



International
Electrotechnical
Commission

IEC TC10 Fluids for electrotechnical applications

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Status Report to

IEEE/PES Transformer Committee

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TC10 Scope

To prepare product specifications, test methods as well as maintenance and use guides for liquid and gaseous dielectrics. Also to prepare specifications and maintenance and use guides for lubricants and control fluids for steam turbines, generators and control systems as well as to assist in the preparation of test methods for such fluids.

Chair – Ivanka Höhlele-Atanasova, Ph.D. (DE)

Secretary – Massimo Pompili, Ph.D. (IT)



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General Information TC10

- Membership (countries) 42
 - P-Members (Participating) 30
 - O-Members (Observer) 12
- Currently Active MT, PT, WG, AG, ahG 11
- Documents in charge of (TR, TS, IS) 63
 - Under maintenance/in development 11+1
 - IEC/IEEE common documents
 - Organized by national committees
 - 1 voter per national committee
 - Only 2/3 approval needed



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TC10 Plenary Meeting

- Plenary Meeting = Strategy meeting
 - Review projects' progress, update work program
 - Initiate new work item proposals
 - Bi-annual meeting – In person 2019 (Fountainbleau); 2021 (Virtual)
- Last meeting, June 2022 Bled (SLO)
 - Joint meeting with TC14
 - Hybrid meeting – 73 participants (~25 in-person)
 - 3 USNC TAG representatives (2 in-person; 1 virtual)
- Next meeting – April 2024, Rome, IT
- Working Groups meet as necessary



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New/Revised Standards Since June 2022 Plenary

- **IEC 60867 Ed 3.0**; Insulating liquids - Specifications for unused liquids based on synthetic aromatic hydrocarbons; 2022-10



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Terminology for Standards

- **NP – New Work Item Proposal**
- **CD – Committee Draft**
- **CDV – Committee Draft for Vote**
- **FDIS – Final Draft International Standard**



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Standards Currently Under Revision (1)

- **MT22** (David Walker, GB)
 - FDIS - 60422 ED5: Mineral insulating oils in electrical equipment - Supervision and maintenance guidance (David Walker, GB)
- **MT25** (Michel Duval, CA)
 - FDIS - 60567 ED5: Oil-filled electrical equipment - Sampling of gases and analysis of free and dissolved gases – Guidance
- **MT30** (Massimo Pompili, IT)
 - CDV - 60156 ED4: Insulating liquids - Determination of the breakdown voltage at power frequency - Test method
 - CD - TR 61294 ED2: Insulating liquids - Determination of the partial discharge inception voltage (PDIV) - Test procedure



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Standards Currently Under Revision (2)

- **MT36 (Russel Martin, GB)**
 - FDIS - 62770 ED2: Fluids for electrotechnical applications - Unused natural esters for transformers and similar electrical equipment
 - CDV - 61203 ED2: Synthetic organic esters for electrical purposes - Guide for maintenance of transformer esters in equipment
 - CDV - 61039 ED3: Classification of insulating liquids
- **MT42 (Lance Lewand, US)**
 - CD - 60465 ED3: Specification for unused insulating mineral oils for cables with oil ducts
- **MT43 (Patrik Ågren, FI)**
 - CD - 60666 ED3: Detection and determination of specified additives in mineral insulating oils
 - Partially concurrent with ASTM D27.03



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Standards Currently Under Revision (3)

- **WG41 (Yannick Kieffel, FR)**
 - CD - 63359 ED1: Fluids for electrotechnical application: Specifications for the re-use of mixtures of gases alternative to SF₆
 - FDIS - 63360 ED1: Fluids for electrotechnical application: Mixtures of gases alternative to SF₆



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Standards in Development/Deleted

- **WG45 (Ivanka Höhlele-Atanasova, DE)**
 - Interpretation of DGA analysis in natural and synthetic esters
- **JWG46 (Yihua Qian, CN)**
 - Joint with TC14. Retro-filling mineral oil immersed transformers with alternative insulating liquids
- **ahG44 (Fabio Scatiggio, IT)**
 - 61144 ED1.0 Test method for the determination of oxygen index of insulating liquids
 - ahG44 recommended that the standard be deleted



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Future Consideration

- Liquids for electric vehicles (e-traction)
- Liquids for data center cooling (immersion)