

INTERNATIONAL STANDARD

ISO
8262-3

First edition
1987-12-15



INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Milk products and milk-based foods — Determination of fat content by the Weibull-Berntrop gravimetric method (Reference method) —

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Reference number
ISO 8262-3 : 1987 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8262-3 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, in collaboration with the International Dairy Federation (IDF) and the Association of Analytical Chemists (AOAC) and will also be published by these organizations.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Milk products and milk-based foods — Determination of fat content by the Weibull-Berntrop gravimetric method (Reference method) —

Part 3 : Special cases

0 Introduction

This International Standard has been prepared within the framework of producing a series of reference methods, which are harmonized to the greatest possible extent, for the gravimetric determination of the fat content of milk, milk products and milk-based foods. These methods are based on either the Röse-Gottlieb (RG), or the Weibull-Berntrop (WB) or the Schmid-Bondzynski-Ratzlaff (SBR) principle.

For this part of ISO 8262, dealing with milk-based and with liquid, concentrated or dried milk products in poor condition and/or containing insoluble non-milk ingredients, a method based on the WB principle has been chosen because

- a) when a distinct quantity of free fatty acids is present, or when the product contains lumps and/or non-milk ingredients insoluble in ammonia, the extraction of fat is incomplete and thus the RG procedure is not suitable;
- b) a considerable lactose content, giving rise to some ether-extractable compounds in the digestion with acid and thus to too high values for the fat content, makes the SBR procedure unsuitable;
- c) the WB procedure, although also applying an acid digestion, is not adversely affected by these ether-extractable compounds, as the acid digest is filtered and washed, and the dried residue on the filter does not contain compounds that are extractable by light petroleum;
- d) the method described is already used for this purpose in several countries.

The original Weibull method was designed for bread; a considerably modified method, as specified in this International Standard, was developed by Berntrop. This version has found wide application for the determination of fat in many types of food products.

1 Scope and field of application

This part of ISO 8262 specifies the reference method for the determination of the fat content of milk-based and of liquid, concentrated or dried milk products to which the Röse-Gottlieb method is not applicable, viz. those containing distinct quan-

tities of free fatty acids or those which are not completely soluble in ammonia owing to the presence of lumps or non-milk ingredients — such as custards, porridges or certain milk-based products for bakery purposes.

NOTE — Reference Röse-Gottlieb methods for the determination of the fat content of milk, of cream, of evaporated and sweetened condensed milk, and of dried milk products are specified in ISO 1211, ISO 2450, ISO 1737 and ISO 1736 respectively.

The method is also applicable to fresh cheese types, such as cottage cheese and quarg, as well as to fresh cheeses with added fruit, syrup, "muesli", etc. for which the SBR method is not suitable owing to the higher carbohydrate contents and/or extreme inhomogeneity.

NOTE — A reference Schmid-Bondzynski-Ratzlaff method for the determination of the fat content of cheese and processed cheese products having lactose contents below 5 % (*m/m*) of the non-fat solids is specified in ISO 1735.

2 Reference

ISO 707, *Milk and milk products — Methods of sampling*.

3 Definition

fat content: All the substances determined by the method specified in this part of ISO 8262.

It is expressed as a percentage by mass.

4 Principle

Digestion of a test portion by boiling with dilute hydrochloric acid, filtration of the hot digest through a wetted filter paper to retain fatty substances, extraction of the fat from the dried filter paper using *n*-hexane or light petroleum, removal of the solvent by distillation or evaporation and weighing of the substances extracted. (This is usually known as the Weibull-Berntrop principle.)