Australian Standard®

Methods of chemical and physical testing for the dairying industry

Method 10.7: Caseins, caseinates and coprecipitates—Determination of lactose—Photometric method

PREFACE

This Standard was prepared by the Standards Australia Committee on Chemical Analysis of Dairy Products to supersede the corresponding method given in AS N60—1970, *Methods for the sampling and analysis of acid and rennet casein.* This method is based on International Standard ISO 5548, *Caseins and caseinates—Determination of lactose content—Photometric method.*

METHOD

1 SCOPE This Standard sets out a photometric method for determining the amount of lactose and other soluble carbohydrates in caseins and caseinates containing less than 2.0 percent of total soluble carbohydrates.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
2300	Methods of chemical and physical testing for the dairying industry
2300.10.1	Caseins, caseinates and coprecipitates—General information and preparation of samples
ISO	
5548	Caseins and caseinates — Determination of lactose content—Photometric method

3 PRINCIPLE The casein is precipitated from a solution of the product with acetic acid and sodium acetate at pH 4.6, and filtered off to yield a protein-free solution of the carbohydrates. An aliquot of the filtrate is treated with phenol and concentrated sulfuric acid, producing a colour that is proportional to the amount of carbohydrate present. The carbohydrate content is determined by photometric measurement, at 490 nm, of the intensity of the colour.

4 DEFINITION For the purpose of this Standard, the definition below applies.

Lactose content of caseins and caseinates—the percentage (*m/m*) of total soluble carbohydrates, calculated as anhydrous lactose, determined by the procedure described in this Standard.

5 REAGENTS

5.1 General requirements — Unless otherwise specified, all reagents shall be of analytical reagent grade, and distilled water or water of equivalent purity shall be used.

5.2 Sodium hydrogen carbonate, $NaHCO_3$—for analysis of acid casein.

5.3 Pentasodium triphosphate, $Na_5P_3O_{10}$—for analysis of rennet casein.

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