

Australian Standard™

AS 2300.8.4

Methods of chemical and physical testing for the dairying industry

Method 8.4: Anhydrous milk fat—Determination of free fatty acid

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee FT-010, Chemical Analysis of Dairy Products, to supersede AS 2300.8.4—1983, *Methods of chemical and physical testing for the dairying industry—Part 8.4: Anhydrous milk fat—Determination of free fatty acid*.

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee FT-010. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This edition confirms the method without technical change but updates referenced documents and reflects current editorial style.

METHOD

1 SCOPE

This Standard sets out a method for the determination of the free fatty acid content of anhydrous milk fat.

2 REFERENCED DOCUMENTS

The following document is referred to in this Standard.

AS

2300 Methods of chemical and physical testing for the dairying industry
2300.8.1 Part 8.1: Anhydrous milk fat—General requirements

3 PRINCIPLE

The fat is dissolved in ethanol and titrated with dilute alkali solution. The percentage by mass of free fatty acid is calculated as oleic acid.

4 REAGENTS AND MATERIALS

The following reagents are required and shall be in accordance with AS 2300.8.1.

- (a) 95 percent ethanol, neutralized
- (b) Sodium hydroxide solution, 0.01 mol/L standard solution
- (c) Phenolphthalein indicator, neutral 10 g/L solution in 95 percent ethanol.

5 PROCEDURE

The procedure shall be as follows:

- (a) Prepare the sample as described in AS 2300.8.1.
- (b) Weigh to the nearest 0.01 g approximately 14 g of the sample (*m*) into a 250 mL Erlenmeyer flask.
- (c) Add 150 mL of neutralized 95 percent ethanol. Heat the mixture carefully on a hotplate or a steam bath until the fat has dissolved in the solvent or until the mixture has boiled.
- (d) Add 1.0 mL of the phenolphthalein solution.
- (e) Titrate immediately with the 0.01 mol/L sodium hydroxide solution with constant stirring until a faint pink colour persists for 1 min.

6 CALCULATION

Calculate the percent free fatty acid content from the following formula:

$$\text{Free fatty acid as oleic acid} = \frac{V}{1000} \times \frac{1}{100} \times \frac{282}{1} \times \frac{100}{m} = \frac{0.282V}{m}$$

where

<i>V</i>	=	volume of 0.01 mol/L NaOH required, in millilitres
<i>m</i>	=	mass of the sample of anhydrous milk fat, in grams
282	=	mass of oleic acid equivalent to 1000 mL of 1 mol/L sodium hydroxide solution, in grams

7 TEST REPORT

The report shall include the following:

- (a) The free fatty acid content to the nearest 0.01 percent, as oleic acid.
- (b) Reference to this Australian Standard, i.e. AS 2300.8.4.