# International Standard 1742

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# Glucose syrups — Determination of dry matter — Vacuum oven method

*Sirops de glucose — Détermination de la matière sèche — Méthode par étuvage sous pression réduite*

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## Foreword

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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 1742 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 :

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

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

France

This International Standard cancels and replaces ISO Recommendation R 1742-1970, of which it constitutes a technical revision.





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# Glucose syrups — Determination of dry matter — Vacuum oven method

## 1 Scope and field of application

This International Standard specifies a vacuum oven method for the determination of the dry matter in glucose syrups, irrespective of their method of production.

The method is also applicable to dried glucose syrup, solid glucose (starch sugar), glucose syrup containing fructose (including *iso*glucose as defined by the European Community[1]).

## 2 Principle

Drying of a test portion, diluted with water and mixed with kieselguhr to provide a large surface for drying, in a vacuum oven at 70 °C, at a pressure not exceeding 34 mbar*.

## 3 Reagent

The reagent shall be of recognized analytical quality. Distilled water or water of at least equivalent purity shall be used.

**3.1 Diatomaceous earth filter aid (Kieselguhr),** prepared as follows.

Wash a large quantity of kieselguhr several times with water acidified with hydrochloric acid [1 ml of concentrated acid ($\varrho_{20}$ = 1,19 g/ml) per litre of water] by filtration on a Büchner funnel until the washings turn litmus paper red. Repeat the washing, but with water, until the pH value of the washings is equal to or slightly more than 4. Allow the washed kieselguhr to dry in air. Before use, dry it overnight in an oven at 105 °C at atmospheric pressure and store it in a closed container.

## 4 Apparatus

**4.1 Analytical balance**

**4.2 Beaker,** of capacity 100 ml.

**4.3 Dish,** of metal (inert under the test conditions) or of glass, 75 mm deep and 90 mm in diameter, provided with a closely fitting lid.

**4.4 Glass stirring rod,** of length appropriate to the diameter of the dish.

**4.5 Electrically heated vacuum oven,** capable of being maintained at 70 ± 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.

**4.6 Vacuum pump,** suitable for reducing the pressure in the oven to 34 mbar or less.

**4.7 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.

**4.8 Desiccator,** containing an efficient desiccant.

## 5 Procedure

### 5.1 Preparation of the test sample

Mix the laboratory sample well.

### 5.2 Preparation of the dish

Weigh about 30 g of the dried kieselguhr (3.1) into the dish (4.3). Dry the open dish, together with its lid and the stirring rod (4.4), in the oven (4.5) for 5 h at 70 ± 1 °C at a pressure not exceeding 34 mbar. At the end of this period, restore atmospheric pressure in the oven by allowing air to slowly enter through the drying train (4.7). Before removing the dish from the oven, fit the lid and place the stirring rod on it. Place the covered weighing dish and the stirring rod together in the desiccator (4.8), allow to cool for 1 h, and weigh to the nearest 0,001 g.

* 1 mbar = 0,1 kPa

1) JOCE of 28.05.1977, Regulation 1111/77.