

STN	Špecifikácie nepoužitých silikónových izolačných kvapalín na elektrotechnické účely.	STN EN 60836 34 6731
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Specifications for unused silicone insulating liquids for electrotechnical purposes

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. 02/16

Obsahuje: EN 60836:2015, IEC 60836:2015

Oznámením tejto normy sa od 20.08.2018 ruší
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EUROPEAN STANDARD

EN 60836

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 29.040.10

Supersedes EN 60836:2005

English Version

Specifications for unused silicone insulating liquids for electrotechnical purposes (IEC 60836:2015)

Spécifications pour liquides isolants silicones neufs
pour usages électrotechniques
(IEC 60836:2015)

Anforderungen an ungebrauchte Silikonisierflüssigkeiten
für elektrotechnische Anwendungen
(IEC 60836:2015)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 10/961/FDIS, future edition 3 of IEC 60836, prepared by IEC/TC 10 "Fluids for electrotechnical applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60836:2015.

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) 2016-05-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-08-20

This document supersedes EN 60836:2005.

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Endorsement notice

The text of the International Standard IEC 60836:2015 was approved by CENELEC as a European Standard without any modification.

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

IEC 60076-14	NOTE	Harmonized as EN 60076-14.
IEC 60695-1-40	NOTE	Harmonized as EN 60695-1-40.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60156	1995	Insulating liquids - Determination of the breakdown voltage at power frequency - Test method	EN 60156	1995
IEC 60247	-	Insulating liquids - Measurement of relative permittivity, dielectric dissipation factor ($\tan \delta$) and d.c. resistivity	EN 60247	-
IEC 60296	-	Fluids for electrotechnical applications - Unused mineral insulating oils for transformers and switchgear	EN 60296	-
IEC 60475	-	Method of sampling insulating liquids	EN 60475	-
IEC 60628	-	Gassing of insulating liquids under electrical stress and ionization	HD 488 S1	-
IEC 60814	-	Insulating liquids - Oil-impregnated paper and pressboard - Determination of water by automatic coulometric Karl Fischer titration	EN 60814	-
IEC 60944	-	Guide for maintenance of silicone transformer liquids	-	-
IEC 61039	2008	Classification of insulating liquids	EN 61039	2008
IEC 62021-3	-	Insulating liquids - Determination of acidity - Part 3: Test methods for non-mineral insulating oils	EN 62021-3	-
ISO 2211	-	Liquid chemical products - Measurement of colour in Hazen units (platinum-cobalt scale)	-	-
ISO 2592	-	Determination of flash and fire points - Cleveland open cup method	EN ISO 2592	-
ISO 2719	-	Determination of flash point - Pensky-Martens closed cup method	EN ISO 2719	-

EN 60836:2015

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 3016	-	Petroleum products - Determination of pour point	-	-
ISO 3104	-	Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity	EN ISO 3104	-
ISO 3675	-	Crude petroleum and liquid petroleum products - Laboratory determination of density - Hydrometer method	EN ISO 3675	-
ISO 5661	-	Petroleum products - Hydrocarbon liquids - Determination of refractive index	-	-
ISO 12185	-	Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method	EN ISO 12185	-



INTERNATIONAL STANDARD

NORME INTERNATIONALE

Specifications for unused silicone insulating liquids for electrotechnical purposes

Spécifications pour liquides isolants silicones neufs pour usages électrotechniques





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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Specifications for unused silicone insulating liquids for electrotechnical purposes

Spécifications pour liquides isolants silicones neufs pour usages électrotechniques

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATIONS FOR UNUSED SILICONE INSULATING
LIQUIDS FOR ELECTROTECHNICAL PURPOSES**

FOREWORD

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The International Standard IEC 60836 has been prepared by IEC technical committee 10: Fluids for electrotechnical applications.

This third edition cancels and replaces the second edition published in 2005. This edition constitutes a technical revision.

This edition includes the following major technical changes with regard to the second edition:

- a) classification of liquids according to IEC 61039 have been adapted with respect to the latest edition of IEC 61039:2008;
- b) classification of liquids according to IEC 61100:1992 have been removed as IEC 61100 has been withdrawn;
- c) minimum requirements for other silicone liquids for electrotechnical purposes have been added.

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

FDIS	Report on voting
10/961FDIS	10/968/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 website 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.

SPECIFICATIONS FOR UNUSED SILICONE INSULATING LIQUIDS FOR ELECTROTECHNICAL PURPOSES

1 Scope

This International Standard covers specifications and test methods for unused silicone liquids intended for use in transformers and other electrotechnical equipment.

The specified characteristics of silicone transformer liquid classified as L-NTUK-8360300 (in accordance with IEC 61039) are described in Table 1.

Besides the standard transformer applications there are other applications of silicone liquids, such like cable accessories, capacitors, electrical magnets etc. The specified characteristics and minimum requirements for these liquids are described in Table 2.

NOTE Maintenance of used silicone liquid in electrotechnical equipment is covered in a separate publication IEC 60944.

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 60156:1995, *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, *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*

IEC 60475, *Method of sampling insulating liquids*

IEC 60628, *Gassing of insulating liquids under electrical stress and ionization*

IEC 60814, *Insulating liquids – Oil-impregnated paper and pressboard – Determination of water by automatic coulometric Karl Fischer titration*

IEC 60944, *Guide for the maintenance of silicone transformer liquids*

IEC 61039:2008, *Classification of insulating liquids*

IEC 62021-3, *Insulating liquids – Determination of acidity – Part 3: Test methods for non-mineral insulating oils*

ISO 2211, *Liquid chemical products – Measurement of colour in Hazen units (platinum-cobalt scale)*

ISO 2592, *Determination of flash and fire points – Cleveland open cup method*

ISO 2719, *Determination of flash point – Pensky Martens closed cup method*

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ISO 3675, *Crude petroleum and liquid petroleum products – Laboratory determination of density – Hydrometer method*

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