

Reference Material and Inter-laboratory Quality Control Materials Product Summary

September 2022

Version: 1

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	690-C-1	691-C-1	723-C-1	748-C-1	749-C-1	765-C-1	758-C-1
	Expiry Date	1 Oct 22	1 Oct 22	20 Oct 22	16 Nov 22	16 Nov 22	16 Nov 22	8 Jun 23
	Sample Size	100mL	100mL	100mL	100mL	100mL	100mL	100mL
	Alkalinity (mg/kg)	4	5	5	6		6	5
	Carotene (mg/kg)			9.8		9.3		
	Free Fatty Acids (%)	0.17	0.17	0.17			0.16	0.14
	Moisture KF (%)		0.05			0.05	0.05	
	Peroxide Value (meqO2 /kg)	0.03	0.03					

QC Material: Anhydrous Milk Fat - Anhydrous Milk Fat

Matrix: Anhydrous Milk Fat	Product ID	12679-QC	12680-QC	12681-QC	12978-QC	12979-QC	12980-QC	13749-QC
	Process Run	PR9712	PR9712	PR9938	PR10169	PR10289	PR10169	PR10289
	Expiry Date	1 Oct 22	1 Oct 22	20 Oct 22	16 Nov 22	16 Nov 22	16 Nov 22	8 Jun 23
	Sample Size	100mL	100mL	100mL	100mL	100mL	100mL	100mL
	Alkalinity (mg/kg)	6	5	5		8	8	5
	Carotene (mg/kg)	9.7	9.6	9.8	9.6			7.9
	Free Fatty Acids (%)	0.17	0.17	0.17	0.16	0.16	0.17	0.14
	Moisture KF (%)	0.05	0.04		0.05	0.05	0.05	0.05
	Peroxide Value (meqO2 /kg)	0.03	0.03	0.05	0.03	0.01	0.04	0.03

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

Matrix: Milk Powders for Bulk Density	Product ID	12984-QC	13663-QC
	Process Run	PR10289	PR10289
	Expiry Date	28 Aug 23	28 Feb 23
	Sample Size	160g	160g
	Bulk Density 100 Taps (g/ml)	0.69	0.72

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

Matrix: Milk Powders for Bulk Density	Product ID	13664-QC
	Process Run	PR10289
	Expiry Date	28 Feb 23
	Sample Size	120g
	Bulk Density 100 Taps (g/ml)	0.77

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

Matrix: Milk Powders for Bulk Density	Product ID	13667-QC
	Process Run	PR10289
	Expiry Date	28 Feb 23
	Sample Size	120g
	Bulk Density 100 Taps (g/ml)	0.62

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

Matrix: Milk Powders for Bulk Density	Product ID	12983-QC	12986-QC
	Process Run	PR10074	PR10074
	Expiry Date	3 Nov 22	3 Nov 22
	Sample Size	120g	120g
	Bulk Density 100 Taps (g/ml)	0.57	0.58

QC Material: Protein Powders for Bulk Density - Lactic Acid Casein (35 taps)

Matrix: Protein Powders for Bulk	Product ID	13239-QC
	Process Run	PR10020
	Expiry Date	29 Sep 22
	Sample Size	170g
	Bulk Density 35 Taps (g/ml)	0.65

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

Matrix: Protein Powders for Bulk	Product ID	13240-QC
	Process Run	PR10109
	Expiry Date	24 Nov 22
	Sample Size	170g
	Bulk Density 35 Taps (g/ml)	0.68

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

Matrix: Protein Powders for Bulk	Product ID	12221-QC
	Process Run	PR10020
	Expiry Date	29 Sep 22
	Sample Size	85g
	Bulk Density 35 Taps (g /ml)	0.34

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

Matrix: Protein Powders for Bulk	Product ID	12705-QC
	Process Run	PR10109
	Expiry Date	24 Nov 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	PR10020
	Expiry Date	29 Sep 22
	Sample Size	120g
	Bulk Density 100 Taps (g/ml)	0.59

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

Matrix: Protein Powders for Bulk	Product ID	12708-QC
	Process Run	PR10109
	Expiry Date	24 Nov 22
	Sample Size	100g
	Bulk Density 35 Taps (g /ml)	0.43

Reference Material: Butter - Salted Butter

Matrix: Butter	Product ID	735-C-1	768-C-1
	Expiry Date	3 Nov 22	28 Feb 23
	Sample Size	55g	55g
	Fat by Difference (%)	81.27	81.37
	Moisture Oven/Hot Plate (%)	15.83	15.72
	Salt (%)		1.74
	SNF (%)	2.91	

QC Material: Butter - Salted Butter

Matrix: Butter	Product ID	12691-QC	12689-QC
	Process Run	PR10074	PR10289
	Expiry Date	3 Nov 22	28 Feb 23
	Sample Size	55g	55g
	Fat by Difference (%)	81.29	81.36
	Moisture Oven/Hot Plate (%)	15.80	15.69
	Salt (%)	1.75	1.75
	SNF (%)	2.90	2.97

Reference Material: Butter - Unsalted Butter

Matrix: Butter	Product ID	738-C-1
	Expiry Date	3 Nov 22
	Sample Size	55g
	Fat by Difference (%)	83.07
	Moisture Oven/Hot Plate (%)	15.78
	SNF (%)	1.16

QC Material: Butter - Unsalted Butter

Matrix: Butter	Product ID	11626-QC
	Process Run	PR10074
	Expiry Date	3 Nov 22
	Sample Size	55g
	Fat by Difference (%)	83.11
	Moisture Oven/Hot Plate (%)	15.72
	SNF (%)	1.13

QC Material: Butter for pH testing - Lactic Butter

Matrix: Butter for pH testing	Product ID	12693-QC	12694-QC	13033-QC
	Process Run	PR10289	PR10289	PR10289
	Expiry Date	28 Feb 23	28 Feb 23	28 Feb 23
	Sample Size	110g	110g	110g
	pH (pH units)	4.72	4.74	4.68

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

Matrix: Casein	Product ID	687-C-1
	Expiry Date	7 Mar 23
	Sample Size	150g
	Ash (%)	1.74
	Fat SBR (%)	0.8
	Free Acidity (ml/g)	0.16
	Lactose (%)	0.11
	Moisture 102°C (%)	11.40
	pH (pH units)	4.3

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

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

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

Matrix: Casein	Product ID	686-C-1
	Expiry Date	29 Dec 22
	Sample Size	150g
	Ash (%)	1.74
	Fat SBR (%)	0.8
	pH (pH units)	4.2
	Protein Kjeldahl (%)	88.84

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

Matrix: Casein	Product ID	11640-QC
	Process Run	PR9669
	Expiry Date	29 Dec 22
	Sample Size	150g
	Ash (%)	1.78
	Fat SBR (%)	0.8
	Free Acidity (ml/g)	0.08
	Lactose (%)	0.02
	Moisture 102°C (%)	9.83
	Part. Size Pass 1st Sieve (%)	99.4
	Part. Size Pass 2nd Sieve (%)	38.8
	pH (pH units)	4.3
	Protein Kjeldahl (%)	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: Cheese - Cheddar Cheese

Matrix: Cheese	Product ID	737-C-1	712-C-1
	Expiry Date	24 Nov 22	1 May 23
	Sample Size	75g	75g
	Calcium (mmol/kg)	185	
	Fat SBR (%)	34.58	34.99
	Moisture 105°C (%)	36.2	36.2
	Protein (%)	24.37	23.82
	Salt (%)	1.76	1.82

QC Material: Cheese - Cheddar Cheese

Matrix: Cheese	Product ID	12424-QC	12423-QC
	Process Run	PR10074	PR9869
	Expiry Date	24 Nov 22	1 May 23
	Sample Size	75g	75g
	Calcium (mmol/kg)	184	173
	Fat SBR (%)	34.52	34.93
	Moisture 105°C (%)	36.1	36.1
	pH (pH units)	5.24	5.18
	Protein (%)	24.37	23.83
	Salt (%)	1.76	1.82

Reference Material: Cheese - Edam Cheese

Matrix: Cheese	Product ID	724-C-1	745-C-1
	Expiry Date	29 Dec 22	3 Apr 23
	Sample Size	75g	75g
	Calcium (mmol/kg)		210
	Fat SBR (%)		25.29
	Moisture 105°C (%)	41.8	
	pH (pH units)	5.36	5.24
	Protein (%)	27.21	27.05
	Salt (%)	1.98	2.00

QC Material: Cheese - Edam Cheese

Matrix: Cheese	Product ID	12430-QC	13681-QC
	Process Run	PR9938	PR10169
	Expiry Date	29 Dec 22	3 Apr 23
	Sample Size	75g	75g
	Calcium (mmol/kg)	210	206
	Fat SBR (%)	25.36	25.34
	Moisture 105°C (%)	41.7	41.8
	pH (pH units)	5.36	5.24
	Protein (%)	27.18	27.01
	Salt (%)	1.98	2.00

Reference Material: Cheese - Gouda Cheese

Matrix: Cheese	Product ID	747-C-1
	Expiry Date	3 Apr 23
	Sample Size	75g
	Fat SBR (%)	29.20
	Moisture 105°C (%)	39.3
	pH (pH units)	5.39
	Protein (%)	26.21
	Salt (%)	1.74

QC Material: Cheese - Gouda Cheese

Matrix: Cheese	Product ID	13676-QC
	Process Run	PR10169
	Expiry Date	3 Apr 23
	Sample Size	75g
	Calcium (mmol/kg)	195
	Fat SBR (%)	29.35
	Moisture 105°C (%)	39.2
	pH (pH units)	5.38
	Protein (%)	26.23
	Salt (%)	1.74

Reference Material: Cheese - Mozzarella Cheese

Matrix: Cheese	Product ID	746-C-1
	Expiry Date	1 Apr 23
	Sample Size	75g
	Fat SBR (%)	21.94
	pH (pH units)	5.69
	Protein (%)	24.95

QC Material: Cheese - Mozzarella Cheese

Matrix: Cheese	Product ID	13679-QC
	Process Run	PR10169
	Expiry Date	1 Apr 23
	Sample Size	75g
	Calcium (mmol/kg)	164
	Fat SBR (%)	21.92
	pH (pH units)	5.66
	Protein (%)	24.97
	Salt (%)	1.45

Reference Material: Cheese - Noble (Low Fat Cheddar) Cheese

Matrix: Cheese	Product ID	736-C-1
	Expiry Date	29 Dec 22
	Sample Size	75g
	Moisture 105°C (%)	38.0
	pH (pH units)	5.46
	Protein (%)	29.03
	Salt (%)	2.01

QC Material: Cheese - Noble (Low Fat Cheddar) Cheese

Matrix: Cheese	Product ID	12429-QC
	Process Run	PR10074
	Expiry Date	29 Dec 22
	Sample Size	75g
	Calcium (mmol/kg)	225
	Fat SBR (%)	26.69
	Moisture 105°C (%)	37.8
	pH (pH units)	5.45
	Protein (%)	29.06
	Salt (%)	1.99

QC Material: Functional Powders - Instant WMP

Matrix: Functional Powders	Product ID	13690-QC	13691-QC	13687-QC	13688-QC	13686-QC
	Process Run	PR10289	PR10289	PR10074	PR10074	PR10074
	Expiry Date	28 Feb 23	28 Feb 23	3 Nov 22	3 Nov 22	3 Nov 22
	Sample Size	120g	120g	120g	120g	120g
	Coffee Sediment (mL)	0.3	0.2	0.3	0.3	0.2
	Cold SDP 25°C (A-E)	D	D	C	C	D
	Dispersibility (1_7)	1	1	1	1	2
	Sediment 85°C (mL)	0.2	0.2	0.2	0.2	0.2
	Wettability 25°C (secs)	7	7	57	73	11

QC Material: Functional Powders - Instant WMP

Matrix: Functional Powders	Product ID	13689-QC
	Process Run	PR10289
	Expiry Date	28 Feb 23
	Sample Size	120g
	Coffee Sediment (mL)	0.4
	Cold SDP 25°C (A-E)	D
	Dispersibility (1_7)	1
	Sediment 85°C (mL)	0.2
	Wettability 25°C (secs)	6

QC Material: Lactose - Pharmaceutical Lactose

Matrix: Lactose	Product ID	11644-QC	11645-QC
	Process Run	PR9174	PR10109
	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	4.12
	Sulphated Ash (%)	0.02	
	Total Moisture KF (%)	5.02	5.07

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	762-C-1
	Expiry Date	12 May 23	7 Oct 23	9 Apr 24	6 Nov 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)	790	839	895	
	Chloride (mg/100g)	556	554	881	
	Copper (mg/kg)	0.16	0.36	0.14	0.24
	Iron (mg/kg)	101.3		109.7	1.7
	Magnesium (mg/100g)		72.4		72.2
	Manganese (µg/100g)	28	26	26	22
	Phosphorus (mg/100g)		705		655
	Potassium (mg/100g)		1029	1256	1044
	Sodium (mg/100g)			346	210
	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	13702-QC
	Process Run	PR9086	PR9571	PR9938	PR10289
	Expiry Date	12 May 23	7 Oct 23	9 Apr 24	6 Nov 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)	788	837	909	824
	Chloride (mg/100g)	561	552	880	600
	Copper (mg/kg)	0.16	0.38	0.14	0.24
	Iron (mg/kg)	100.8	111.4	109.2	
	Magnesium (mg/100g)	72.9	73.1	104.4	71.1
	Manganese (µg/100g)	28		26	22
	Phosphorus (mg/100g)	582	703	725	638
	Potassium (mg/100g)	737	1038	1251	1050
	Sodium (mg/100g)	232	212	347	210
	Zinc (mg/kg)	46.7	51.6	48.8	25.4

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

Matrix: Powders for Micronutrie nts	Product ID	616-C-2	677-C-1	719-C-1	761-C-1
	Expiry Date	16 Apr 23	17 Dec 23	20 Mar 24	24 Nov 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)	350		373	354
	Chloride (mg/100g)	150	127		105
	Copper (mg/kg)		0.46	0.38	0.51
	Iron (mg/kg)	4.5	3.2	4.2	3.3
	Magnesium (mg/100g)	26.3	24.6	27.8	22.8
	Manganese (µg/100g)	15		14	11
	Phosphorus (mg/100g)	364	353		
	Potassium (mg/100g)	1770	1713	1813	1926
	Sodium (mg/100g)		43	81	38
	Zinc (mg/kg)		16.7	19.5	15.8

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

Matrix: Powders for Micronutrie nts	Product ID	11688-QC	11689-QC	12751-QC	13704-QC
	Process Run	PR9086	PR9571	PR9938	PR10289
	Expiry Date	16 Apr 23	17 Dec 23	20 Mar 24	24 Nov 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)	351	385	373	354
	Chloride (mg/100g)	148	127	149	102
	Copper (mg/kg)	0.38	0.46	0.37	0.53
	Iodine (µg/100gm)			166	
	Iron (mg/kg)	4.3	3.3	4.2	3.3
	Magnesium (mg/100g)	26.1	25.0	27.7	22.5
	Manganese (µg/100g)	15	12	14	11
	Phosphorus (mg/100g)	360		372	333
	Potassium (mg/100g)	1789		1800	1930
	Sodium (mg/100g)	50	44	82	38
	Zinc (mg/kg)	17.4	16.4	19.5	15.6

Reference Material: Powders for Micronutrients - Skim Milk Powder

Matrix: Powders for Micronutrients	Product ID	617-C-1	676-C-1	722-C-1	763-C-1
	Expiry Date	9 Jan 23	30 Jan 23	16 Feb 24	26 Dec 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)		1352	1394	1189
	Chloride (mg/100g)	1080		1190	1183
	Copper (mg/kg)	0.26	0.33		0.23
	Iron (mg/kg)	1.8	2.0	2.3	1.5
	Magnesium (mg/100g)		120.2	126.0	118.0
	Manganese (µg/100g)	29	35	41	26
	Phosphorus (mg/100g)		1000	1034	971
	Potassium (mg/100g)		1602	1530	1871
	Sodium (mg/100g)		405	448	385
	Zinc (mg/kg)	34.4	42.9	43.1	34.5

QC Material: Powders for Micronutrients - Skim Milk Powder

Matrix: Powders for Micronutrients	Product ID	11690-QC	11691-QC	12709-QC	13700-QC
	Process Run	PR9086	PR9571	PR9938	PR10289
	Expiry Date	9 Jan 23	30 Jan 23	16 Feb 24	26 Dec 24
	Sample Size	30g	30g	30g	30g
	Calcium (mg/100g)	1175	1331	1385	1201
	Chloride (mg/100g)	1098	1165	1191	1180
	Copper (mg/kg)	0.27	0.35	0.30	0.24
	Iron (mg/kg)	1.8	2.0	2.2	1.4
	Magnesium (mg/100g)	119.7	120.2	125.9	115.7
	Manganese (µg/100g)	29	35	42	26
	Phosphorus (mg/100g)	972		1040	949
	Potassium (mg/100g)	1807		1530	1875
	Sodium (mg/100g)	372		452	383
	Zinc (mg/kg)	34.8	42.1	43.6	34.5

Reference Material: Milk Powder - Buttermilk Powder

Matrix: Milk Powder	Product ID	699-C-1	767-C-1	764-C-1
	Expiry Date	26 Apr 23	13 Jun 23	11 Sep 24
	Sample Size	80g	80g	80g
	Fat RG (%)	8.70		
	Moisture 102°C (%)	3.48	3.74	3.15
	Moisture Reference Dryer (%)	3.51		
	Protein Kjeldahl (%)	30.85	36.77	30.38

QC Material: Milk Powder - Buttermilk Powder

Matrix: Milk Powder	Product ID	12695-QC	12696-QC	12982-QC
	Process Run	PR9712	PR10289	PR10289
	Expiry Date	26 Apr 23	13 Jun 23	11 Sep 24
	Sample Size	80g	80g	80g
	Fat RG (%)	8.63	8.01	8.39
	Insolubility Index 24°C (mL)	0.10	0.10	0.10
	Moisture 102°C (%)	3.44	3.82	
	Moisture Reference Dryer (%)	3.50		
	Protein Kjeldahl (%)	30.89	36.70	30.33
	Titrate Acidity (%)	0.094	0.104	0.107

Reference Material: Milk Powder - Instant SMP

Matrix: Milk Powder	Product ID	664-C-2	725-C-2
	Expiry Date	5 Apr 23	26 Aug 24
	Sample Size	80g	80g
	Fat RG (%)		0.63
	Moisture 102°C (%)		3.82
	pH (pH units)	6.77	6.75
	Protein Kjeldahl (%)	32.83	
	WPNI (mg/g)	2.6	3.7

QC Material: Milk Powder - Instant SMP

Matrix: Milk Powder	Product ID	11647-QC	12722-QC
	Process Run	PR9462	PR10169
	Expiry Date	5 Apr 23	26 Aug 24
	Sample Size	80g	80g
	Fat RG (%)	0.96	0.64
	Insolubility Index 24°C (mL)	0.15	0.10
	Moisture 102°C (%)	3.60	3.86
	Moisture Reference Dryer (%)	3.65	
	pH (pH units)	6.77	6.74
	Protein Kjeldahl (%)	32.97	32.98
	Titrateable Acidity (%)	0.085	0.093
	WPNI (mg/g)	2.6	3.9

Reference Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	753-C-1
	Expiry Date	28 Sep 24
	Sample Size	80g
	Fat RG (%)	0.55
	Moisture 102°C (%)	3.69
	pH (pH units)	6.73
	Protein Kjeldahl (%)	38.90
	WPNI (mg/g)	4.1

QC Material: Milk Powder - Skim Milk Powder

Matrix: Milk Powder	Product ID	12723-QC
	Process Run	PR10169
	Expiry Date	28 Sep 24
	Sample Size	80g
	Fat RG (%)	0.54
	Insolubility Index 24°C (mL)	0.10
	Moisture 102°C (%)	3.75
	pH (pH units)	6.72
	Protein Kjeldahl (%)	38.91
	Titrateable Acidity (%)	0.110
	WPNI (mg/g)	4.2

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	751-C-1	752-C-1	750-C-1
	Expiry Date	11 Jan 23	11 Jan 23	5 Feb 23	7 May 23	18 May 23	1 Sep 23
	Sample Size	80g	80g	80g	80g	80g	80g
	Ash (%)	5.13	5.62	4.88	5.37	4.48	5.61
	Fat RG (%)	28.11	28.39	26.82	28.26	26.98	26.38
	Free Fat - in powder (%)		1.35			0.48	0.60
	Moisture 102°C (%)	2.99	3.08	2.73	2.98	3.07	2.78
	Moisture KF (%)	3.36	3.47	3.09	3.38	3.48	3.23
	Moisture Reference Dryer (%)		3.20				
	pH (pH units)	6.70	6.70	6.74	6.71	6.78	6.65
	Protein Kjeldahl (%)	23.34	23.74	24.89		24.89	24.94
	WPNI (mg/g SNF)	1.2			2.2		2.8

QC Material: Milk Powder - Whole Milk Powder

Matrix: Milk Powder	Product ID	11668-QC	12728-QC	11669-QC	12961-QC	12729-QC	12962-QC
	Process Run	PR9571	PR9712	PR9571	PR10169	PR10169	PR10169
	Expiry Date	11 Jan 23	11 Jan 23	5 Feb 23	7 May 23	18 May 23	1 Sep 23
	Sample Size	80g	80g	80g	80g	80g	80g
	Ash (%)	5.14	5.60	4.88	5.34	4.47	5.62
	Fat RG (%)	28.09	28.39	26.75		26.98	26.37
	Free Fat - in powder (%)	1.27	1.35	0.49	0.96	0.48	0.58
	Insolubility Index 24°C (mL)	0.25	0.30	0.10	0.15	0.10	0.10
	Moisture 102°C (%)	2.98	3.08	2.73	3.05	3.14	2.83
	Moisture KF (%)		3.45		3.44	3.56	3.20
	Moisture Reference Dryer (%)	3.12	3.18	2.84			
	pH (pH units)	6.70	6.70	6.72	6.69	6.77	6.63
	Protein Combustion (%)		23.88				
	Protein Kjeldahl (%)	23.35	23.76	24.90		24.86	24.90
	Titrate Acidity (%)	0.097	0.100	0.090	0.094	0.077	0.111
	WPNI (mg/g SNF)	1.2	2.0	3.7	2.2	3.7	2.7

Reference Material: Milk Protein Concentrate - MPC42

Matrix: Milk Protein Concentrate	Product ID	755-C-1
	Expiry Date	1 Mar 23
	Sample Size	80g
	Ash (%)	5.53
	Fat RG (%)	26.06
	Moisture 102°C (%)	3.08
	pH 5% Solution (pH units)	6.99
	Protein Kjeldahl (%)	43.01

QC Material: Milk Protein Concentrate - MPC42

Matrix: Milk Protein Concentrate	Product ID	12712-QC
	Process Run	PR10169
	Expiry Date	1 Mar 23
	Sample Size	80g
	Ash (%)	5.56
	Fat RG (%)	26.09
	Insolubility Index 40°C (mL)	0.10
	Moisture 102°C (%)	3.06
	pH 5% Solution (pH units)	7.02
	Protein Kjeldahl (%)	43.06
	Tit Acidity 5% Solution (%m/m)	0.777

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 - MPC70

Matrix: Milk Protein Concentrate	Product ID	754-C-1
	Expiry Date	4 Mar 23
	Sample Size	80g
	Ash (%)	7.14
	Fat RG (%)	1.10
	Moisture 102°C (%)	4.77
	pH 5% Solution (pH units)	7.00
	Protein Kjeldahl (%)	69.66

QC Material: Milk Protein Concentrate - MPC70

Matrix: Milk Protein Concentrate	Product ID	12714-QC
	Process Run	PR10169
	Expiry Date	4 Mar 23
	Sample Size	80g
	Ash (%)	7.14
	Fat RG (%)	1.08
	Insolubility Index 40°C (mL)	0.13
	Moisture 102°C (%)	4.78
	pH 5% Solution (pH units)	7.03
	Protein Kjeldahl (%)	69.81
	Tit Acidity 5% Solution (%m/m)	1.064

Reference Material: Milk Protein Concentrate - MPC80

Matrix: Milk Protein Concentrate	Product ID	734-C-1
	Expiry Date	9 Feb 23
	Sample Size	80g
	Fat SBR (%)	1.17
	Lactose (%)	9.66
	pH 5% Solution (pH units)	7.03

QC Material: Milk Protein Concentrate - MPC80

Matrix: Milk Protein Concentrate	Product ID	12715-QC
	Process Run	PR10074
	Expiry Date	9 Feb 23
	Sample Size	80g
	Ash (%)	6.99
	Fat SBR (%)	1.18
	Lactose (%)	9.37
	Moisture 102°C (%)	5.59
	pH 5% Solution (pH units)	7.02
	Protein Kjeldahl (%)	77.35

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	733-C-1
	Expiry Date	5 Sep 23
	Sample Size	80g
	Fat SBR (%)	1.24
	Lactose (%)	1.46
	pH 5% Solution (pH units)	6.88

QC Material: Milk Protein Concentrate - MPI

Matrix: Milk Protein Concentrate	Product ID	12717-QC
	Process Run	PR10074
	Expiry Date	5 Sep 23
	Sample Size	80g
	Fat SBR (%)	1.23
	Lactose (%)	1.48
	Moisture 102°C (%)	5.52
	pH 5% Solution (pH units)	6.86
	Protein Kjeldahl (%)	85.95

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	593-C-3	766-C-1
	Expiry Date	28 Oct 22	30 Aug 23
	Sample Size	30g	30g
	Vitamin A (µg/100gm)	967	1005
	Vitamin C (mg/100g)	16.4	11.8

QC Material: Vitamin Milk Powders - Instant SMP

Matrix: Vitamin Milk Powders	Product ID	11697-QC	12727-QC
	Process Run	PR9712	PR10289
	Expiry Date	28 Oct 22	30 Aug 23
	Sample Size	30g	30g
	Vitamin A (µg/100gm)	958	997
	Vitamin C (mg/100g)	16.8	11.3
	Vitamin D (µg/100gm)		6.1

Reference Material: Vitamin Milk Powders - Instant WMP

Matrix: Vitamin Milk Powders	Product ID	702-C-1	720-C-1	732-C-1	760-C-1
	Expiry Date	28 Oct 22	23 Feb 23	3 May 23	30 Aug 23
	Sample Size	30g	30g	30g	30g
	Vitamin A (µg/100gm)	852	396	413	415
	Vitamin C (mg/100g)	70.6	72.8	73.6	72.0

QC Material: Vitamin Milk Powders - Instant WMP

Matrix: Vitamin Milk Powders	Product ID	12724-QC	12726-QC	13733-QC
	Process Run	PR9712	PR10074	PR10289
	Expiry Date	28 Oct 22	3 May 23	30 Aug 23
	Sample Size	30g	30g	30g
	Vitamin A (µg/100gm)	854	422	420
	Vitamin C (mg/100g)	71.5		71.7
	Vitamin D (µg/100gm)			6.3

QC Material: Whey Powder - Whey Powder

Matrix: Whey Powder	Product ID	12750-QC	12994-QC
	Process Run	PR10020	PR10020
	Expiry Date	21 Sep 22	5 Nov 24
	Sample Size	80g	80g
	Ash (%)	7.60	8.17
	Fat RG (%)	0.92	1.02
	Insolubility Index 24°C (mL)	0.10	0.10
	Moisture 102°C (%)	1.69	1.60
	pH (pH units)	6.73	6.78
	Protein Kjeldahl (%)	15.74	16.68
	Salt (%)	2.18	2.48
	Titrateable Acidity (%)	0.060	0.060

Reference Material: Whey Protein Concentrate - WPC80 (Cheese)

Matrix: Whey Protein Concentrate	Product ID	742-C-1
	Expiry Date	22 Aug 23
	Sample Size	80g
	Fat SBR (%)	3.8
	Lactose (%)	7.4
	Moisture 102°C (%)	4.39
	pH 5% Solution (pH units)	6.71
	Protein Kjeldahl (%)	78.95

QC Material: Whey Protein Concentrate - WPC80 (Cheese)

Matrix: Whey Protein Concentrate	Product ID	12733-QC
	Process Run	PR10109
	Expiry Date	22 Aug 23
	Sample Size	80g
	Ash (%)	3.24
	Fat SBR (%)	3.8
	Insolubility Index 24°C (mL)	0.20
Lactose (%)	7.3	
Moisture 102°C (%)	4.42	
pH 5% Solution (pH units)	6.68	
Protein Kjeldahl (%)	79.07	

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 (Mineral Acid)

Matrix: Whey Protein Concentrate	Product ID	743-C-1
	Expiry Date	22 Apr 23
	Sample Size	80g
	Fat SBR (%)	6.0
	Moisture 102°C (%)	5.27
	Protein Kjeldahl (%)	77.48

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

Matrix: Whey Protein Concentrate	Product ID	12731-QC
	Process Run	PR10109
	Expiry Date	22 Apr 23
	Sample Size	80g
	Ash (%)	4.63
	Fat SBR (%)	6.0
	Insolubility Index 24°C (mL)	0.10
	Lactose (%)	4.4
	Moisture 102°C (%)	5.29
	pH 5% Solution (pH units)	6.70
	Protein Kjeldahl (%)	77.54