

INTERNATIONAL
STANDARD

ISO
9062

Second edition
1992-12-15

**Acid-grade and ceramic-grade fluorspar —
Determination of manganese content —
Periodate spectrometric method**

*Spaths fluor pour la fabrication de l'acide fluorhydrique et spaths fluor
utilisables dans l'industrie céramique — Dosage du manganèse —
Méthode spectrométrique au periodate*



Reference number
ISO 9062:1992(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 9062 was prepared by Technical Committee ISO/TC 175, *Fluorspar*.

This second edition cancels and replaces the first edition (ISO 9062:1989), which has been updated.

© ISO 1992

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

Acid-grade and ceramic-grade fluorspar — Determination of manganese content — Periodate spectrometric method

1 Scope

This International Standard specifies a periodate spectrometric method for the determination of the manganese content of acid-grade and ceramic-grade fluorspar.

The method is applicable to products having manganese contents, expressed as Mn, in the range 0,006 % (*m/m*) to 0,4 % (*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

Decomposition of the test portion in a platinum dish using nitric and perchloric acids. After dilution, oxidation of the manganese in an aliquot portion of the solution to permanganate ion using sodium metaperiodate, and spectrometric measurement of the absorbance maximum at a wavelength of 545 nm.

4 Reagents

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

4.1 Nitric acid, ρ approximately 1,40 g/ml, about 68 % (*m/m*) solution.

4.2 Perchloric acid, about 70 % (*m/m*) solution.

WARNING — Perchloric acid vapour may cause explosions in the presence of ammonia, nitrous fumes or organic matter in general.

4.3 Phosphoric acid, about 85 % (*m/m*) solution.

4.4 Sodium metaperiodate, 50 g/l solution.

4.5 Manganese, standard stock solution corresponding to 1 000 mg of Mn per litre.

Dissolve 0,5 g of pure metallic manganese (> 99,5 % purity) in 20 ml of water and 20 ml of nitric acid (4.1). Add 50 ml of water and boil for 10 min. Leave to cool. Transfer the solution quantitatively to a 500 ml volumetric flask, dilute to the mark with water and mix.

1 ml of this standard stock solution contains 1 000 μg of Mn.

4.6 Manganese, standard solution A corresponding to 100 mg of Mn per litre.

Into a 250 ml volumetric flask, introduce 25,0 ml of the manganese standard stock solution (4.5), dilute to the mark with water and mix.

1 ml of this standard solution contains 100 μg of Mn.