Fuel cell technologies - Part 6-106: Micro fuel cell power systems - Safety - Indirect Class 8 (corrosive) compounds

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62282-6-106:2024 sisaldab Euroopa standardi EN IEC 62282-6-106:2024 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62282-6-106:2024 consists of the English text of the European standard EN IEC 62282-6-106:2024.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 29.03.2024.	Date of Availability of the European standard is 29.03.2024.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 11.040.40

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62282-6-106

March 2024

ICS 27.070

Supersedes EN 62282-6-100:2010 (partially);
EN 62282-6-100:2010/A1:2012 (partially)

English Version

Fuel cell technologies - Part 6-106: Micro fuel cell power systems - Safety - Indirect Class 8 (corrosive) compounds (IEC 62282-6-106:2024)

Technologies des piles à combustible - Partie 6-106: Systèmes à micropiles à combustible - Sécurité - Composés (corrosifs) indirects de classe 8 (IEC 62282-6-106:2024)

Brennstoffzellentechnologien - Teil 6-106: Mikrobrennstoffzellen-Energiesysteme - Sicherheit - Indirekte Verbindungen der Gefahrgutklasse 8 (ätzend) (IEC 62282-6-106:2024)

This European Standard was approved by CENELEC on 2024-03-22. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 105/1017/FDIS, future edition 1 of IEC 62282-6-106, prepared by IEC/TC 105 "Fuel cell technologies" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62282-6-106:2024.

The following dates are fixed:

•	latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop) 2024-12-22
•	latest date by which the national standards conflicting with the document have to be withdrawn	(dow) 2027-03-22

This document partially supersedes EN 62282-6-100:2010 and all of its amendments and corrigenda (if any).

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

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Endorsement notice

The text of the International Standard IEC 62282-6-106:2024 was approved by CENELEC as a European Standard without any modification.

The bibliographical references listed in the Bibliography of EN IEC 62282-6-101 apply.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62282-6-101	2024	Fuel cell technologies - Part 6-101: Micro fuel cell power systems - Safety - General requirements	EN IEC 62282-6-101	2024

IEC 62282-6-106

Edition 1.0 2024-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fuel cell technologies – Part 6-106: Micro fuel cell power systems – Safety – Indirect Class 8 (corrosive) compounds

Technologies des piles à combustible – Partie 6-106: Systèmes à micropiles à combustible – Sécurité – Composés (corrosifs) indirects de classe 8

IEC 62282-6-106:2024-02(en-fr)

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IEC 62282-6-106

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fuel cell technologies – Part 6-106: Micro fuel cell power systems – Safety – Indirect Class 8 (corrosive) compounds

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CONTENTS

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FUEL CELL TECHNOLOGIES –

Part 6-106: Micro fuel cell power systems – Safety – Indirect Class 8 (corrosive) compounds

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62282-6-106 has been prepared by IEC technical committee 105: Fuel cell technologies. It is an International Standard.

This first edition, together with the other parts of the IEC 62282-6-1XX series, cancels and replaces IEC 62282-6-100:2010 and IEC 62282-6-100:2010/AMD1:2012.

This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 62282-6-100:2010 and IEC 62282-6-100:2010/AMD1:2012:

a) A new structure has been set up: IEC 62282-6-101 covers the general safety requirements common to all fuel types whereas IEC 62282-6-102 and subsequent parts of the IEC 62282-6-1XX series cover particular requirements for individual fuel types.

The text of this International Standard is based on the following documents:

Draft	Report on voting
105/1017/FDIS	105/1025/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 62282 series, published under the general title *Fuel cell technologies*, can be found on the IEC website.

This document is to be used in conjunction with IEC 62282-6-101:2024 and is not to be used as a stand-alone document. This document provides additional requirements specific to corrosive fuel formulations, which apply in addition to the general requirements specified in IEC 62282-6-101:2024. The (sub)clause numbers in this document are aligned with those of IEC 62282-6-101:2024 and are intended to provide additional information and refined requirements, as appropriate.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months from the date of publication.

FUEL CELL TECHNOLOGIES –

Part 6-106: Micro fuel cell power systems – Safety – Indirect Class 8 (corrosive) compounds

1 Scope

This part of IEC 62282 covers micro fuel cell power systems, micro fuel cell power units and fuel cartridges using hydrogen produced from UN Class 8 (corrosive) borohydride formulations as fuel. These systems and units use proton exchange membrane (PEM) fuel cell technologies. The designs include fuel processing subsystems to derive hydrogen gas from the corrosive fuel formulation.

IEC 62282-6-101:2024, Figure 1 is applicable.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 62282-6-101:2024, *Fuel cell technologies – Part 6-101: Micro fuel cell power systems – Safety – General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62282-6-101 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
fuel
corrosive (UN Class 8) formulation of borohydride compounds used as fuel for an indirect PEM micro fuel cell power system

Note 1 to entry: The formulation may contain a non-hazardous activator to facilitate the production of hydrogen, or an inhibitor, such as an alkali metal hydroxide, to modulate or inhibit the production of hydrogen from the corrosive fuel formulation or both. The formulation may be solid or liquid, or may include both solid and liquid components that are combined during fuel processing.

Note 2 to entry: This document only applies to corrosive (UN Class 8) compounds which can be processed to evolve hydrogen gas (e.g. through contact with water, non-hazardous or corrosive aqueous solutions, or an activator, or both).

Note 3 to entry: Guidance on the classification of materials, including mixtures, can be found in the current edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations.