

Australian Standard[®]

AS 5013.30—2010

Food microbiology

Method 30: Examination of specific product— Sweetened condensed milks

PREFACE

This Standard was prepared by the Standards Australia Committee FT-024, Food Products and Subcommittee FT-024-01, Food Microbiology (Constituted), to supersede AS/NZS 1766.3.17:1997.

The objectives of this revision are—

- (a) to transfer the procedure to the AS 5013 Series;
- (b) to update the references; and
- (c) to incorporate minor technical variations on the apparatus used in the test technique.

FOREWORD

Sweetened condensed milk is not a sterile product. Its keeping quality depends on its low water activity and low head-space in the package. Contamination may arise from container leakage, unsterile packages or contaminated ingredients. Spoilage may result if the sugar-to-water ratio is too low or the head-space is too great.

METHOD

1 SCOPE

This Standard sets out procedures for the microbiological examination of sweetened condensed milks and recombined sweetened condensed milks, flavoured and unflavoured.

NOTE: The methods are not intended for the examination of long shelf-life dairy products in hermetically sealed containers that may have been produced by the traditional canning process or by UHT processing followed by aseptic packaging.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1166	Milk and milk products—Guidance on sampling

AS

5013 Food microbiology

5013.11.1 Method 11.1: Microbiology of food and animal feeding stuffs—Preparation of test samples, initial suspension and decimal dilutions for microbiological examination—General rules for the preparation of the initial suspension and decimal dilutions

5013.17 Method 17: Milk and milk products—General guidance for the preparation of test samples, initial suspensions and decimal dilutions of microbiological examination

5013.28 Method 28: Examination of specific products—Liquid milks and creams

3 DILUENTS, CULTURE MEDIA AND REAGENTS**3.1 General**

Formulations and instructions for preparing culture media and diluents are given in Appendix A.

3.2 Peptone solution, 0.1% plus 20% sucrose**3.3 Dichloran glycerol 18% (DG18) agar, 75 mL amounts****3.4 Gram stain reagents****3.5 Other diluents, culture media and reagents**

As specified in AS 5013 series.

4 EQUIPMENT**4.1 Sterilization of apparatus**

All equipment shall be sterilized as described in AS 5013 series.

4.2 Scalpel or scissors**4.3 Wide-mouthed jars****4.4 Petri-dishes, 150 mm in diameter****4.5 Opening assembly**

An arrangement to contain any product that may be ejected from a swollen container.

5 LABORATORY SAMPLES**5.1 From bulk product**

Laboratory samples of bulk sweetened condensed milk shall be taken in accordance with AS 1166, each sample being not less than 200 g.

5.2 Retail containers

Laboratory samples shall consist of a sufficient number of unopened retail containers.

6 EXAMINATION OF CONTAINERS BEFORE OPENING

Remove detachable labels and place identifying marks on the containers. Examine all containers for signs of deterioration or defectiveness, faulty seams, leakage of contents, and swelling of the containers. Make a note of any batch markings on the container. Record all observations.

NOTE: Visibly defective containers should be examined separately from non-defective containers, because of the risk of cross-contamination.

7 PREPARATION OF CONTAINERS FOR OPENING

7.1 Non-swollen containers

The procedure shall be as follows:

- (a) Clean the outside of the container with a suitable detergent solution and dry afterwards.
- (b) Mix the contents by inverting and rotating the container several times.
- (c) Swab with 70% ethanol the part of the container to be opened. For cans, pour a little 95% ethanol onto the top of the can and ignite.

7.2 Swollen containers

The procedure shall be as follows:

Clean the outside of the container with a suitable detergent solution and dry afterwards. Proceed as described in Clause 8.2.

8 OPENING OF CONTAINERS

8.1 Non-swollen containers

The procedure shall be as follows:

- (a) *Laminated paper cartons*—Using scissors, cut off a swabbed corner of the carton.
NOTE: If the integrity of the seal of the container is to be investigated, the sample can be withdrawn after piercing with a needle through a swabbed area of the container away from the seal, thus leaving it intact for subsequent testing.
- (b) *Plastic containers with tear-back top*—Lift the tear-tab and pull back across the top sufficiently to allow extraction of the test portion.
NOTE: If the integrity of the seal of the container is to be investigated, the sample can be withdrawn after piercing with a needle through a swabbed area of the container away from the seal, thus leaving it intact for subsequent testing.
- (c) *Cans*—Puncture the centre of the lid using a suitable opener and make a hole of appropriate size.
- (d) *Tubes*—Hold the tube by the screw-cap and immerse approximately half of the lower part of the tube in 70% (v/v) ethanol. Allow to air-dry. The ethanol may be applied by swab if preferred. Using the scalpel or scissors cut off the bottom end of the tube.

8.2 Swollen containers

The procedure shall be as follows:

- (a) Immerse the container for 10 to 15 min in a suitable sanitizer solution and dry with a wad of absorbent cotton.
NOTE: Containers with hard swells should be treated with care.
- (b) Stand the container in a tray.
- (c) Take steps to contain any product that may be ejected from the can.
NOTE: An option is to use an opening assembly which consists of a large autoclavable metal or plastic funnel, the stem of which is plugged with non-absorbent cotton through which is inserted a sharp stainless steel rod. Invert it over the container and carefully pierce the container with the metal rod to release the pressure.
- (d) Proceed as in Clause 8.1, according to the style of container.