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Method of sampling insulating liquids

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/22

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**EN IEC 60475**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

**Method of sampling insulating liquids  
(IEC 60475:2022)**Méthode d'échantillonnage des liquides isolants  
(IEC 60475:2022)Verfahren zur Probennahme von Isolierflüssigkeiten  
(IEC 60475:2022)

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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

**EN IEC 60475:2022 (E)****European foreword**

The text of document 10/1163/FDIS, future edition 3 of IEC 60475, prepared by IEC/TC 10 "Fluids for electrotechnical applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60475:2022.

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) 2023-03-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-06-29

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## Annex ZA (normative)

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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.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60567	2011	Oil-filled electrical equipment - Sampling of gases and analysis of free and dissolved gases - Guidance	EN 60567	2011
IEC 60970	-	Insulating liquids - Methods for counting and sizing particles	EN 60970	-



IEC 60475

Edition 3.0 2022-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Method of sampling insulating liquids**

**Méthode d'échantillonnage des liquides isolants**





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IEC 60475

Edition 3.0 2022-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Method of sampling insulating liquids**

**Méthode d'échantillonnage des liquides isolants**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### METHOD OF SAMPLING INSULATING LIQUIDS

#### FOREWORD

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IEC 60475 has been prepared by IEC technical committee 10: Fluids for electrotechnical applications. It is an International Standard.

This third edition cancels and replaces the second edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of a new Annex C on sampling of oil from bushings, at the request of IEC subcommittee 36A, in order to transfer to IEC 60475 the corresponding contents of IEC TR 61464 relating to oil sampling from bushings;
- b) deletion of NOTE 2 in 4.2.1.2.

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

Draft	Report on voting
10/1163/FDIS	10/1173/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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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- reconfirmed,
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- amended.

## INTRODUCTION

### **General caution, health, safety and environmental protection**

**WARNING** – This document does not purport to address all the safety problems associated with its use. It is the responsibility of the user of this document to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

The insulating oils which are the subject of this document should be handled with due regard to personal hygiene. Direct contact with the eyes can 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 document involve the use of processes that could lead to a hazardous situation. Attention is drawn to the relevant standard for guidance.

This document is applicable to mineral oils and non-mineral oils, chemicals and used sample containers.

Attention is drawn to the fact that some mineral oils in service can still be contaminated to some degree by PCBs. If this is the case, safety countermeasures should be taken to avoid risks to workers, the public and the environment during the life of the equipment, by strictly controlling spills and emissions. The disposal or decontamination of these oils can be subject to regulatory requirements with regard to their impact on the environment. Every precaution should be taken to prevent release of mineral oil and non-mineral oil into the environment.

## METHOD OF SAMPLING INSULATING LIQUIDS

### 1 Scope

This document is applicable to the sampling procedure used for insulating liquids in delivery containers and in electrical equipment such as power and instrument transformers, reactors, bushings, oil-filled cables, oil-filled tank-type capacitors, switchgear and load tap changers (LTCs).

This document applies to liquids the viscosity of which at the sampling temperature is less than 1 500 mm<sup>2</sup>/s (or cSt). It applies to mineral oils and non-mineral oils (such as synthetic esters, natural esters, vegetable oils or silicones).

### 2 Normative references

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IEC 60567:2011, *Oil-filled electrical equipment – Sampling of gases and analysis of free and dissolved gases – Guidance*

IEC 60970, *Insulating liquids – Methods for counting and sizing particles*

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