
**Fine ceramics (advanced ceramics,
advanced technical ceramics) — Test
method for conductivity measurement
of ion-conductive fine ceramics —**

**Part 1:
Oxide-ion-conducting solid electrolytes**

*Céramiques techniques — Méthode d'essai pour le mesurage de la
conductivité des céramiques techniques conductrices d'ions —*

Partie 1: Électrolytes solides conducteurs d'ions oxydes



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11894-1 was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

ISO 11894 consists of the following parts, under the general title *Fine ceramics (advanced ceramics, advanced technical ceramics)* — *Test method for conductivity measurement of ion-conductive fine ceramics*:

— Part 1: Oxide-ion-conducting solid electrolytes

Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for conductivity measurement of ion-conductive fine ceramics —

Part 1: Oxide-ion-conducting solid electrolytes

1 Scope

This International Standard describes a test method for the determination of ionic conductivity of oxide-ion-conducting solid electrolytes by the 4-terminal method with alternating current (AC 4-terminal method).

This International Standard applies to solid electrolytes which have oxide ionic transference numbers higher than 0,99. The applicable conductivity range shall be 1 to 1,000 S m⁻¹.

Values expressed in this International Standard are in accordance with the International System of Units (SI).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 80000-1, *Quantities and units — Part 0: General*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 3611, *Geometrical product specifications (GPS) — Dimensional measuring equipment: Micrometers for external measurements — Design and metrological characteristics*

ISO 3599, *Vernier callipers reading to 0,1 and 0,05 mm*

ISO 4287, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 6906, *Vernier callipers reading to 0,02 mm*

ISO 14704, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for flexural strength of monolithic ceramics at room temperature*

ISO 15165, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Classification system*

ISO 18754, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Determination of density and apparent porosity*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

ionic conduction

electrical conduction where ions carry the electrical charges