

## Reference Material and Inter-laboratory Quality Control Materials Product Summary

December 2022

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.

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

### QC Material: Anhydrous Milk Fat - Anhydrous Milk Fat

|                                  |                            |          |
|----------------------------------|----------------------------|----------|
| Matrix:<br>Anhydrous<br>Milk Fat | Product ID                 | 13754-QC |
|                                  | Process Run                | PR10411  |
|                                  | Expiry Date                | 1 Oct 23 |
|                                  | Sample Size                | 100mL    |
|                                  | Alkalinity (mg/kg)         | 6        |
|                                  | Carotene (mg/kg)           | 9.8      |
|                                  | Free Fatty Acids (%)       | 0.16     |
|                                  | Moisture KF (%)            | 0.05     |
|                                  | Peroxide Value (meqO2 /kg) | 0.03     |
|                                  |                            |          |

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

|                                                |                              |           |          |
|------------------------------------------------|------------------------------|-----------|----------|
| Matrix: Milk<br>Powders for<br>Bulk<br>Density | Product ID                   | 12984-QC  | 13663-QC |
|                                                | Process Run                  | PR10289   | PR10411  |
|                                                | Expiry Date                  | 28 Aug 23 | 2 May 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)**

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

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

|                                              |                                     |          |
|----------------------------------------------|-------------------------------------|----------|
| <b>Matrix: Milk Powders for Bulk Density</b> | Product ID                          | 13667-QC |
|                                              | Process Run                         | PR10411  |
|                                              | Expiry Date                         | 2 May 23 |
|                                              | Sample Size                         | 120g     |
|                                              | <b>Bulk Density 100 Taps (g/ml)</b> | 0.62     |

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

|                                              |                                     |          |          |
|----------------------------------------------|-------------------------------------|----------|----------|
| <b>Matrix: Milk Powders for Bulk Density</b> | Product ID                          | 12983-QC | 12986-QC |
|                                              | Process Run                         | PR10411  | PR10411  |
|                                              | Expiry Date                         | 2 May 23 | 2 May 23 |
|                                              | Sample Size                         | 120g     | 120g     |
|                                              | <b>Bulk Density 100 Taps (g/ml)</b> | 0.56     | 0.58     |

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

|                                                     |                                     |          |
|-----------------------------------------------------|-------------------------------------|----------|
| <b>Matrix:<br/>Protein<br/>Powders for<br/>Bulk</b> | Product ID                          | 12706-QC |
|                                                     | Process Run                         | PR10374  |
|                                                     | Expiry Date                         | 4 Apr 23 |
|                                                     | Sample Size                         | 85g      |
|                                                     | <b>Bulk Density 35 Taps (g /ml)</b> | 0.36     |

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

|                                                     |                                     |           |
|-----------------------------------------------------|-------------------------------------|-----------|
| <b>Matrix:<br/>Protein<br/>Powders for<br/>Bulk</b> | Product ID                          | 13668-QC  |
|                                                     | Process Run                         | PR10495   |
|                                                     | Expiry Date                         | 30 May 23 |
|                                                     | Sample Size                         | 110g      |
|                                                     | <b>Bulk Density 35 Taps (g /ml)</b> | 0.46      |

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

|                                                     |                                     |          |          |
|-----------------------------------------------------|-------------------------------------|----------|----------|
| <b>Matrix:<br/>Protein<br/>Powders for<br/>Bulk</b> | Product ID                          | 12704-QC | 13669-QC |
|                                                     | Process Run                         | PR10374  | PR10374  |
|                                                     | Expiry Date                         | 1 Mar 23 | 4 Apr 23 |
|                                                     | Sample Size                         | 120g     | 120g     |
|                                                     | <b>Bulk Density 100 Taps (g/ml)</b> | 0.59     | 0.61     |

**QC Material: Protein Powders for Bulk Density - MPC85 (35 taps)**

|                                                                       |                                     |          |
|-----------------------------------------------------------------------|-------------------------------------|----------|
| <b>Matrix:</b><br><b>Protein</b><br><b>Powders for</b><br><b>Bulk</b> | Product ID                          | 13672-QC |
|                                                                       | Process Run                         | PR10374  |
|                                                                       | Expiry Date                         | 4 Apr 23 |
|                                                                       | Sample Size                         | 100g     |
|                                                                       | <b>Bulk Density 35 Taps (g /ml)</b> | 0.43     |

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

|                                                                       |                                     |           |
|-----------------------------------------------------------------------|-------------------------------------|-----------|
| <b>Matrix:</b><br><b>Protein</b><br><b>Powders for</b><br><b>Bulk</b> | Product ID                          | 13671-QC  |
|                                                                       | Process Run                         | PR10495   |
|                                                                       | Expiry Date                         | 30 May 23 |
|                                                                       | Sample Size                         | 90g       |
|                                                                       | <b>Bulk Density 35 Taps (g /ml)</b> | 0.36      |

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

|                                                                       |                                     |           |
|-----------------------------------------------------------------------|-------------------------------------|-----------|
| <b>Matrix:</b><br><b>Protein</b><br><b>Powders for</b><br><b>Bulk</b> | Product ID                          | 13670-QC  |
|                                                                       | Process Run                         | PR10495   |
|                                                                       | Expiry Date                         | 30 May 23 |
|                                                                       | Sample Size                         | 100g      |
|                                                                       | <b>Bulk Density 35 Taps (g /ml)</b> | 0.45      |

**Reference Material: Butter - Salted Butter**

|                           |                                    |           |
|---------------------------|------------------------------------|-----------|
| <b>Matrix:<br/>Butter</b> | <b>Product ID</b>                  | 768-C-1   |
|                           | <b>Expiry Date</b>                 | 28 Feb 23 |
|                           | <b>Sample Size</b>                 | 55g       |
|                           | <b>Fat by Difference (%)</b>       | 81.37     |
|                           | <b>Moisture Oven/Hot Plate (%)</b> | 15.72     |
|                           | <b>Salt (%)</b>                    | 1.74      |

**QC Material: Butter - Salted Butter**

|                           |                                    |           |
|---------------------------|------------------------------------|-----------|
| <b>Matrix:<br/>Butter</b> | <b>Product ID</b>                  | 12689-QC  |
|                           | <b>Process Run</b>                 | PR10289   |
|                           | <b>Expiry Date</b>                 | 28 Feb 23 |
|                           | <b>Sample Size</b>                 | 55g       |
|                           | <b>Fat by Difference (%)</b>       | 81.36     |
|                           | <b>Moisture Oven/Hot Plate (%)</b> | 15.69     |
|                           | <b>Salt (%)</b>                    | 1.75      |
|                           | <b>SNF (%)</b>                     | 2.97      |

**Reference Material: Butter - Unsalted Butter**

|                           |                                    |          |
|---------------------------|------------------------------------|----------|
| <b>Matrix:<br/>Butter</b> | <b>Product ID</b>                  | 772-C-1  |
|                           | <b>Expiry Date</b>                 | 4 Apr 23 |
|                           | <b>Sample Size</b>                 | 55g      |
|                           | <b>Fat by Difference (%)</b>       | 82.97    |
|                           | <b>Moisture Oven/Hot Plate (%)</b> | 15.64    |
|                           | <b>SNF (%)</b>                     | 1.37     |

**QC Material: Butter - Unsalted Butter**

|                           |                                    |          |
|---------------------------|------------------------------------|----------|
| <b>Matrix:<br/>Butter</b> | <b>Product ID</b>                  | 13657-QC |
|                           | <b>Process Run</b>                 | PR10374  |
|                           | <b>Expiry Date</b>                 | 4 Apr 23 |
|                           | <b>Sample Size</b>                 | 55g      |
|                           | <b>Fat by Difference (%)</b>       | 83.04    |
|                           | <b>Moisture Oven/Hot Plate (%)</b> | 15.63    |
|                           | <b>SNF (%)</b>                     | 1.30     |

**QC Material: Butter for pH testing - Lactic Butter**

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

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

|                           |                             |          |           |
|---------------------------|-----------------------------|----------|-----------|
| <b>Matrix:<br/>Casein</b> | <b>Product ID</b>           | 687-C-1  | 776-C-1   |
|                           | <b>Expiry Date</b>          | 7 Mar 23 | 20 Dec 23 |
|                           | <b>Sample Size</b>          | 150g     | 150g      |
|                           | <b>Ash (%)</b>              | 1.74     | 1.77      |
|                           | <b>Fat SBR (%)</b>          | 0.8      | 0.9       |
|                           | <b>Free Acidity (ml/g)</b>  | 0.16     | 0.15      |
|                           | <b>Lactose (%)</b>          | 0.11     | 0.12      |
|                           | <b>Moisture 102°C (%)</b>   | 11.40    | 11.49     |
|                           | <b>pH (pH units)</b>        | 4.3      | 4.2       |
|                           | <b>Protein Kjeldahl (%)</b> |          | 86.74     |

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

| Matrix:<br>Casein | Product ID                    | 11639-QC | 12990-QC  |
|-------------------|-------------------------------|----------|-----------|
|                   | Process Run                   | PR9669   | PR10374   |
|                   | Expiry Date                   | 7 Mar 23 | 20 Dec 23 |
|                   | Sample Size                   | 150g     | 150g      |
|                   | Ash (%)                       | 1.80     | 1.78      |
|                   | Fat SBR (%)                   | 0.7      | 0.8       |
|                   | Free Acidity (ml/g)           | 0.17     | 0.16      |
|                   | Lactose (%)                   | 0.11     | 0.11      |
|                   | Moisture 102°C (%)            | 11.42    | 11.50     |
|                   | Part. Size Pass 1st Sieve (%) | 100.0    | 100.0     |
|                   | Part. Size Pass 2nd Sieve (%) | 51.5     | 61.3      |
|                   | pH (pH units)                 | 4.3      | 4.3       |
|                   | Protein Kjeldahl (%)          | 86.76    | 87.01     |

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

| Matrix:<br>Casein | Product ID           | 775-C-1   |
|-------------------|----------------------|-----------|
|                   | Expiry Date          | 30 Mar 24 |
|                   | Sample Size          | 150g      |
|                   | Ash (%)              | 1.70      |
|                   | Fat SBR (%)          | 0.5       |
|                   | Moisture 102°C (%)   | 9.27      |
|                   | Protein Kjeldahl (%) | 89.60     |

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

|                           |                                      |           |
|---------------------------|--------------------------------------|-----------|
| <b>Matrix:<br/>Casein</b> | <b>Product ID</b>                    | 12991-QC  |
|                           | <b>Process Run</b>                   | PR10374   |
|                           | <b>Expiry Date</b>                   | 30 Mar 24 |
|                           | <b>Sample Size</b>                   | 150g      |
|                           | <b>Ash (%)</b>                       | 1.69      |
|                           | <b>Fat SBR (%)</b>                   | 0.5       |
|                           | <b>Free Acidity (ml/g)</b>           | 0.07      |
|                           | <b>Lactose (%)</b>                   | 0.02      |
|                           | <b>Moisture 102°C (%)</b>            | 9.30      |
|                           | <b>Part. Size Pass 1st Sieve (%)</b> | 100.0     |
|                           | <b>Part. Size Pass 2nd Sieve (%)</b> | 41.0      |
|                           | <b>pH (pH units)</b>                 | 4.4       |
|                           | <b>Protein Kjeldahl (%)</b>          | 89.68     |

**Reference Material: Caseinate - Calcium Caseinate**

|                              |                                  |          |           |
|------------------------------|----------------------------------|----------|-----------|
| <b>Matrix:<br/>Caseinate</b> | <b>Product ID</b>                | 685-C-1  | 774-C-1   |
|                              | <b>Expiry Date</b>               | 8 Apr 23 | 17 Mar 24 |
|                              | <b>Sample Size</b>               | 80g      | 80g       |
|                              | <b>Ash (%)</b>                   | 3.80     | 3.97      |
|                              | <b>Fat SBR (%)</b>               |          | 0.6       |
|                              | <b>Moisture 102°C (%)</b>        | 5.19     | 4.83      |
|                              | <b>pH 5% Solution (pH units)</b> | 7.06     | 7.06      |
|                              | <b>Protein Kjeldahl (%)</b>      | 91.63    | 91.80     |

**QC Material: Caseinate - Calcium Caseinate**

| Matrix:<br>Caseinate | Product ID                | 11641-QC | 12992-QC  |
|----------------------|---------------------------|----------|-----------|
|                      | Process Run               | PR9669   | PR10374   |
|                      | Expiry Date               | 8 Apr 23 | 17 Mar 24 |
|                      | Sample Size               | 80g      | 80g       |
|                      | Ash (%)                   | 3.86     | 3.99      |
|                      | Fat SBR (%)               | 0.5      |           |
|                      | Lactose (%)               | 0.06     | 0.04      |
|                      | Moisture 102°C (%)        | 5.28     | 4.86      |
|                      | pH 5% Solution (pH units) | 7.05     | 7.05      |
|                      | Protein Kjeldahl (%)      | 91.81    | 91.82     |

**Reference Material: Caseinate - Sodium Caseinate**

| Matrix:<br>Caseinate | Product ID                | 773-C-1  |
|----------------------|---------------------------|----------|
|                      | Expiry Date               | 2 Aug 24 |
|                      | Sample Size               | 80g      |
|                      | Fat SBR (%)               | 0.6      |
|                      | Moisture 102°C (%)        | 4.89     |
|                      | pH 5% Solution (pH units) | 6.69     |
|                      | Protein Kjeldahl (%)      | 92.02    |

**QC Material: Caseinate - Sodium Caseinate**

| Matrix:<br>Caseinate | Product ID                | 12993-QC |
|----------------------|---------------------------|----------|
|                      | Process Run               | PR10374  |
|                      | Expiry Date               | 2 Aug 24 |
|                      | Sample Size               | 80g      |
|                      | Ash (%)                   | 3.70     |
|                      | Lactose (%)               | 0.04     |
|                      | Moisture 102°C (%)        | 4.98     |
|                      | pH 5% Solution (pH units) | 6.69     |
|                      | Protein Kjeldahl (%)      | 91.85    |

**Reference Material: Cheese - Edam Cheese**

|                           |                          |          |
|---------------------------|--------------------------|----------|
| <b>Matrix:<br/>Cheese</b> | <b>Product ID</b>        | 745-C-1  |
|                           | <b>Expiry Date</b>       | 3 Apr 23 |
|                           | <b>Sample Size</b>       | 75g      |
|                           | <b>Calcium (mmol/kg)</b> | 210      |
|                           | <b>Fat SBR (%)</b>       | 25.29    |
|                           | <b>pH (pH units)</b>     | 5.24     |
|                           | <b>Protein (%)</b>       | 27.05    |
|                           | <b>Salt (%)</b>          | 2.00     |

**QC Material: Cheese - Edam Cheese**

|                           |                           |          |
|---------------------------|---------------------------|----------|
| <b>Matrix:<br/>Cheese</b> | <b>Product ID</b>         | 13681-QC |
|                           | <b>Process Run</b>        | PR10169  |
|                           | <b>Expiry Date</b>        | 3 Apr 23 |
|                           | <b>Sample Size</b>        | 75g      |
|                           | <b>Calcium (mmol/kg)</b>  | 206      |
|                           | <b>Fat SBR (%)</b>        | 25.34    |
|                           | <b>Moisture 105°C (%)</b> | 41.8     |
|                           | <b>pH (pH units)</b>      | 5.24     |
|                           | <b>Protein (%)</b>        | 27.01    |
|                           | <b>Salt (%)</b>           | 2.00     |

**Reference Material: Cheese - Egmont Cheese**

|                           |                           |          |
|---------------------------|---------------------------|----------|
| <b>Matrix:<br/>Cheese</b> | <b>Product ID</b>         | 785-C-1  |
|                           | <b>Expiry Date</b>        | 8 Aug 23 |
|                           | <b>Sample Size</b>        | 75g      |
|                           | <b>Calcium (mmol/kg)</b>  | 185      |
|                           | <b>Fat SBR (%)</b>        | 32.88    |
|                           | <b>Moisture 105°C (%)</b> | 38.3     |
|                           | <b>pH (pH units)</b>      | 5.25     |
|                           | <b>Salt (%)</b>           | 1.60     |

**QC Material: Cheese - Egmont Cheese**

|                           |                           |          |
|---------------------------|---------------------------|----------|
| <b>Matrix:<br/>Cheese</b> | <b>Product ID</b>         | 13675-QC |
|                           | <b>Process Run</b>        | PR10411  |
|                           | <b>Expiry Date</b>        | 8 Aug 23 |
|                           | <b>Sample Size</b>        | 75g      |
|                           | <b>Calcium (mmol/kg)</b>  | 183      |
|                           | <b>Fat SBR (%)</b>        | 32.87    |
|                           | <b>Moisture 105°C (%)</b> | 38.3     |
|                           | <b>pH (pH units)</b>      | 5.27     |
|                           | <b>Protein (%)</b>        | 24.26    |
|                           | <b>Salt (%)</b>           | 1.60     |

**Reference Material: Cheese - Mozzarella Cheese**

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

**QC Material: Cheese - Mozzarella Cheese**

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

**QC Material: Functional Powders - Instant WMP**

| Matrix:<br>Functional<br>Powders | Product ID              | 13693-QC | 13694-QC | 13692-QC | 13690-QC  |
|----------------------------------|-------------------------|----------|----------|----------|-----------|
|                                  | Process Run             | PR10411  | PR10411  | PR10411  | PR10289   |
|                                  | Expiry Date             | 2 May 23 | 2 May 23 | 2 May 23 | 28 Feb 23 |
|                                  | Sample Size             | 120g     | 120g     | 120g     | 120g      |
|                                  |                         |          |          |          |           |
|                                  | Coffee Sediment (mL)    | 0.5      | 0.4      | 0.2      | 0.3       |
|                                  | Cold SDP 25°C (A-E)     | D        | D        | D        | D         |
|                                  | Dispersibility (1_7)    | 2        | 2        | 1        | 1         |
|                                  | Sediment 85°C (mL)      | 0.2      | 0.2      | 0.2      | 0.2       |
|                                  | Wettability 25°C (secs) | 9        | 8        | 8        | 7         |

**QC Material: Functional Powders - Instant WMP**

| Matrix:<br>Functional<br>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:<br>Lactose | Product ID                 | 11645-QC  |
|--------------------|----------------------------|-----------|
|                    | Process Run                | PR10109   |
|                    | Expiry Date                | 10 Jan 24 |
|                    | Sample Size                | 80g       |
|                    |                            |           |
|                    | Moist LOD (%)              | 0.08      |
|                    | pH 10% solution (pH units) | 4.12      |
|                    | Total Moisture KF (%)      | 5.07      |

**Reference Material: Powders for Micronutrients - WPC80 (Cheese)**

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

**QC Material: Powders for Micronutrients - WPC80 (Cheese)**

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

**Reference Material: Powders for Micronutrients - Instant WMP**

| Matrix:<br>Powders for<br>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:<br>Powders for<br>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:<br>Powders for<br>Micronutrients | 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:<br>Powders for<br>Micronutrients | 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:<br>Powders for<br>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:<br>Powders for<br>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     |
|                     | Titrateable Acidity (%)      | 0.094     | 0.104     | 0.107     |

**Reference Material: Milk Powder - Instant SMP**

| Matrix: Milk Powder | Product ID         | 725-C-2   |
|---------------------|--------------------|-----------|
|                     | Expiry Date        | 26 Aug 24 |
|                     | Sample Size        | 80g       |
|                     | Fat RG (%)         | 0.63      |
|                     | Moisture 102°C (%) | 3.82      |
|                     | pH (pH units)      | 6.75      |
|                     | WPNI (mg/g)        | 3.7       |

**QC Material: Milk Powder - Instant SMP**

|                            |                                     |           |
|----------------------------|-------------------------------------|-----------|
| <b>Matrix: Milk Powder</b> | <b>Product ID</b>                   | 12722-QC  |
|                            | <b>Process Run</b>                  | PR10169   |
|                            | <b>Expiry Date</b>                  | 26 Aug 24 |
|                            | <b>Sample Size</b>                  | 80g       |
|                            | <b>Fat RG (%)</b>                   | 0.64      |
|                            | <b>Insolubility Index 24°C (mL)</b> | 0.10      |
|                            | <b>Moisture 102°C (%)</b>           | 3.86      |
|                            | <b>pH (pH units)</b>                | 6.74      |
|                            | <b>Protein Kjeldahl (%)</b>         | 32.98     |
|                            | <b>Titrateable Acidity (%)</b>      | 0.093     |
|                            | <b>WPNI (mg/g)</b>                  | 3.9       |
|                            |                                     |           |

**Reference Material: Milk Powder - Skim Milk Powder**

|                            |                             |           |           |
|----------------------------|-----------------------------|-----------|-----------|
| <b>Matrix: Milk Powder</b> | <b>Product ID</b>           | 781-C-1   | 782-C-1   |
|                            | <b>Expiry Date</b>          | 20 Jan 25 | 28 Mar 25 |
|                            | <b>Sample Size</b>          | 80g       | 80g       |
|                            | <b>Fat RG (%)</b>           | 0.87      | 0.69      |
|                            | <b>Moisture 102°C (%)</b>   | 3.84      | 3.87      |
|                            | <b>pH (pH units)</b>        | 6.73      | 6.66      |
|                            | <b>Protein Kjeldahl (%)</b> | 32.68     | 32.73     |
|                            | <b>WPNI (mg/g)</b>          | 6.4       | 3.6       |

**QC Material: Milk Powder - Skim Milk Powder**

| Matrix: Milk Powder | Product ID                   | 13730-QC  | 13729-QC  |
|---------------------|------------------------------|-----------|-----------|
|                     | Process Run                  | PR10411   | PR10411   |
|                     | Expiry Date                  | 20 Jan 25 | 28 Mar 25 |
|                     | Sample Size                  | 80g       | 80g       |
|                     | Fat RG (%)                   | 0.91      | 0.69      |
|                     | Insolubility Index 24°C (mL) | 0.10      | 0.10      |
|                     | Moisture 102°C (%)           | 3.85      | 3.87      |
|                     | Moisture Reference Dryer (%) | 3.84      | 3.85      |
|                     | pH (pH units)                | 6.75      | 6.68      |
|                     | Protein Kjeldahl (%)         | 32.67     | 32.72     |
|                     | Titrateable Acidity (%)      | 0.086     | 0.093     |
|                     | WPNI (mg/g)                  | 6.3       | 3.7       |

**QC Material: Milk Powder - Skim Milk Powder**

| Matrix: Milk Powder | Product ID                   | 13785-QC |
|---------------------|------------------------------|----------|
|                     | Process Run                  | PR10454  |
|                     | Expiry Date                  | 4 Nov 23 |
|                     | Sample Size                  | 30g      |
|                     | RDW WPNI Low Heat SMP (mg/g) | 6.53     |

**Reference Material: Milk Powder - Whole Milk Powder**

| Matrix: Milk Powder | Product ID               | 678-C-1   | 669-C-1  | 751-C-1  | 752-C-1   | 750-C-1  | 786-C-1   |
|---------------------|--------------------------|-----------|----------|----------|-----------|----------|-----------|
|                     | Expiry Date              | 11 Jan 23 | 5 Feb 23 | 7 May 23 | 18 May 23 | 1 Sep 23 | 17 Jan 24 |
|                     | Sample Size              | 80g       | 80g      | 80g      | 80g       | 80g      | 80g       |
|                     | Ash (%)                  | 5.13      | 4.88     | 5.37     | 4.48      | 5.61     | 5.81      |
|                     | Fat RG (%)               | 28.11     | 26.82    | 28.26    | 26.98     | 26.38    | 26.39     |
|                     | Free Fat - in powder (%) |           |          |          | 0.48      | 0.60     | 1.32      |
|                     | Moisture 102°C (%)       | 2.99      | 2.73     | 2.98     | 3.07      | 2.78     | 3.17      |
|                     | Moisture KF (%)          | 3.36      | 3.09     | 3.38     | 3.48      | 3.23     |           |
|                     | pH (pH units)            | 6.70      | 6.74     | 6.71     | 6.78      | 6.65     |           |
|                     | Protein Kjeldahl (%)     | 23.34     | 24.89    |          | 24.89     | 24.94    | 24.16     |
|                     | WPNI (mg/g SNF)          | 1.2       |          | 2.2      |           | 2.8      | 2.9       |

**QC Material: Milk Powder - Whole Milk Powder**

| Matrix: Milk Powder | Product ID                   | 11668-QC  | 11669-QC | 12961-QC | 12729-QC  | 12962-QC | 12964-QC  | 12963-QC  |
|---------------------|------------------------------|-----------|----------|----------|-----------|----------|-----------|-----------|
|                     | Process Run                  | PR9571    | PR9571   | PR10169  | PR10169   | PR10169  | PR10411   | PR10411   |
|                     | Expiry Date                  | 11 Jan 23 | 5 Feb 23 | 7 May 23 | 18 May 23 | 1 Sep 23 | 17 Jan 24 | 28 Jan 24 |
|                     | Sample Size                  | 80g       | 80g      | 80g      | 80g       | 80g      | 80g       | 80g       |
|                     | Ash (%)                      | 5.14      | 4.88     | 5.34     | 4.47      | 5.62     | 5.86      | 4.62      |
|                     | Fat RG (%)                   | 28.09     | 26.75    |          | 26.98     | 26.37    | 26.41     | 28.52     |
|                     | Free Fat - in powder (%)     | 1.27      | 0.49     | 0.96     | 0.48      | 0.58     | 1.30      | 0.98      |
|                     | Insolubility Index 24°C (mL) | 0.25      | 0.10     | 0.15     | 0.10      | 0.10     | 0.20      | 0.20      |
|                     | Moisture 102°C (%)           | 2.98      | 2.73     | 3.05     | 3.14      | 2.83     | 3.14      | 3.13      |
|                     | Moisture KF (%)              |           |          | 3.44     | 3.56      | 3.20     | 3.54      | 3.53      |
|                     | Moisture Reference Dryer (%) | 3.12      | 2.84     |          |           |          | 3.23      | 3.23      |
|                     | pH (pH units)                | 6.70      | 6.72     | 6.69     | 6.77      | 6.63     | 6.69      | 6.75      |
|                     | Protein Combustion (%)       |           |          |          |           |          | 24.24     | 23.68     |
|                     | Protein Kjeldahl (%)         | 23.35     | 24.90    |          | 24.86     | 24.90    | 24.23     | 23.56     |
|                     | Titrateable Acidity (%)      | 0.097     | 0.090    | 0.094    | 0.077     | 0.111    | 0.104     | 0.081     |
|                     | WPNI (mg/g SNF)              | 1.2       | 3.7      | 2.2      | 3.7       | 2.7      | 3.0       | 2.0       |

**Reference Material: Milk Protein Concentrate - MPC42**

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

**QC Material: Milk Protein Concentrate - MPC42**

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

**Reference Material: Milk Protein Concentrate - MPC70**

|                                         |                                  |          |
|-----------------------------------------|----------------------------------|----------|
| <b>Matrix: Milk Protein Concentrate</b> | <b>Product ID</b>                | 754-C-1  |
|                                         | <b>Expiry Date</b>               | 4 Mar 23 |
|                                         | <b>Sample Size</b>               | 80g      |
|                                         | <b>Ash (%)</b>                   | 7.14     |
|                                         | <b>Fat RG (%)</b>                | 1.10     |
|                                         | <b>Moisture 102°C (%)</b>        | 4.77     |
|                                         | <b>pH 5% Solution (pH units)</b> | 7.00     |
|                                         | <b>Protein Kjeldahl (%)</b>      | 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  | 783-C-1   |
|----------------------------------|---------------------------|----------|-----------|
|                                  | Expiry Date               | 9 Feb 23 | 15 Nov 23 |
|                                  | Sample Size               | 80g      | 80g       |
|                                  |                           |          |           |
|                                  | Ash (%)                   |          | 7.14      |
|                                  | Fat SBR (%)               | 1.17     | 1.20      |
|                                  | Lactose (%)               | 9.66     | 8.57      |
|                                  | pH 5% Solution (pH units) | 7.03     | 7.04      |

**QC Material: Milk Protein Concentrate - MPC80**

| Matrix: Milk Protein Concentrate | Product ID                | 12715-QC | 13715-QC  |
|----------------------------------|---------------------------|----------|-----------|
|                                  | Process Run               | PR10074  | PR10411   |
|                                  | Expiry Date               | 9 Feb 23 | 15 Nov 23 |
|                                  | Sample Size               | 80g      | 80g       |
|                                  | Ash (%)                   | 6.99     | 7.12      |
|                                  | Fat SBR (%)               | 1.18     | 1.18      |
|                                  | Lactose (%)               | 9.37     | 8.49      |
|                                  | Moisture 102°C (%)        | 5.59     | 5.66      |
|                                  | pH 5% Solution (pH units) | 7.02     | 7.05      |
|                                  | Protein Kjeldahl (%)      | 77.35    | 77.96     |
|                                  | WPNI (mg/g)               |          | 0.4       |

**Reference Material: Milk Protein Concentrate - MPC85**

| Matrix: Milk Protein Concentrate | Product ID                | 700-C-1   | 784-C-1  |
|----------------------------------|---------------------------|-----------|----------|
|                                  | Expiry Date               | 17 Jan 23 | 9 May 23 |
|                                  | Sample Size               | 80g       | 80g      |
|                                  | Ash (%)                   |           | 6.73     |
|                                  | Fat SBR (%)               | 1.41      | 1.35     |
|                                  | Lactose (%)               | 3.33      |          |
|                                  | Moisture 102°C (%)        |           | 5.83     |
|                                  | pH 5% Solution (pH units) | 7.12      | 6.98     |
|                                  | Protein Kjeldahl (%)      | 83.00     | 83.17    |

**QC Material: Milk Protein Concentrate - MPC85**

| Matrix: Milk Protein Concentrate | Product ID                | 12716-QC  | 13713-QC |
|----------------------------------|---------------------------|-----------|----------|
|                                  | Process Run               | PR9712    | PR10411  |
|                                  | Expiry Date               | 17 Jan 23 | 9 May 23 |
|                                  | Sample Size               | 80g       | 80g      |
|                                  | Ash (%)                   | 6.74      | 6.74     |
|                                  | Fat SBR (%)               | 1.41      | 1.35     |
|                                  | Lactose (%)               | 3.23      | 2.92     |
|                                  | Moisture 102°C (%)        | 5.70      | 5.82     |
|                                  | pH 5% Solution (pH units) | 7.11      | 6.98     |
|                                  | Protein Kjeldahl (%)      | 83.03     | 83.28    |
|                                  | WPNI (mg/g)               | 14.8      | 1.9      |

**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**

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

**Reference Material: Vitamin Milk Powders - Instant SMP**

|                                     |                             |           |
|-------------------------------------|-----------------------------|-----------|
| <b>Matrix: Vitamin Milk Powders</b> | <b>Product ID</b>           | 766-C-1   |
|                                     | <b>Expiry Date</b>          | 30 Aug 23 |
|                                     | <b>Sample Size</b>          | 30g       |
|                                     | <b>Vitamin A (µg/100gm)</b> | 1005      |
|                                     | <b>Vitamin C (mg/100g)</b>  | 11.8      |

**QC Material: Vitamin Milk Powders - Instant SMP**

|                                             |                             |           |
|---------------------------------------------|-----------------------------|-----------|
| <b>Matrix:<br/>Vitamin Milk<br/>Powders</b> | <b>Product ID</b>           | 12727-QC  |
|                                             | <b>Process Run</b>          | PR10289   |
|                                             | <b>Expiry Date</b>          | 30 Aug 23 |
|                                             | <b>Sample Size</b>          | 30g       |
|                                             | <b>Vitamin A (µg/100gm)</b> | 997       |
|                                             | <b>Vitamin C (mg/100g)</b>  | 11.3      |
|                                             | <b>Vitamin D (µg/100gm)</b> | 6.1       |

**Reference Material: Vitamin Milk Powders - Instant WMP**

|                                             |                             |           |          |           |          |
|---------------------------------------------|-----------------------------|-----------|----------|-----------|----------|
| <b>Matrix:<br/>Vitamin Milk<br/>Powders</b> | <b>Product ID</b>           | 720-C-1   | 732-C-1  | 760-C-1   | 780-C-1  |
|                                             | <b>Expiry Date</b>          | 23 Feb 23 | 3 May 23 | 30 Aug 23 | 2 Nov 23 |
|                                             | <b>Sample Size</b>          | 30g       | 30g      | 30g       | 30g      |
|                                             | <b>Vitamin A (µg/100gm)</b> | 396       | 413      | 415       | 930      |
|                                             | <b>Vitamin C (mg/100g)</b>  | 72.8      | 73.6     | 72.0      | 64.0     |

**QC Material: Vitamin Milk Powders - Instant WMP**

|                                             |                             |          |           |          |
|---------------------------------------------|-----------------------------|----------|-----------|----------|
| <b>Matrix:<br/>Vitamin Milk<br/>Powders</b> | <b>Product ID</b>           | 12726-QC | 13733-QC  | 13735-QC |
|                                             | <b>Process Run</b>          | PR10074  | PR10289   | PR10411  |
|                                             | <b>Expiry Date</b>          | 3 May 23 | 30 Aug 23 | 2 Nov 23 |
|                                             | <b>Sample Size</b>          | 30g      | 30g       | 30g      |
|                                             | <b>Vitamin A (µg/100gm)</b> | 422      | 420       | 929      |
|                                             | <b>Vitamin C (mg/100g)</b>  |          | 71.7      | 63.3     |
|                                             | <b>Vitamin D (µg/100gm)</b> |          | 6.3       |          |

**QC Material: Whey Powder - Whey Powder**

|                                    |                                     |          |
|------------------------------------|-------------------------------------|----------|
| <b>Matrix:<br/>Whey<br/>Powder</b> | <b>Product ID</b>                   | 12994-QC |
|                                    | <b>Process Run</b>                  | PR10020  |
|                                    | <b>Expiry Date</b>                  | 5 Nov 24 |
|                                    | <b>Sample Size</b>                  | 80g      |
|                                    | <b>Ash (%)</b>                      | 8.17     |
|                                    | <b>Fat RG (%)</b>                   | 1.02     |
|                                    | <b>Insolubility Index 24°C (mL)</b> | 0.10     |
|                                    | <b>Moisture 102°C (%)</b>           | 1.60     |
|                                    | <b>pH (pH units)</b>                | 6.78     |
|                                    | <b>Protein Kjeldahl (%)</b>         | 16.68    |
|                                    | <b>Salt (%)</b>                     | 2.48     |
|                                    | <b>Titrateable Acidity (%)</b>      | 0.060    |

**Reference Material: Whey Protein Concentrate - WPC80 (Cheese)**

|                                                     |                                  |           |           |
|-----------------------------------------------------|----------------------------------|-----------|-----------|
| <b>Matrix:<br/>Whey<br/>Protein<br/>Concentrate</b> | <b>Product ID</b>                | 742-C-1   | 788-C-1   |
|                                                     | <b>Expiry Date</b>               | 22 Aug 23 | 22 Feb 24 |
|                                                     | <b>Sample Size</b>               | 80g       | 80g       |
|                                                     | <b>Ash (%)</b>                   |           | 3.15      |
|                                                     | <b>Fat SBR (%)</b>               | 3.8       | 4.5       |
|                                                     | <b>Lactose (%)</b>               | 7.4       | 5.3       |
|                                                     | <b>Moisture 102°C (%)</b>        | 4.39      | 4.57      |
|                                                     | <b>pH 5% Solution (pH units)</b> | 6.71      |           |
|                                                     | <b>Protein Kjeldahl (%)</b>      | 78.95     | 80.26     |

**QC Material: Whey Protein Concentrate - WPC80 (Cheese)**

| Matrix:<br>Whey<br>Protein<br>Concentrate | Product ID                   | 12733-QC  | 13745-QC  |
|-------------------------------------------|------------------------------|-----------|-----------|
|                                           | Process Run                  | PR10109   | PR10495   |
|                                           | Expiry Date                  | 22 Aug 23 | 22 Feb 24 |
|                                           | Sample Size                  | 80g       | 80g       |
|                                           | Ash (%)                      | 3.24      | 3.09      |
|                                           | Fat SBR (%)                  | 3.8       | 4.5       |
|                                           | Insolubility Index 24°C (mL) | 0.20      | 0.15      |
|                                           | Lactose (%)                  | 7.3       | 4.8       |
|                                           | Moisture 102°C (%)           | 4.42      | 4.57      |
|                                           | pH 5% Solution (pH units)    | 6.68      | 6.83      |
|                                           | Protein Kjeldahl (%)         | 79.07     | 80.32     |

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

| Matrix:<br>Whey<br>Protein<br>Concentrate | Product ID                | 787-C-1   |
|-------------------------------------------|---------------------------|-----------|
|                                           | Expiry Date               | 19 Mar 24 |
|                                           | Sample Size               | 80g       |
|                                           | Ash (%)                   | 3.43      |
|                                           | Fat SBR (%)               | 3.6       |
|                                           | Lactose (%)               | 4.9       |
|                                           | Moisture 102°C (%)        | 5.20      |
|                                           | pH 5% Solution (pH units) | 6.67      |
|                                           | Protein Kjeldahl (%)      | 79.94     |

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

|                                                   |                                     |           |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Matrix:</b><br><b>Whey Protein Concentrate</b> | <b>Product ID</b>                   | 13747-QC  |
|                                                   | <b>Process Run</b>                  | PR10495   |
|                                                   | <b>Expiry Date</b>                  | 19 Mar 24 |
|                                                   | <b>Sample Size</b>                  | 80g       |
|                                                   | <b>Ash (%)</b>                      | 3.41      |
|                                                   | <b>Fat SBR (%)</b>                  | 3.6       |
|                                                   | <b>Insolubility Index 24°C (mL)</b> | 0.10      |
|                                                   | <b>Lactose (%)</b>                  | 4.9       |
|                                                   | <b>Moisture 102°C (%)</b>           | 5.21      |
|                                                   | <b>pH 5% Solution (pH units)</b>    | 6.66      |
|                                                   | <b>Protein Kjeldahl (%)</b>         | 80.04     |
|                                                   |                                     |           |

**Reference Material: Whey Protein Concentrate - WPC80 (Mineral Acid)**

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

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

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

