

INTERNATIONAL STANDARD

ISO
9501

First edition
1991-02-01

Metallurgical-grade fluorspar — Determination of total sulfur content — Iodometric method after combustion

*Spaths fluor utilisables dans l'industrie métallurgique — Dosage du
soufre total — Méthode iodométrique après combustion*



Reference number
ISO 9501:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9501 was prepared by Technical Committee ISO/TC 175, *Fluorspar*.

Annexes A and B of this International Standard are for information only.

© ISO 1991

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Metallurgical-grade fluorspar — Determination of total sulfur content — Iodometric method after combustion

1 Scope

This International Standard specifies an iodometric method after combustion for the determination of total sulfur content of metallurgical-grade fluorspar.

This method is applicable to fluorspars having sulfur contents, expressed as S, in the range 0,01 % (*m/m*) to 1,0 % (*m/m*).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*.

ISO 8868:1989, *Fluorspar — Sampling and sample preparation*.

3 Principle

Mixing of the test portion with tungsten(VI) oxide, and heating at 1200 °C in a sealed apparatus. Absorption of the evolved sulfur dioxide, entrained in a stream of nitrogen, in dilute hydrochloric acid solution containing starch and potassium iodide. Titration of the solution continuously during the evolution with a standard volumetric solution of potassium iodate.

4 Reagents and materials

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

4.1 Calcium fluoride (CaF_2), powdered, of high purity (as high as possible), and free from sulfur or having a very low and known sulfur content.

4.2 Tungsten(VI) oxide (WO_3).

4.3 Hydrochloric acid, solution.

Dilute 1 volume of hydrochloric acid, ρ 1,18 g/ml, with 66 volumes of water.

4.4 Potassium iodide, solution about 30 g/l.

4.5 Sulfur, standard solution, corresponding to 5,0 g of S per litre.

Dry a small amount of potassium sulfate (K_2SO_4) by heating in an oven (5.2), set at $105\text{ °C} \pm 2\text{ °C}$, for 2 h. Allow to cool in a desiccator.

Weigh, to the nearest 0,2 mg, 13,587 2 g of the dried potassium sulfate and dissolve in water. Cool, transfer to a 500 ml one-mark volumetric flask, dilute to the mark and mix.

1 ml of this standard solution contains 5,0 mg of S.

4.6 Potassium iodate, standard volumetric solution, $c(\text{KIO}_3) \approx 0,001\text{ mol/l}$.

Weigh, to the nearest 0,2 mg, 0,223 g of dried potassium iodate (KIO_3) and dissolve in water. Cool, transfer to a 1000 ml one-mark volumetric flask, dilute to the mark and mix.

1 ml of this standard volumetric solution is equivalent to about 0,10 mg of S.