Australian Standard®

Methods of chemical and physical testing for the dairying industry

Method 1.5: General methods and principles—Determination of ash

PREFACE

This Standard was prepared by the Standard Australia Committee FT-024, Food Products and Subcommittee FT-024-05, Dairy Products to supersede AS 2300.1.5—1988.

The Committee did not recommend the adoption of ISO 5544:1978 and ISO 5545:1978, as these two Standards are outdated and product types covered are limited.

After a periodic review, the Committee recommended a 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 of 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 a method for the determination of ash in dairy products.

2 APPLICATION

The method is applicable to liquid milks, condensed milk, ice cream and frozen milk products, dried milks, caseins, caseinates, coprecipitates, and yoghurts.

3 REFERENCED DOCUMENT

The following document is referred to in this Standard.

AS
1166 Milk and milk products—Guidance on sampling

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 DEFINTIONS

For the purpose of this Standard the definition below applies.

4.1 Ash

The percentage by mass of residue obtained after thorough ignition using the procedure described.

5 PRINCIPLE

The sample is dried and the residue is charred, usually over a low Bunsen flame. Oxidation is completed in a furnace at 525°C to 550°C (825°C to 850°C for caseins).

6 REAGENTS

The following reagents are required:

(a) *Magnesium acetate solution,* 120 g/L. Dissolve 12 g of hydrated magnesium acetate ($(CH_3COO)_2 Mg.4H_2O$) in water and make up to 100 mL.

NOTE: This solution is required only for the ash determination in acid casein.

(b) *Ethanol*, 95%.

7 APPARATUS

The following apparatus is required:

(a) Platinum or silica dish, diameter approximately 55 mm.

(b) Muffle furnace, the temperature of which can be maintained within the range 525°C to 550°C or 825°C to 850°C.

