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IS 1760-1 (1991): Methods of chemical analysis of limestone, dolomite and allied materials, Part 1: Determination of loss on ignition [MTD 13: Ores and Raw Materials]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

चूना पत्थर, डोलोमाइट एवं सम्बद्ध सामग्री का
रासायनिक विश्लेषण

भाग 1 दहन पर क्षति ज्ञात करना

(पहला पुनरीक्षण)

Indian Standard

**CHEMICAL ANALYSIS OF LIMESTONE,
DOLOMITE AND ALLIED MATERIALS**

PART 1 DETERMINATION OF LOSS ON IGNITION

(First Revision)

UDC 553.551 : 543.83

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Methods of Chemical Analysis of Ores, Minerals and Allied Materials for Metallurgical Industry Sectional Committee had been approved by the Metallurgical Engineering Division Council.

IS 1760 was first published in 1962. It covers the determination of different elements in various grades of minerals like limestone, dolomite, calcite and magnesite. It also covers the methods for magnesite refractories. The committee decided to revise this standard into different parts covering determination of each element in a separate part, which on publication would supersede the determination of that element given in IS 1760 : 1962. This Part covers determination of loss on ignition and has been updated on the basis of experience gained during the past. Other parts in the series are as follows:

- Part 2 Determination of silica
- Part 3 Determination of iron oxide, alumina, calcium oxide and magnesia
- Part 4 Determination of carbon dioxide
- Part 5 Determination of chlorides

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

*Indian Standard***CHEMICAL ANALYSIS OF LIMESTONE,
DOLOMITE AND ALLIED MATERIALS****PART 1 DETERMINATION OF LOSS ON IGNITION***(First Revision)***1 SCOPE**

This standard (Part 1) describes the method for determination of loss on ignition in the range from 40 to 50 percent in limestone, dolomite and allied materials.

2 REFERENCE

The IS 2109 : 1982 'Methods of sampling of dolomite, limestone and other allied materials' is necessary adjunct to this standard.

3 SAMPLING

3.1 The sample shall be drawn and prepared in accordance with IS 2109 : 1982.

3.2 Grind 5 to 10 g of the prepared sample drawn under **3.1** so that it passes through IS sieve 15 (100 mesh). Dry to constant mass at $105 \pm 2^\circ\text{C}$ and use it for the purpose of chemical analysis.

4 DETERMINATION OF LOSS ON IGNITION**4.1 Outline of the Method**

The sample is ignited at 1000°C in a muffle

furnace and the loss in weight is determined.

4.2 Procedure

4.2.1 Weigh 1.000 g of the test sample into a previously weighed platinum crucible. Heat gently at first, and then at a gradually increasing temperature. Finally ignite at 900 to 950°C for half an hour and raise the temperature to 1000°C . Keep for about 10 minutes, cool and weigh. Repeat heating, cooling and weighing till constant mass is obtained. Difference in mass represents loss on ignition.

4.3 Calculation

$$\text{Loss on ignition, percent by mass} = \frac{m_1 - m_2}{M} \times 100$$

where

m_1 = mass in g, of the crucible with sample,

m_2 = mass in g, of the crucible with the residue after ignition, and

M = mass in g, of the sample taken.

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