

# Canadian Grade Compendium: Volume 4 – Dairy Products

## Dairy Product Grade Requirements

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### Grades and Grade Names

1. (1) The grade and grade name for butter, calorie-reduced butter, dairy spread, light butter or lite butter, whey butter and cheddar cheese is Canada 1 (see [Volume 9, Import Grade Requirements](#) for grade names used for imported dairy products).
- (2) The grades and grade names for dry milk products are Canada 1 and Canada 2.
2. (1) If the foods set out in section 1 are graded and the grade name is applied to the food, the grade name must be displayed as shown in the [schedule of dairy product grade names](#).
- (2) The figures in the [schedule of dairy product grade names](#), referred to in subsection (1) may be white, or any uniform colour.

### Grade Requirements for Butter and Butter Products

3. Butter, calorie-reduced butter, dairy spread, light butter or lite butter and whey butter graded Canada 1 must have
  - (a) typical and desirable flavour, and in the case of cultured butter, slightly acidulous;
  - (b) smooth texture;
  - (c) firm body;
  - (d) any moisture in the product reasonably well incorporated;
  - (e) uniform colour that is characteristic of the product; and
  - (f) salt that is dissolved, if it is added to the product.

### Grade Requirements for Cheddar Cheese

4. Cheddar cheese graded Canada 1 must

- (a) have typical and desirable flavour and aroma;
- (b) have reasonably compact and firm body;
- (c) have smooth texture;
- (d) have a clean, smooth and unbroken surface;
- (e) have, except in the case of marbled cheddar cheese, a characteristic uniform colour ; and
- (f) be uniform in size and regular in shape.

## Grade Requirements for Other Dairy Products

5. (1) A dairy product named in the heading of a table to this section graded Canada 1 must

- (a) meet the requirements of the grade Canada 1 as set out in that table;
- (b) be uniform in composition and colour;
- (c) be free from hard lumps;
- (d) be white or cream in colour or, in the case of whey powder, acid-type whey powder and a combination of skim milk powder and whey powder, be light in colour;
- (e) be wholly free from black or brown particles visible to the naked eye except in the case of whey powder, acid-type whey powder and a combination of skim milk powder and whey powder, which must be substantially free from brown or black particles visible to the naked eye;
- (f) when reconstituted, have unobjectionable flavour and odour, except in the case of whey powder, acid-type whey powder and a combination of skim milk powder and whey powder, which may have a slightly cooked or slightly scorched flavour and odour; and
- (g) not contain a pH adjusting agent, except in the case of acid-type whey powder.

(2) A dairy product named in the heading of a table to this section that is graded Canada 2 must meet

- (a) the requirements of the grade Canada 2 as set out in that table; and
- (b) the requirements set out in subsection (1) other than paragraph (1) (a), except that its flavour and odour, when reconstituted, may lack freshness.

**Table 1 – Skim Milk Powder (Spray-Dried)**

| <b>Grade Requirements</b>                                                                                       |  | <b>Canada 1</b> | <b>Canada 2</b> |
|-----------------------------------------------------------------------------------------------------------------|--|-----------------|-----------------|
| Maximum Milk fat                                                                                                |  | 1.2%            | 1.29%           |
| Maximum Moisture                                                                                                |  | 4.0%            | 5.0%            |
| Minimum Titratable Acidity                                                                                      |  | 0.11%           | 0.11%           |
| Maximum Titratable Acidity                                                                                      |  | 0.15%           | >0.15%          |
| Maximum Solubility Index                                                                                        |  | 1.0 mL          | 2.0 mL          |
| Maximum Solubility Index for skim milk powder that bears the words "High Heat" or the abbreviation "High Temp." |  | 2.0 mL          | 2.5 mL          |

**Table 1 – Skim Milk Powder (Spray-Dried)**

| <b>Grade Requirements</b>    |  | <b>Canada 1</b> | <b>Canada 2</b> |
|------------------------------|--|-----------------|-----------------|
| Maximum Standard Plate Count |  | 50,000/g        | 100,000/g       |
| Maximum Coliform organisms   |  | 10/g            | 10/g            |
| Maximum Sediment Disc        |  | 2<br>(15.0 mg)  | 3<br>(22.5 mg)  |

**Table 2 – Skim Milk Powder (Instant Process)**

| <b>Grade Requirements</b> |  | <b>Canada 1</b> | <b>Canada 2</b> |
|---------------------------|--|-----------------|-----------------|
| Maximum Milk fat          |  | 1.2%            | 1.29%           |
| Maximum Moisture          |  | 5.0%            | 5.0%            |

**Table 2 – Skim Milk Powder (Instant Process)**

| <b>Grade Requirements</b>    |  | <b>Canada 1</b> | <b>Canada 2</b> |
|------------------------------|--|-----------------|-----------------|
| Minimum Titratable Acidity   |  | 0.11%           | 0.11%           |
| Maximum Titratable Acidity   |  | 0.15%           | >0.15%          |
| Maximum Solubility Index     |  | 1.0 mL          | 2.0 mL          |
| Maximum Standard Plate Count |  | 50,000/g        | 100,000/g       |
| Maximum Coliform organisms   |  | 10/g            | 10/g            |
| Maximum Sediment Disc        |  | 2<br>(15.0 mg)  | 3<br>(22.5 mg)  |

**Table 3 – Partly Skimmed Milk in Powder Form (Spray-Dried)**

| Grade Requirements                                                                                                                |          |           |
|-----------------------------------------------------------------------------------------------------------------------------------|----------|-----------|
|                                                                                                                                   | Canada 1 | Canada 2  |
| Minimum Milk fat                                                                                                                  | 1.3%     | 1.3%      |
| Maximum Milk fat                                                                                                                  | 25.9%    | 25.9%     |
| Maximum Moisture                                                                                                                  | 4.0%     | 5.0%      |
| Minimum Titratable Acidity                                                                                                        | 0.11%    | 0.11%     |
| Maximum Titratable Acidity                                                                                                        | 0.15%    | >0.15%    |
| Maximum Solubility Index                                                                                                          | 1.0 mL   | >1.0 mL   |
| Maximum Solubility Index for partly skimmed milk in powder form that bears the words "High Heat" or the abbreviation "High Temp." | 2.0 mL   |           |
| Maximum Standard Plate Count                                                                                                      | 50,000/g | 100,000/g |

| Table 3 – Partly Skimmed Milk in Powder Form (Spray-Dried)                                        |                |                |
|---------------------------------------------------------------------------------------------------|----------------|----------------|
| Grade Requirements                                                                                | Canada 1       | Canada 2       |
| Maximum Coliform organisms                                                                        | 10/g           | 10/g           |
| Maximum Sediment Disc                                                                             | 2<br>(15.0 mg) | 3<br>(22.5 mg) |
| Table 4 – Whole Milk Powder (Spray-Dried)                                                         |                |                |
| Grade Requirements                                                                                | Canada 1       | Canada 2       |
| Minimum Milk fat                                                                                  | 26.0%          | 26.0%          |
| Maximum Moisture                                                                                  | 2.5%           | 5.0%           |
| Maximum Moisture for whole milk powder that has been made more soluble by an instantizing process | 3.5%           |                |

**Table 4 – Whole Milk Powder (Spray-Dried)**

| <b>Grade Requirements</b>    |  | <b>Canada 1</b> | <b>Canada 2</b> |
|------------------------------|--|-----------------|-----------------|
| Minimum Titratable Acidity   |  | 0.11%           | 0.11%           |
| Maximum Titratable Acidity   |  | 0.15%           | >0.15%          |
| Maximum Solubility Index     |  | 1.0 mL          | >1.0 mL         |
| Maximum Standard Plate Count |  | 50,000/g        | 100,000/g       |
| Maximum Coliform organisms   |  | 10/g            | 10/g            |
| Maximum Sediment Disc        |  | 2<br>(15.0 mg)  | 3<br>(22.5 mg)  |

**Table 5 – Whole Milk Powder (Gas Packaged)**

| Grade Requirements                                                                                 |  |  | Canada 1 | Canada 2 |
|----------------------------------------------------------------------------------------------------|--|--|----------|----------|
| Minimum Milk fat                                                                                   |  |  | 26.0%    | 26.0%    |
| Maximum Moisture                                                                                   |  |  | 2.50%    | 5.0%     |
| Maximum Moisture for whole milk powder that has been made more soluble by an instantizing process. |  |  | 3.5%     |          |
| Minimum Titratable Acidity                                                                         |  |  | 0.11%    | 0.11%    |
| Maximum Titratable Acidity                                                                         |  |  | 0.15%    | >0.15%   |
| Maximum Solubility Index                                                                           |  |  | 1.0 mL   | >1.0 mL  |
| Maximum Standard Plate Count                                                                       |  |  | 30,000/g | 50,000/g |
| Maximum Coliform organisms                                                                         |  |  | 10/g     | 10/g     |

**Table 5 – Whole Milk Powder (Gas Packaged)**

| Grade Requirements                                                                                                       | Canada         |                |
|--------------------------------------------------------------------------------------------------------------------------|----------------|----------------|
|                                                                                                                          | Canada 1       | Canada 2       |
| Maximum Sediment Disc                                                                                                    | 2<br>(15.0 mg) | 3<br>(22.5 mg) |
| Maximum Oxygen, calculated to atmospheric pressure. This determination is to be made 7-10 days after final gas packaging | 3.0%           | 3.0%           |

**Table 6 – Buttermilk Powder (Spray-Dried)**

| Grade Requirements | Canada   |          |
|--------------------|----------|----------|
|                    | Canada 1 | Canada 2 |
| Minimum Milk fat   | 2.0%     | <2.0%    |
| Maximum Milk fat   | 12.0%    | 12.0%    |
| Maximum Moisture   | 4.0%     | 5.0%     |

**Table 6 – Buttermilk Powder (Spray-Dried)**

| <b>Grade Requirements</b>  |  | <b>Canada 1</b> | <b>Canada 2</b> |
|----------------------------|--|-----------------|-----------------|
| Minimum Titratable Acidity |  | 0.08%           | 0.08%           |
| Maximum Titratable Acidity |  | 0.18%           | >0.18%          |
| Maximum Solubility Index   |  | 1.25 mL         | >1.25 mL        |
| Maximum Bacteria           |  | 50,000/g        | 200,000/g       |
| Maximum Coliform organisms |  | 10/g            | 10/g            |
| Maximum Sediment Disc      |  | 3<br>(22.5 mg)  | 4<br>(32.5 mg)  |

**Table 7 – Whey Powder (Spray-Dried)**

| Grade Requirements                               |  | Canada 1       | Canada 2       |
|--------------------------------------------------|--|----------------|----------------|
| Maximum Milk fat                                 |  | 1.2%           | >1.2%          |
| Maximum Moisture                                 |  | 4.5%           | 5.0%           |
| Maximum Moisture for non-hygroscopic whey powder |  | 5.0%           |                |
| Maximum Bacteria                                 |  | 50,000/g       | 200,000/g      |
| Maximum Coliform organisms                       |  | 10/g           | 10/g           |
| Maximum Sediment Disc                            |  | 2<br>(15.0 mg) | 3<br>(22.5 mg) |

| Table 8 – Acid-Type Whey Powder (Spray-Dried) |          |          |
|-----------------------------------------------|----------|----------|
| Grade Requirements                            |          | Canada 2 |
|                                               | Canada 1 |          |

**Table 8 – Acid-Type Whey Powder (Spray-Dried)**

| <b>Grade Requirements</b>                        |  | <b>Canada 1</b> | <b>Canada 2</b> |
|--------------------------------------------------|--|-----------------|-----------------|
| Maximum Milk fat                                 |  | 1.2%            | >1.2%           |
| Maximum Moisture                                 |  | 4.5%            | 5.0%            |
| Maximum Moisture for non-hygroscopic whey powder |  | 5.0%            |                 |
| Minimum Titratable Acidity                       |  | 0.30%           | 0.30%           |
| Maximum Bacteria                                 |  | 50,000/g        | 200,000/g       |
| Maximum Coliform organisms                       |  | 10/g            | 10/g            |
| Maximum Sediment Disc                            |  | 2<br>(15.0 mg)  | 3<br>22.5 mg)   |

**Table 9 – A Combination of Skim Milk Powder and Whey Powder (Spray-dried)**

| <b>Grade Requirements</b>                                                                                                                              |                 |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
|                                                                                                                                                        | <b>Canada 1</b> | <b>Canada 2</b> |
| Maximum Milk fat                                                                                                                                       | 1.2%            | >1.2%           |
| Maximum Moisture                                                                                                                                       | 4.2%            | 5.0%            |
| Minimum Titratable Acidity                                                                                                                             | 0.11%           | 0.11%           |
| Minimum Titratable Acidity if the whey used comes from the manufacture of swiss cheese, and is labelled to indicate that the whey is from swiss cheese | 0.09%           | 0.09%           |
| Maximum Titratable Acidity                                                                                                                             | 0.16%           | >0.16%          |
| Maximum Bacteria                                                                                                                                       | 50,000/g        | 200,000/g       |

| Table 9 – A Combination of Skim Milk Powder and Whey Powder (Spray-dried) |                |                |
|---------------------------------------------------------------------------|----------------|----------------|
| Grade Requirements                                                        | Canada 1       | Canada 2       |
| Maximum Coliform organisms                                                | 10/g           | 10/g           |
| Maximum Sediment Disc                                                     | 2<br>(15.0 mg) | 3<br>(22.5 mg) |

  

| Table 10 – Edible Casein |          |          |
|--------------------------|----------|----------|
| Grade Requirements       | Canada 1 | Canada 2 |
| Maximum Milk fat         | 1.5%     | >1.5%    |
| Maximum Moisture         | 10.0%    | >10.0%   |

| Table 10 – Edible Casein    |                |                  |  |
|-----------------------------|----------------|------------------|--|
| Grade Requirements          | Canada 1       | Canada 2         |  |
| Minimum Titratable Acidity  | 0.20%          | >0.20%           |  |
| Maximum Bacteria            | 50,000/g       | 100,000/g        |  |
| Maximum Coliform organisms  | 10/g           | 10/g             |  |
| Maximum Sediment Disc       | 2<br>(15.0 mg) | >2<br>(>15.0 mg) |  |
| Minimum Protein (dry basis) | 95%            | 90%              |  |

| Table 11 – Edible Caseinates (Spray Dried) |          |          |  |
|--------------------------------------------|----------|----------|--|
| Grade Requirements                         | Canada 1 | Canada 2 |  |

**Table 11 – Edible Caseinates (Spray Dried)**

| <b>Grade Requirements</b>                              |                 |                  |
|--------------------------------------------------------|-----------------|------------------|
|                                                        | <b>Canada 1</b> | <b>Canada 2</b>  |
| Maximum Milk fat                                       | 2.0 % dry basis | >2.0 % dry basis |
| Maximum Moisture                                       | 5.0 %           | >5.0 %           |
| Minimum Titratable Acidity                             | 0.20 %          | >0.20 %          |
| Maximum Bacteria                                       | 50,000/g        | 100,000/g        |
| Maximum Coliform organisms                             | 10/g            | 10/g             |
| Maximum Sediment Disc                                  | 3<br>(22.5 mg)  | >3<br>(>22.5 mg) |
| Minimum Protein (dry basis)                            | 88%             | < 88%            |
| Maximum pH for calcium and magnesium edible caseinates | 7.5             | > 7.5            |

| Table 11 – Edible Caseinates (Spray Dried) |  |          |          |
|--------------------------------------------|--|----------|----------|
| Grade Requirements                         |  | Canada 1 | Canada 2 |
| Maximum pH for other edible caseinates     |  | 7.0      | > 7.0    |

## Schedule – Dairy Product Grade Names



