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Classification of 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. 06/25

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 61039

April 2025

ICS 29.040.10

Supersedes EN 61039:2008

English Version

**Classification of insulating liquids
(IEC 61039:2025)**

Classification des liquides isolants
(IEC 61039:2025)

Klassifizierung der Isolierflüssigkeiten
(IEC 61039:2025)

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Europäisches Komitee für Elektrotechnische Normung

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EN IEC 61039:2025 (E)**European foreword**

The text of document 10/1249/FDIS, future edition 3 of IEC 61039, prepared by TC 10 "Fluids for electrotechnical applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61039:2025.

The following dates are fixed:

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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

- IEC 60836 NOTE Approved as EN 60836
- IEC 60867 NOTE Approved as EN IEC 60867
- IEC 61099 NOTE Approved as EN 61099
- IEC 62770 NOTE Approved as EN IEC 62770
- IEC 63012 NOTE Approved as EN IEC 63012

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60296	-	Fluids for electrotechnical applications - Mineral insulating oils for electrical equipment	EN IEC 60296	-
ISO 2592	-	Petroleum and related products - Determination of flash and fire points - Cleveland open cup method	EN ISO 2592	-
ISO 8681	-	Petroleum products and lubricants -- Method of classification -- Definition of classes	-	-
OECD 301	1992	OECD guidelines for the testing of chemicals - Ready Biodegradability	-	-
ASTM D240	-	Standard test method for heat of combustion of liquid hydrocarbon fuels by bomb calorimeter	-	-



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Edition 3.0 2025-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Classification of insulating liquids

Classification des liquides isolants

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IEC 61039

Edition 3.0 2025-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Classification of insulating liquids

Classification des liquides isolants

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CLASSIFICATION OF INSULATING LIQUIDS

FOREWORD

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IEC 61039 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 2008. This edition constitutes a technical revision.

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

- a) updating of the classification of insulating liquids, taking into account the largest number possible of substances that have, or may have, a possible application in electrical components.

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

Draft	Report on voting
10/1249/FDIS	10/1258/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.

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.

INTRODUCTION

WARNING – Health and safety

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 liquids which are the subject of this document should be handled with due regard to personal hygiene. Direct contact with eyes can cause slight 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.

WARNING – Environment

This document involves insulating liquids, chemicals and used sample containers. The disposal of these items can be subject to regulatory requirements with regard to their impact on the environment.

All insulating liquids that float on water are generally a water hazard, as they reduce oxygen ingress into the water. No liquid, regardless of its classification, can be freely spilled in the environment. The handling of insulating liquids can be subject to regulatory requirements with regard to their impact on the environment. Every precaution should be taken to prevent the release of insulating liquids into the environment.

CLASSIFICATION OF INSULATING LIQUIDS

1 Scope

This document establishes the detailed classification of the N family (insulating liquids) that belongs to class L (lubricants, industrial oils and related products) in accordance with ISO 8681 and ISO 6743-99, affecting product categories that include products derived from petroleum processing, synthetic chemical products and synthetic and natural esters.

This document applies to unused liquids. For liquids in service, additional testing can be required to ensure compliance with this document.

2 Normative references

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IEC 60296, *Fluids for electrotechnical applications – Mineral insulating oils for electrical equipment*

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