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Lubricants, industrial oils and related products (class L) — Family T (Turbines) — Specifications of triaryl phosphate ester turbine control fluids (category ISO-L-TCD)

Lubrifiants, huiles industrielles et produits connexes (classe L) — Famille T (Turbines) — Spécifications des fluides de régulation de turbines à base d'esters de triaryl phosphate (catégorie L-T-CD)

Reference number
ISO 10050:2005(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10050 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 4, *Classifications and specifications*.

Lubricants, industrial oils and related products (class L) — Family T (Turbines) — Specifications of triaryl phosphate ester turbine control fluids (category ISO-L-TCD)

WARNING — The handling and use of products as specified in this International Standard may be hazardous, if suitable precautions are not observed. This International Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies the characteristics of unused triaryl phosphate ester fluids for turbine governor controls and other hydraulic systems in electrical power stations.

NOTE Fluids used in this application are classified under category TCD of ISO 6743-5:—[1].

These fluids are difficult to ignite and show little tendency to propagate flame, but cannot be considered non-flammable. Such fluids should only be filled into systems designed for their use and where recommended by the equipment manufacturer.

Regular maintenance of these fluids is important. Detailed information on their maintenance and associated safety procedures is given in IEC 60978[3] or should be obtained from equipment manufacturers and fluid suppliers.

2 Normative references

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

ISO 760:1978, *Determination of water — Karl Fischer method (General method)*

ISO 2592:2000, *Determination of flash and fire points — Cleveland open cup method*

ISO 3016:1994, *Petroleum products — Determination of pour point*

ISO 3104:1994, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*

ISO 3170:2004, *Petroleum liquids — Manual sampling*

ISO 3448:1992, *Industrial liquid lubricants — ISO viscosity classification*

ISO 3675:1998, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*

ISO 4259:1992, *Petroleum products — Determination and application of precision data in relation to methods of test*

ISO 4406:1999, *Hydraulic fluid power — Fluids — Method for coding the level of contamination by solid particles*

ISO 6072:2002, *Hydraulic fluid power — Compatibility between fluids and standard elastomeric materials*

ISO 6247:1998, *Petroleum products — Determination of foaming characteristics of lubricating oils*

ISO 6614:1994, *Petroleum products — Determination of water separability of petroleum oils and synthetic fluids*

ISO 6619:1988, *Petroleum products and lubricants — Neutralization number — Potentiometric titration method*

ISO 9120:1997, *Petroleum and related products — Determination of air-release properties of steam turbine and other oils — Impinger method*

ISO 11500:1997, *Hydraulic fluid power — Determination of particulate contamination by automatic counting using the light extinction principle*

ISO 12185:1996, *Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method*

ISO 14935:1998, *Petroleum and related products — Determination of wick flame persistence of fire-resistant fluids*

ISO 15597:2001, *Petroleum and related products — Determination of chlorine and bromine content — Wavelength-dispersive X-ray fluorescence spectrometry*

ISO 20823:2003, *Petroleum and related products — Determination of the flammability characteristics of fluids in contact with hot surfaces — Manifold ignition test*

IEC 60247:2004, *Insulating liquids — Measurement of relative permittivity, dielectric dissipation factor (tan* δ*) and d.c. resistivity*

EN 14832:2005, *Petroleum and related products — Determination of the oxidation stability and corrosivity of fire-resistant phosphate ester fluids*

EN 14833:2005, *Petroleum and related products — Determination of the hydrolytic stability of fire-resistant phosphate ester fluids*

3 Composition

These products are organic phosphate esters with the organic constituents consisting entirely of aryl or substituted aryl groups. The composition of commercial fluids is complex and several different chemical types are available.

Additives may be incorporated to improve stability and to reduce foaming. Use of viscosity index improvers is not allowed.

4 Dyes

The use of dyes for identification purposes is allowed, if required.