International Standard 1741

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

Dextrose — Determination of loss in mass on drying — Vacuum oven method

Dextrose cristallisé — Détermination de la perte de masse à la dessiccation — Méthode par étuvage sous pression réduite

First edition — 1980-08-01

UDC 664.162 : 543.81 **Ref. No. ISO 1741-1980 (E)**

Descriptors : carbohydrates, glucose, tests, determination, mass losses, dehydration analysis, stoves (chemistry), low pressure tests.

Price based on 2 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 1741 was developed by Technical Committee ISO/TC 93, *Starch (including derivatives and by-products)*, and was circulated to the member bodies in May 1979.

It has been approved by the member bodies of the following countries :

Australia	Kenya	South Africa, Rep. of
Chile	Libyan Arab Jamahiriya	Spain
France	Netherlands	USA
Germany, F. R.	Poland	USSR
Israel	Romania	Yugoslavia

The member body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

This International Standard cancels and replaces ISO Recommendation R 1741-1970, of which it constitutes a technical revision.

Printed in Switzerland

Dextrose — Determination of loss in mass on drying — Vacuum oven method

1 Scope and field of application

This International Standard specifies a vacuum oven method for the determination of the loss in mass on drying of dextrose.

The method is applicable to anhydrous dextrose and to dextrose monohydrate.

2 Principle

Drying of the test portion in a vacuum oven at 100 °C, at a pressure not exceeding 135 mbar*.

3 Apparatus

3.1 Analytical balance.

3.2 Dish, of metal (inert under the test conditions) or of glass, of diameter approximately 50 mm, provided with a closely fitting lid.

3.3 Electrically heated vacuum oven, capable of being maintained at 100 ± 1 °C, equipped with a calibrated thermometer and an absolute pressure gauge.

The drying oven shall provide uniform heat distribution and shall maintain the reduced pressure for several hours after the vacuum pump is turned off. The oven shelves shall be so constructed and fitted as to ensure good heat transfer to the dishes.

3.4 Vacuum pump, suitable for reducing the pressure in the oven to 135 mbar or less.

3.5 Drying train, consisting of a drying column filled with dried silica gel; the column is connected in series to a gas scrubber containing concentrated sulphuric acid, which is in turn connected to the air inlet of the drying oven.

3.6 Desiccator, containing an efficient desiccant.

4 Procedure

4.1 Preparation of the test sample

Mix the sample thoroughly and rapidly by stirring with a spatula in the sample container. If the sample container is too small for this purpose, transfer the entire sample to another pre-dried container of a suitable size to facilitate mixing.

4.2 Preparation of the dish

Place the open dish (3.2) and its lid in the oven (3.3), controlled at 100 °C for 1 h. Allow to cool to room temperature in the desiccator (3.6) and weigh to the nearest 0,000 2 g.

4.3 Test portion

Place about 10 g of anhydrous dextrose or about 5 g of dextrose monohydrate, in the dish (3.2), fit the lid and weigh to the nearest 0,000 2 g.

4.4 Determination

Place the covered dish (3.2) containing the test portion (4.3) in the oven (3.3) maintained at 100 ± 1 °C, remove the lid and leave it in the oven. Leave at the test temperature for 4 h, maintaining the pressure in the oven at not more than 135 mbar. During drying, draw a slow stream of air through the drying train (3.5) into the oven.

After 4 h, shut off the vacuum pump (3.4) and allow air to slowly enter the oven through the drying train until atmospheric pressure is obtained. Before withdrawing the dish from the oven, fit the cover. Place the covered dish in the desiccator (3.6), allow to cool to room temperature, and weigh to the nearest 0,000 2 g.

Do not put more than four dishes in the desiccator (3.6) at the same time.

Carry out two determinations on the same test sample (4.1).

NOTE — If, during or after the test, the material develops a more or less pronounced yellow colour, repeat the test at a lower temperature, and state this in the test report.

* 1 mbar = 0,1 kPa