

Australian Standard[®]

AS 2300.1.2.2—2008

Methods of chemical and physical testing for the dairying industry

Method 1.2.2: General methods and principles—Determination of nitrogen—Nitrogen fractions from milk

PREFACE

This Standard was prepared by the Standards Australia Committee FT-024, Food Products and Subcommittee FT-024-05, Dairy Products to supersede AS 2300.1.2.2—1988.

The Committee did not recommend the adoption of ISO 8968-4 and ISO 8968-5, because these two ISO Standards do not cover all four fractions of nitrogen in milk. This Standard covers all four fractions of milk, i.e: non-protein nitrogen, non-casein nitrogen, casein nitrogen and non-casein protein nitrogen, which are required for an Australian Standard.

After a periodic review, the Committee recommended this new edition. This edition confirms the method without technical changes, but updates the referenced documents and reflects the current editorial style and includes a clause on uncertainty measurement.

AS 2300 comprises a series of methods and related Standards for chemical and physical testing of milk and dairy products, including the preparation of samples for testing.

Standards in the AS 2300 series are divided into categories according to type of product to be tested, as follows:

AS

- 2300.1 General methods and principles
- 2300.2 Liquid milks
- 2300.4 Dried milk and dried milk products
- 2300.5 Condensed milk
- 2300.6 Cheese
- 2300.7 Butter
- 2300.8 Anhydrous milk fat
- 2300.9 Analysis of ice-cream and frozen milk products
- 2300.10 Caseins, caseinates and coprecipitates
- 2300.11 Cultured milk products

METHOD

1 SCOPE

This Standard sets out procedures for obtaining various fractions from milk and determining the following:

- (a) Non-protein nitrogen.
- (b) Non-casein nitrogen.
- (c) Casein nitrogen.
- (d) Non-casein protein nitrogen.

2 APPLICATION

The methods are applicable to milk, skimmed milk and recombined or reconstituted milk.

3 REFERENCED DOCUMENT

The following documents are referred to in this Standard.

AS

2300 Methods of chemical and physical testing for the dairy industry

2300.1.2.1 Method 1.2.1: General methods and principles – Determination of nitrogen—Reference Kjeldahl method.

AS/NZS

2243 Safety in laboratories

2243.2 Part 2: Chemical aspects

WARNING: THE USE OF THIS STANDARD MAY INVOLVE THE USE OF HAZARDOUS MATERIALS, OPERATIONS, AND EQUIPMENT. THIS STANDARD DOES NOT PURPORT TO ADDRESS ALL THE SAFETY RISKS ASSOCIATED WITH ITS USE. IT IS THE RESPONSIBILITY OF THE USER OF THIS STANDARD TO ESTABLISH APPROPRIATE SAFETY AND HEALTHY PRACTICES AND DETERMINE THE APPLICABILITY OF LOCAL REGULATORY LIMITATIONS PRIOR TO USE. SEE AS/NZS 2243.2 FOR MORE DETAILS REGARDING LABORATORY SAFETY.

4 PRINCIPLE

Milk protein fractions are precipitated from milk by various reagents and the supernatant liquids are filtered. The nitrogen content of the filtrate is determined and, in some cases, the nitrogen content of the precipitate is determined mathematically by difference.

5 REAGENTS

Use only reagents of recognized analytical reagent grade, and freshly distilled water or water of equivalent purity. The following reagents are required:

- (a) Reagents listed in AS 2300.1.2.1.
- (b) Trichloroacetic acid solution, 15%: dissolve 15 g trichloroacetic acid in water and make up to 100 mL.
- (c) Acetic acid solution, 10%: add 10 g glacial acetic acid to 50 mL of water and make up to 100 mL.
- (d) Sodium acetate, 1 molar solution: dissolve 8.203 g anhydrous sodium acetate in water and make up to 100 mL.