

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fluids for electrotechnical applications – Recycled mineral insulating oils for transformers and switchgear

Fluides pour applications électrotechniques – Huiles minérales isolantes recyclées pour transformateurs et appareillages de connexion





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FLUIDS FOR ELECTROTECHNICAL APPLICATIONS –
RECYCLED MINERAL INSULATING OILS
FOR TRANSFORMERS AND SWITCHGEAR**

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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International Standard IEC 62701 has been prepared by IEC technical committee 10: Fluids for electro technical applications.

This International Standard is in line with IEC 60296 and IEC 60422.

The text of this standard is based on the following documents:

FDIS	Report on voting
10/908/FDIS	10/910/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Health and safety

This International Standard does not purport to address all the safety problems associated with its use. It is the responsibility of the user of the standard to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

The mineral insulating oils which are the subject of this standard should be handled with due regard to personal hygiene. Direct contact with the eyes may cause irritation. In the case of eye contact, irrigation with copious quantities of clean running water should be carried out and medical advice sought. Some of the tests specified in this standard involve the use of processes that could lead to a hazardous situation. Attention is drawn to the relevant standard for guidance.

Environment

This standard is applicable rise to mineral insulating oils, chemicals and used sample containers. The disposal of these items shall be carried out according to the local regulations with regard to the impact on the environment. Every precaution should be taken to prevent release of mineral insulating oil into the environment.

FLUIDS FOR ELECTROTECHNICAL APPLICATIONS – RECYCLED MINERAL INSULATING OILS FOR TRANSFORMERS AND SWITCHGEAR

1 Scope

This International Standard specifies requirements for recycled mineral insulating oils intended for use in transformers, switchgear, and similar electrical equipment in which oil is required for insulation and heat transfer.

These oils are produced by processes employed offsite.

Oils treated and reconditioned on-site are not within the scope of this standard.

Oils with and without additives are within the scope of this standard.

Such oils will have originally been supplied in compliance with a recognized unused mineral insulating oil specification.

This standard does not differentiate between the methods used to recycle mineral insulating oil.

This standard does not apply to mineral insulating oils used as impregnates in cables or capacitors.

For the purpose of this standard the following subclauses of IEC 60296:2012 apply:

- 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9;
- 4.1, 4.3, 4.4;
- 5.1, 5.5;
- 6.1, 6.2, 6.4, 6.5, 6.6, 6.8, 6.9, 6.10, 6.11.1, 6.11.3, 6.11.4, 6.12, 6.14, 6.15, 6.16;
- 7.1.

NOTE Some types of re-refined oils are equivalent to unused oils in terms of performance, in which case IEC 60296 is applicable. This should be stated by the manufacturer.

2 Normative references

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

IEC 60156, *Insulating liquids – Determination of the breakdown voltage at power frequency – Test method*

IEC 60247, *Insulating liquids – Measurement of relative permittivity, dielectric dissipation factor ($\tan \delta$) and d.c. resistivity*

IEC 60296:2012, *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*