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# International Standard



# 5809

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

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## Starches and derived products — Determination of sulphated ash

*Amidons, fécules et produits dérivés — Détermination des cendres sulfatées*

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Descriptors : starches, chemical analysis, determination of sulphated ash.

## 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 5809 was developed by Technical Committee ISO/TC 93, *Starch (including derivatives and by-products)*, and was circulated to the member bodies in February 1982.

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

Austria	Netherlands	South Africa, Rep. of
Egypt, Arab Rep. of	Poland	USA
France	Portugal	USSR
Germany, F.R.	Romania	

No member body expressed disapproval of the document.

# Starches and derived products — Determination of sulphated ash

## 1 Scope and field of application

This International Standard specifies a method for the determination of sulphated ash in starches and derived products.

## 2 References

ISO 1666, *Starch — Determination of moisture content — Oven-drying methods*.<sup>1)</sup>

ISO 1741, *Dextrose — Determination of loss in mass on drying — Vacuum oven method*.

ISO 1742, *Glucose syrups — Determination of dry matter — Vacuum oven method*.

ISO 1743, *Glucose syrup — Determination of dry matter — Refractive index method*.

## 3 Definition

**sulphated ash:** The residue obtained after incineration of the product, according to the method specified in this International Standard.

It is expressed as a percentage by mass either of the product as-received or on the dry basis.

## 4 Principle

Incineration of a test portion, in the presence of sulphuric acid, at a temperature of  $525 \pm 25$  °C.

The sulphuric acid facilitates the destruction of the organic matter and avoids losses by converting the volatile chlorides into non-volatile sulphates.

## 5 Reagents

During the analysis, use only reagents of recognized analytical quality and only distilled water or water of at least equivalent purity.

### 5.1 Sulphuric acid solution.

Add, carefully, 100 ml of concentrated sulphuric acid,  $\rho_{20}$  1,83 g/ml, to 300 ml of water and mix.

### 5.2 Hydrochloric acid solution.

Add, carefully, 100 ml of concentrated hydrochloric acid,  $\rho_{20}$  1,19 g/ml, to 500 ml of water and mix.

## 6 Apparatus

Ordinary laboratory apparatus, and in particular

**6.1 Incineration dish,** of platinum or any other material which does not deteriorate under the test conditions (for example a silica incineration dish), of capacity 100 to 200 ml and with a minimum useful surface of 15 cm<sup>2</sup>.

**6.2 Electric furnace with air circulation,** capable of being controlled at  $525 \pm 25$  °C.

**6.3 Electric hot-plate or gas burner or heating lamp.**

**6.4 Desiccator,** provided with an efficient desiccant.

**6.5 Water bath,** capable of being controlled at 60 to 70 °C.

**6.6 Analytical balance.**

## 7 Procedure

### 7.1 Preparation of the incineration dish

Clean the incineration dish (6.1), whether it is new or used, with boiling hydrochloric acid solution (5.2), then rinse generously with water.

Calcinate the incineration dish for 30 min in the furnace (6.2), controlled at  $525 \pm 25$  °C. Allow to cool to ambient temperature in the desiccator (6.4) and weigh to the nearest 0,000 2 g (the incineration dish should be calcinated to constant mass).

1) Under revision.