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# International Standard



# 8557

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## Aluminium ores — Determination of hygroscopic moisture in analytical samples — Gravimetric method

*Minerais alumineux — Détermination de l'humidité hygroscopique des échantillons pour analyse — Méthode gravimétrique*

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**Descriptors** : minerals and ores, aluminium ores, tests, hygroscopic tests, determination, humidity, gravimetric analysis.

## 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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8557 was prepared by Technical Committee ISO/TC 129, *Aluminium ores*.

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# Aluminium ores — Determination of hygroscopic moisture in analytical samples — Gravimetric method

## 1 Scope and field of application

This International Standard specifies a gravimetric loss of mass method for the determination of hygroscopic moisture in analytical samples of aluminium ores.

The method is applicable to products having hygroscopic moisture contents, expressed as water (H<sub>2</sub>O), in the range 0,1 to 5 % (*m/m*), and shall be used to correct the results obtained for aluminium and loss of mass at 1 075 °C to a dry basis.

NOTE — The hygroscopic moisture can be taken into account for other determinations by using a pre-dried sample prepared in accordance with ISO 8558.

## 2 Reference

ISO 8558, *Aluminium ores — Preparation of pre-dried test samples*.

## 3 Principle

Drying of the test portion in air at approximately 105 °C and recording of the loss of mass.

## 4 Material

**4.1 Desiccant:** activated alumina, magnesium perchlorate or diphosphorus pentoxide.

NOTE — Activated alumina should be freshly activated by heating overnight at 300 ± 10°C.

## 5 Apparatus

Ordinary laboratory apparatus and

**5.1 Weighing bottles,** of glass or metal, of diameter approximately 50 mm.

**5.2 Dishes,** flat bottom, for equilibration of samples with the laboratory atmosphere. The bottom of the dishes shall be about 20 cm<sup>2</sup> in area.

**5.3 Laboratory oven,** capable of being controlled at 105 ± 2 °C.

**5.4 Desiccator.**

## 6 Sampling and samples

### 6.1 Sample

Use an air-dried sample with a particle size of less than 150 µm.

### 6.2 Preparation of the test sample

Take approximately 10 g of the laboratory sample and transfer to a dish (5.2). Spread the sample evenly and allow to equilibrate with the laboratory atmosphere for a minimum of 2 h.

## 7 Procedure

### 7.1 Number of determinations

Carry out the determination in duplicate on each aluminium ore.

### 7.2 Preparation of the weighing bottle

Dry a weighing bottle and lid (5.1) by heating for 1 h in the laboratory oven (5.3), controlled at 105 ± 2 °C. Transfer bottle and lid to the desiccator (5.4), containing a suitable fresh desiccant (4.1), and allow to cool. Weigh to the nearest 0,000 1 g after slightly lifting the lid and quickly replacing it. Record the mass (*m*<sub>1</sub>).

NOTE — A heat sink introduced into the desiccator and comprising a substantial mass of metal may be used to significantly reduce the cooling time.