0	38.8
	pH (pH units)	4.2	4.3
	Protein Kjeldahl (%)	89.57	88.84

Reference Material: Caseinate - Calcium Caseinate

Matrix: Caseinate	Product ID	685-C-1
	Expiry Date	8 Apr 23
	Sample Size	80g
	Ash (%)	3.80
	Moisture 102°C (%)	5.19
	pH 5% Solution (pH units)	7.06
	Protein Kjeldahl (%)	91.63

QC Material: Caseinate - Calcium Caseinate

Matrix: Caseinate	Product ID	11641-QC
	Process Run	PR9669
	Expiry Date	8 Apr 23
	Sample Size	80g
	Ash (%)	3.86
	Fat SBR (%)	0.5
	Lactose (%)	0.06
	Moisture 102°C (%)	5.28
	pH 5% Solution (pH units)	7.05
	Protein Kjeldahl (%)	91.81

Reference Material: Caseinate - Sodium Caseinate

Matrix: Caseinate	Product ID	579-C-1	684-C-1
	Expiry Date	17 May 22	9 May 23
	Sample Size	80g	80g
	Ash (%)	3.91	3.60
	Fat SBR (%)	0.6	0.7
	Moisture 102°C (%)		4.82
	pH 5% Solution (pH units)	7.00	6.73
	Protein Kjeldahl (%)	92.00	92.11

QC Material: Caseinate - Sodium Caseinate

Matrix: Caseinate	Product ID	10539-QC	11642-QC
	Process Run	PR8819	PR9669
	Expiry Date	17 May 22	9 May 23
	Sample Size	80g	80g
	Ash (%)	3.88	3.63
	Fat SBR (%)	0.5	0.7
	Lactose (%)	0.04	0.03
	Moisture 102°C (%)	4.80	4.91
	pH 5% Solution (pH units)	7.04	6.72
	Protein Kjeldahl (%)	92.15	92.25

Reference Material: Cheese - Cheddar Cheese

Matrix: Cheese	Product ID	661-C-1	712-C-1
	Expiry Date	1 Apr 22	1 May 23
	Sample Size	75g	75g
	Fat SBR (%)	35.06	34.99
	Moisture 105°C (%)		36.2
	pH (pH units)	5.24	
	Protein (%)	24.09	23.82
	Salt (%)	1.84	1.82

QC Material: Cheese - Cheddar Cheese

Matrix: Cheese	Product ID	12421-QC	12423-QC
	Process Run	PR9462	PR9869
	Expiry Date	1 Apr 22	1 May 23
	Sample Size	75g	75g
	Calcium (mmol/kg)	182	173
	Fat SBR (%)	35.08	34.93
	Moisture 105°C (%)	35.6	36.1
	pH (pH units)	5.26	5.18
	Protein (%)	24.11	23.83
	Salt (%)	1.83	1.82

Reference Material: Cheese - Edam Cheese

Matrix: Cheese	Product ID	693-C-1	724-C-1
	Expiry Date	31 Aug 22	29 Dec 22
	Sample Size	75g	75g
	Calcium (mmol/kg)	200	
	Fat SBR (%)	25.89	
	Moisture 105°C (%)	41.5	41.8
	pH (pH units)	5.23	5.36
	Protein (%)	27.29	27.21
	Salt (%)	1.79	1.98

QC Material: Cheese - Edam Cheese

Matrix: Cheese	Product ID	12428-QC	12430-QC
	Process Run	PR9712	PR9938
	Expiry Date	31 Aug 22	29 Dec 22
	Sample Size	75g	75g
	Calcium (mmol/kg)	203	210
	Fat SBR (%)	25.92	25.36
	Moisture 105°C (%)	41.1	41.7
	pH (pH units)	5.23	5.36
	Protein (%)	27.25	27.18
	Salt (%)	1.79	1.98

Reference Material: Cheese - Gouda Cheese

Matrix: Cheese	Product ID	694-C-1
	Expiry Date	31 Aug 22
	Sample Size	75g
	Fat SBR (%)	29.28
	Moisture 105°C (%)	40.7
	pH (pH units)	5.27
	Protein (%)	24.90
	Salt (%)	1.69

QC Material: Cheese - Gouda Cheese

Matrix: Cheese	Product ID	12427-QC
	Process Run	PR9712
	Expiry Date	31 Aug 22
	Sample Size	75g
	Calcium (mmol/kg)	202
	Fat SBR (%)	29.26
	Moisture 105°C (%)	40.4
	pH (pH units)	5.28
	Protein (%)	24.86
	Salt (%)	1.70

Reference Material: Cheese - Mozzarella Cheese

Matrix: Cheese	Product ID	695-C-1
	Expiry Date	31 Aug 22
	Sample Size	75g
	Calcium (mmol/kg)	151
	Fat SBR (%)	21.87
	Moisture 105°C (%)	49.2
	Protein (%)	24.81
	Salt (%)	1.34

QC Material: Cheese - Mozzarella Cheese

Matrix: Cheese	Product ID	12426-QC
	Process Run	PR9712
	Expiry Date	31 Aug 22
	Sample Size	75g
	Calcium (mmol/kg)	152
	Fat SBR (%)	21.91
	Moisture 105°C (%)	49.0
	pH (pH units)	5.65
	Protein (%)	24.79
	Salt (%)	1.34

QC Material: Functional Powders - Instant WMP

Matrix: Functional Powders	Product ID	12670-QC	12748-QC	12749-QC	12747-QC
	Process Run	PR9712	PR9938	PR9938	PR9938
	Expiry Date	28 Apr 22	23 Aug 22	23 Aug 22	23 Aug 22
	Sample Size	120g	120g	120g	120g
	Coffee Sediment (mL)	0.2	0.2	0.2	0.4
	Cold SDP 25°C (A-E)	C	C	C	C
	Dispersibility (1_7)	1	1	1	2
	Sediment 85°C (mL)	0.2	0.2	0.2	0.2
	Wettability 25°C (secs)	12	6	6	8

QC Material: Lactose - Edible Lactose

Matrix: Lactose	Product ID	11646-QC
	Process Run	PR9669
	Expiry Date	1 Nov 23
	Sample Size	80g
	Moist LOD (%)	0.06
	pH 10% solution (pH units)	4.21
	Total Moisture KF (%)	5.07

QC Material: Lactose - Pharmaceutical Lactose

Matrix: Lactose	Product ID	11644-QC	11645-QC
	Process Run	PR9174	PR9669
	Expiry Date	26 Dec 22	10 Jan 24
	Sample Size	80g	80g
	Moist LOD (%)	0.02	0.08
	pH 10% solution (pH units)	4.30	4.15
	Sulphated Ash (%)	0.02	
	Total Moisture KF (%)	5.02	5.06

Reference Material: Powders for Micronutrients - WPC80 (Cheese)

Matrix: Powders for Micronutrients	Product ID	573-C-1
	Expiry Date	6 Jan 23
	Sample Size	30g
	Calcium (mg/100g)	284
	Chloride (mg/100g)	47
	Copper (mg/kg)	1.67
	Iron (mg/kg)	12.9
	Phosphorus (mg/100g)	510
	Sodium (mg/100g)	1136

QC Material: Powders for Micronutrients - WPC80 (Cheese)

Matrix: Powders for Micronutrients	Product ID	10615-QC
	Process Run	PR8713
	Expiry Date	6 Jan 23
	Sample Size	30g
	Calcium (mg/100g)	283
	Chloride (mg/100g)	49
	Copper (mg/kg)	1.70
	Iron (mg/kg)	12.6
	Magnesium (mg/100g)	47.2
	Phosphorus (mg/100g)	520
	Potassium (mg/100g)	305
	Sodium (mg/100g)	1145
	Zinc (mg/kg)	2.9

Reference Material: Powders for Micronutrients - Instant WMP

Matrix: Powders for Micronutrients	Product ID	615-C-1	675-C-1	721-C-1
	Expiry Date	12 May 23	7 Oct 23	9 Apr 24
	Sample Size	30g	30g	30g
	Calcium (mg/100g)	790	839	895
	Chloride (mg/100g)	556	554	881
	Copper (mg/kg)	0.16	0.36	0.14
	Iron (mg/kg)	101.3		109.7
	Magnesium (mg/100g)		72.4	
	Manganese (µg/100g)	28	26	26
	Phosphorus (mg/100g)		705	
	Potassium (mg/100g)		1029	1256
	Sodium (mg/100g)			346
	Zinc (mg/kg)	47.4	50.9	

QC Material: Powders for Micronutrients - Instant WMP

Matrix: Powders for Micronutrients	Product ID	11692-QC	11693-QC	12710-QC
	Process Run	PR9086	PR9571	PR9938
	Expiry Date	12 May 23	7 Oct 23	9 Apr 24
	Sample Size	30g	30g	30g
	Calcium (mg/100g)	788	837	909
	Chloride (mg/100g)	561	552	880
	Copper (mg/kg)	0.16	0.38	0.14
	Iron (mg/kg)	100.8	111.4	109.2
	Magnesium (mg/100g)	72.9	73.1	104.4
	Manganese (µg/100g)	28		26
	Phosphorus (mg/100g)	582	703	725
	Potassium (mg/100g)	737	1038	1251
	Sodium (mg/100g)	232	212	347
	Zinc (mg/kg)	46.7	51.6	48.8

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

Matrix: Powders for Micronutrients	Product ID	616-C-2	677-C-1	719-C-1
	Expiry Date	16 Apr 23	17 Dec 23	20 Mar 24
	Sample Size	30g	30g	30g
	Calcium (mg/100g)	350		373
	Chloride (mg/100g)	150	127	
	Copper (mg/kg)		0.46	0.38
	Iron (mg/kg)	4.5	3.2	4.2
	Magnesium (mg/100g)	26.3	24.6	27.8
	Manganese (µg/100g)	15		14
	Phosphorus (mg/100g)	364	353	
	Potassium (mg/100g)	1770	1713	1813
	Sodium (mg/100g)		43	81
	Zinc (mg/kg)		16.7	19.5

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

Matrix: Powders for Micronutrients	Product ID	11688-QC	11689-QC	12751-QC
	Process Run	PR9086	PR9571	PR9938
	Expiry Date	16 Apr 23	17 Dec 23	20 Mar 24
	Sample Size	30g	30g	30g
	Calcium (mg/100g)	351	385	373
	Chloride (mg/100g)	148	127	149
	Copper (mg/kg)	0.38	0.46	0.37
	Iodine (µg/100gm)			166
	Iron (mg/kg)	4.3	3.3	4.2
	Magnesium (mg/100g)	26.1	25.0	27.7
	Manganese (µg/100g)	15	12	14
	Phosphorus (mg/100g)	360		372
	Potassium (mg/100g)	1789		1800
	Sodium (mg/100g)	50	44	82
	Zinc (mg/kg)	17.4	16.4	19.5

Reference Material: Powders for Micronutrients - Skim Milk Powder

Matrix: Powders for Micronutrients	Product ID	571-C-1	617-C-1	676-C-1	722-C-1
	Expiry Date	13 Sep 22	9 Jan 23	30 Jan 23	16 Feb 24
	Sample Size	30g	30g	30g	30g
		Calcium (mg/100g)	1325		1352
	Chloride (mg/100g)	977	1080		1190
	Copper (mg/kg)	0.50	0.26	0.33	
	Iron (mg/kg)	2.0	1.8	2.0	2.3
	Magnesium (mg/100g)	114.8		120.2	126.0
	Manganese (µg/100g)	29	29	35	41
	Phosphorus (mg/100g)	1053		1000	1034
	Potassium (mg/100g)	1632		1602	1530
	Sodium (mg/100g)	360		405	448
	Zinc (mg/kg)	42.1	34.4	42.9	43.1

QC Material: Powders for Micronutrients - Skim Milk Powder

Matrix: Powders for Micronutrients	Product ID	10611-QC	11690-QC	11691-QC	12709-QC
	Process Run	PR8713	PR9086	PR9571	PR9938
	Expiry Date	13 Sep 22	9 Jan 23	30 Jan 23	16 Feb 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)	1320	1175	1331	1385
	Chloride (mg/100g)	970	1098	1165	1191
	Copper (mg/kg)	0.49	0.27	0.35	0.30
	Iron (mg/kg)	2.0	1.8	2.0	2.2
	Magnesium (mg/100g)	111.8	119.7	120.2	125.9
	Manganese (µg/100g)	29	29	35	42
	Phosphorus (mg/100g)	1060	972		1040
	Potassium (mg/100g)	1637	1807		1530
	Sodium (mg/100g)	358	372		452
	Zinc (mg/kg)	42.3	34.8	42.1	43.6

Reference Material: Milk Powder - Buttermilk Powder

Matrix: Milk Powder	Product ID	679-C-1	699-C-1
	Expiry Date	2 May 22	26 Apr 23
	Sample Size	80g	80g
	Fat RG (%)	7.82	8.70
	Moisture 102°C (%)	4.01	3.48
	Moisture Reference Dryer (%)	4.11	3.51
	Protein Kjeldahl (%)	30.13	30.85

QC Material: Milk Powder - Buttermilk Powder

Matrix: Milk Powder	Product ID	11629-QC	12695-QC
	Process Run	PR9571	PR9712
	Expiry Date	2 May 22	26 Apr 23
	Sample Size	80g	80g
	Fat RG (%)	7.80	8.63
	Insolubility Index 24°C (mL)	0.10	0.10
	Moisture 102°C (%)	4.09	3.44
	Moisture Reference Dryer (%)	4.11	3.50
	Protein Kjeldahl (%)	30.11	30.89
	Titrateable Acidity (%)	0.102	0.094

Reference Material: Milk Powder - Instant SMP

Matrix: Milk Powder	Product ID	664-C-2
	Expiry Date	5 Apr 23
	Sample Size	80g
	pH (pH units)	6.77
	Protein Kjeldahl (%)	32.83
	WPNI (mg/g)	2.6

QC Material: Milk Powder - Instant SMP

Matrix: Milk Powder	Product ID	11647-QC	12722-QC
	Process Run	PR9462	PR9938
	Expiry Date	5 Apr 23	26 Aug 24
	Sample Size	80g	80g
	Fat RG (%)	0.96	0.63
	Insolubility Index 24°C (mL)	0.15	0.10
	Moisture 102°C (%)	3.60	3.76
	Moisture Reference Dryer (%)	3.65	3.88
	pH (pH units)	6.77	6.74
	Protein Kjeldahl (%)	32.97	32.87
	Titrateable Acidity (%)	0.085	0.098
	WPNI (mg/g)	2.6	3.7

Reference Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	698-C-1	697-C-1
	Expiry Date	30 Jan 23	24 Mar 24
	Sample Size	80g	80g
	Fat RG (%)	0.58	
	Moisture 102°C (%)	3.85	3.91
	Moisture Reference Dryer (%)		3.93
	pH (pH units)	6.72	6.81
	Protein Kjeldahl (%)	39.60	32.77
	WPNI (mg/g)	4.0	3.5

QC Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	12720-QC	12721-QC
	Process Run	PR9712	PR9712
	Expiry Date	30 Jan 23	24 Mar 24
	Sample Size	80g	80g
	Fat RG (%)	0.61	0.59
	Insolubility Index 24°C (mL)	0.10	0.10
	Moisture 102°C (%)	3.77	3.88
	Moisture Reference Dryer (%)	3.85	3.92
	pH (pH units)	6.72	6.81
	Protein Kjeldahl (%)	39.65	32.81
	Titrateable Acidity (%)	0.110	0.076
	WPNI (mg/g)	4.0	3.5

QC Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	9485-QC
	Process Run	PR9741
	Expiry Date	28 Oct 22
	Sample Size	30g
	RDW WPNI Low Heat SMP (mg/g)	6.78

Reference Material: Milk Powder - Whole Milk Powder

Matrix: Milk Powder	Product ID	678-C-1	696-C-1	669-C-1
	Expiry Date	11 Jan 23	11 Jan 23	5 Feb 23
	Sample Size	80g	80g	80g
	Ash (%)	5.13	5.62	4.88
	Fat RG (%)	28.11	28.39	26.82
	Free Fat - in powder (%)		1.35	
	Moisture 102°C (%)	2.99	3.08	2.73
	Moisture KF (%)	3.36	3.47	3.09
	Moisture Reference Dryer (%)		3.20	
	pH (pH units)	6.70	6.70	6.74
	Protein Kjeldahl (%)	23.34	23.74	24.89
	WPNI (mg/g SNF)	1.2		

QC Material: Milk Powder - Whole Milk Powder

Matrix: Milk Powder	Product ID	11668-QC	12728-QC	11669-QC
	Process Run	PR9571	PR9712	PR9571
	Expiry Date	11 Jan 23	11 Jan 23	5 Feb 23
	Sample Size	80g	80g	80g
	Ash (%)	5.14	5.60	4.88
	Fat RG (%)	28.09	28.39	26.75
	Free Fat - in powder (%)	1.27	1.35	0.49
	Insolubility Index 24°C (mL)	0.25	0.30	0.10
	Moisture 102°C (%)	2.98	3.08	2.73
	Moisture KF (%)		3.45	
	Moisture Reference Dryer (%)	3.12	3.18	2.84
	pH (pH units)	6.70	6.70	6.72
	Protein Combustion (%)		23.88	
	Protein Kjeldahl (%)	23.35	23.76	24.90
	Titrateable Acidity (%)	0.097	0.100	0.090
	WPNI (mg/g SNF)	1.2	2.0	3.7

Reference Material: Milk Protein Concentrate - MPC42

Matrix: Milk Protein Concentrate	Product ID	633-C-1
	Expiry Date	14 Apr 22
	Sample Size	80g
	Ash (%)	5.46
	Fat RG (%)	26.09
	Moisture 102°C (%)	3.27
	pH 5% Solution (pH units)	6.98
	Protein Kjeldahl (%)	44.30
	WPNI (mg/g)	6.8

QC Material: Milk Protein Concentrate - MPC42

Matrix: Milk Protein Concentrate	Product ID	11681-QC
	Process Run	PR9248
	Expiry Date	14 Apr 22
	Sample Size	80g
	Ash (%)	5.49
	Fat RG (%)	25.95
	Insolubility Index 40°C (mL)	0.10
	Moisture 102°C (%)	3.20
	pH 5% Solution (pH units)	6.99
	Protein Kjeldahl (%)	44.31
	Tit Acidity 5% Solution (%m/m)	0.778
	WPNI (mg/g)	6.3

Reference Material: Milk Protein Concentrate - MPC56

Matrix: Milk Protein Concentrate	Product ID	670-C-1
	Expiry Date	14 Nov 22
	Sample Size	80g
	Ash (%)	7.44
	Fat RG (%)	0.84
	Moisture 102°C (%)	4.88
	pH 5% Solution (pH units)	6.97
	Protein Kjeldahl (%)	56.20

QC Material: Milk Protein Concentrate - MPC56

Matrix: Milk Protein Concentrate	Product ID	12713-QC
	Process Run	PR9571
	Expiry Date	14 Nov 22
	Sample Size	80g
	Ash (%)	7.43
	Fat RG (%)	0.84
	Insolubility Index 40°C (mL)	0.10
	Moisture 102°C (%)	4.91
	pH 5% Solution (pH units)	6.96
	Protein Kjeldahl (%)	56.12
	Tit Acidity 5% Solution (%m/m)	1.066
	WPNI (mg/g)	9.8

Reference Material: Milk Protein Concentrate - MPC80

Matrix: Milk Protein Concentrate	Product ID	635-C-1
	Expiry Date	13 May 22
	Sample Size	80g
	Ash (%)	6.95
	Lactose (%)	7.53
	Moisture 102°C (%)	5.89
	Protein Kjeldahl (%)	77.78

QC Material: Milk Protein Concentrate - MPC80

Matrix: Milk Protein Concentrate	Product ID	11682-QC
	Process Run	PR9248
	Expiry Date	13 May 22
	Sample Size	80g
	Ash (%)	6.97
	Fat SBR (%)	1.28
	Lactose (%)	7.39
Moisture 102°C (%)	6.00	
pH 5% Solution (pH units)	7.00	
Protein Kjeldahl (%)	77.75	
WPNI (mg/g)	1.0	

Reference Material: Milk Protein Concentrate - MPC85

Matrix: Milk Protein Concentrate	Product ID	700-C-1
	Expiry Date	17 Jan 23
	Sample Size	80g
	Fat SBR (%)	1.41
Lactose (%)	3.33	
pH 5% Solution (pH units)	7.12	
Protein Kjeldahl (%)	83.00	

QC Material: Milk Protein Concentrate - MPC85

Matrix: Milk Protein Concentrate	Product ID	12716-QC
	Process Run	PR9712
	Expiry Date	17 Jan 23
	Sample Size	80g
	Ash (%)	6.74
	Fat SBR (%)	1.41
	Lactose (%)	3.23
Moisture 102°C (%)	5.70	
pH 5% Solution (pH units)	7.11	
Protein Kjeldahl (%)	83.03	
WPNI (mg/g)	14.8	

Reference Material: Milk Protein Concentrate - MPI

Matrix: Milk Protein Concentrate	Product ID	701-C-1
	Expiry Date	25 Apr 22
	Sample Size	80g
	Ash (%)	6.47
	Fat SBR (%)	1.41
	Lactose (%)	1.22
	pH 5% Solution (pH units)	6.91
	Protein Kjeldahl (%)	85.32

QC Material: Milk Protein Concentrate - MPI

Matrix: Milk Protein Concentrate	Product ID	11685-QC
	Process Run	PR9712
	Expiry Date	25 Apr 22
	Sample Size	80g
	Ash (%)	6.50
	Fat SBR (%)	1.40
	Lactose (%)	1.18
	Moisture 102°C (%)	5.72
	pH 5% Solution (pH units)	6.91
	Protein Kjeldahl (%)	85.49
	WPNI (mg/g)	16.9

Reference Material: Milk Powder Nitrate / Nitrite - Whole Milk Powder

Matrix: Milk Powder Nitrate / Nitrite	Product ID	706-C-1	707-C-1
	Expiry Date	20 Oct 22	20 Oct 22
	Sample Size	30g	30g
	Nitrate (mg/kg)	1.5	7.3
	Nitrite (mg/kg)	1.3	

Reference Material: Protein Powders Nitrate / Nitrite - Calcium Caseinate

Matrix: Protein Powders Nitrate /	Product ID	708-C-1	580-C-2	705-C-1
	Expiry Date	28 Sep 22	10 Oct 22	20 Oct 22
	Sample Size	30g	30g	30g
	Nitrate (mg/kg)	13.6		15.6
	Nitrite (mg/kg)	1.7	1.9	

QC Material: Protein Powders Nitrate / Nitrite - Calcium Caseinate

Matrix: Protein Powders Nitrate /	Product ID	10624-QC	10625-QC	11701-QC
	Process Run	PR9784	PR9784	PR9669
	Expiry Date	10 Oct 22	20 Oct 22	28 Sep 22
	Sample Size	30g	30g	30g
	Nitrate (mg/kg)	14.6	14.3	14.1
	Nitrite (mg/kg)	2.0	2.2	1.7

Reference Material: Vitamin Milk Powders - Instant SMP

Matrix: Vitamin Milk Powders	Product ID	639-C-1	593-C-3
	Expiry Date	27 Apr 22	28 Oct 22
	Sample Size	30g	30g
	Vitamin A (µg/100gm)		967
	Vitamin C (mg/100g)	15.7	16.4

QC Material: Vitamin Milk Powders - Instant SMP

Matrix: Vitamin Milk Powders	Product ID	11697-QC	11720-QC
	Process Run	PR9712	PR9938
	Expiry Date	28 Oct 22	27 Apr 22
	Sample Size	30g	30g
	Vitamin A (µg/100gm)	958	
	Vitamin C (mg/100g)	16.8	16.0

Reference Material: Vitamin Milk Powders - Instant WMP

Matrix: Vitamin Milk Powders	Product ID	640-C-1	674-C-1	702-C-1	720-C-1
	Expiry Date	27 Apr 22	31 Aug 22	28 Oct 22	23 Feb 23
	Sample Size	30g	30g	30g	30g
	Vitamin A (µg/100gm)	854	412	852	396
	Vitamin C (mg/100g)	69.7	68.9	70.6	72.8

QC Material: Vitamin Milk Powders - Instant WMP

Matrix: Vitamin Milk Powders	Product ID	11699-QC	11721-QC	12724-QC
	Process Run	PR9571	PR9248	PR9712
	Expiry Date	31 Aug 22	27 Apr 22	28 Oct 22
	Sample Size	30g	30g	30g
	Vitamin A (µg/100gm)	418	859	854
	Vitamin C (mg/100g)	70.0	71.1	71.5
	Vitamin D (µg/100gm)	6.4		

Reference Material: Whey Powder - Whey Powder

Matrix: Whey Powder	Product ID	683-C-1
	Expiry Date	21 Sep 22
	Sample Size	80g
	Ash (%)	7.65
	Fat RG (%)	0.85
	Protein Kjeldahl (%)	15.77

QC Material: Whey Powder - Whey Powder

Matrix: Whey Powder	Product ID	11650-QC
	Process Run	PR9669
	Expiry Date	21 Sep 22
	Sample Size	80g
	Ash (%)	7.67
	Fat RG (%)	0.86
	Insolubility Index 24°C (mL)	0.10
	Moisture 102°C (%)	1.64
	pH (pH units)	6.78
	Protein Kjeldahl (%)	15.76
	Salt (%)	2.18
	Titrateable Acidity (%)	0.060

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

Matrix: Whey Protein Concentrate	Product ID	704-C-1
	Expiry Date	19 Feb 23
	Sample Size	80g
	Ash (%)	3.31
	Lactose (%)	2.8
	Moisture 102°C (%)	4.61
	pH 5% Solution (pH units)	6.76
	Protein Kjeldahl (%)	82.71

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

Matrix: Whey Protein Concentrate	Product ID	12730-QC
	Process Run	PR9784
	Expiry Date	19 Feb 23
	Sample Size	80g
	Ash (%)	3.37
	Fat SBR (%)	3.5
	Insolubility Index 24°C (mL)	0.05
	Lactose (%)	2.8
	Moisture 102°C (%)	4.57
	pH 5% Solution (pH units)	6.74
	Protein Kjeldahl (%)	82.60

Reference Material: Whey Protein Concentrate - WPC80 (Rennet)

Matrix: Whey Protein Concentrate	Product ID	648-C-1	703-C-1
	Expiry Date	13 May 22	16 May 22
	Sample Size	80g	80g
	Ash (%)	2.94	2.94
	Fat SBR (%)	5.6	5.6
	Lactose (%)	4.9	4.9
	Moisture 102°C (%)	4.61	4.84
	pH 5% Solution (pH units)	6.78	6.75
	Protein Kjeldahl (%)	78.84	78.80

QC Material: Whey Protein Concentrate - WPC80 (Rennet)

Matrix: Whey Protein Concentrate	Product ID	10644-QC	12732-QC
	Process Run	PR9396	PR9784
	Expiry Date	13 May 22	16 May 22
	Sample Size	80g	80g
	Ash (%)	2.94	2.94
	Fat SBR (%)	5.5	5.6
	Insolubility Index 24°C (mL)	0.10	0.10
	Lactose (%)	4.9	4.9
	Moisture 102°C (%)	4.70	4.82
	pH 5% Solution (pH units)	6.75	6.72
	Protein Kjeldahl (%)	78.89	78.85