



SLOVENSKI STANDARD
SIST ISO 8068:2024

01-oktober-2024

Nadomešča:
SIST ISO 8068:2008

Maziva, industrijska olja in sorodni proizvodi (skupina L) - Podskupina T (Turbine)
– Specifikacija za mazalna olja za turbine

Lubricants, industrial oils and related products (class L) — Family T (Turbines) —
Specifications for lubricating oils for turbines

Lubrifiants, huiles industrielles et produits connexes (classe L) — Famille T (Turbines) —
Spécifications pour les huiles lubrifiantes pour turbines

Ta slovenski standard je istoveten z: ISO 8068:2024

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ICS:

75.100	Maziva	Lubricants, industrial oils and related products
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SIST ISO 8068:2024

en,fr



International Standard

ISO 8068

Lubricants, industrial oils and related products (class L) — Family T (Turbines) — Specifications for lubricating oils for turbines

*Lubrifiants, huiles industrielles et produits connexes (classe L) —
Famille T (Turbines) — Spécifications pour les huiles lubrifiantes
pour turbines*

**Third edition
2024-04**

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Published in Switzerland

ISO 8068:2024(en)

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, Subcommittee SC 4, *Classifications and specifications*.

This third edition cancels and replaces the second edition (ISO 8068:2006), which has been technically revised. It also incorporates the Amendment ISO 8068:2006/Amd 1:2019.

The main changes are as follows:

- updating of the environmental requirements for environmentally acceptable products;
- introduction of steam demulsibility for steam and combined cycle single shaft turbine grades;
- precision with respect to the stage of the filterability tests, wet and dry;
- addition of new viscosity grades for TGCH and THCH categories;
- addition of an EP category for TGCH.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 8068:2024(en)**Introduction**

New requirements for steam and gas turbine lubricants have arisen from technological changes including the increased efficiency of turbines, more severe operating conditions (cycling, peaking duty) and the increased use of alternative fuels. In addition, the simultaneous operation of gas and steam turbines with the same lubrication circuit means that lubricants are expected to satisfy the requirements for both steam and gas turbine lubrication.

The growing concern over environmental protection has led to the use of lubricants that show minimum toxicity towards flora and fauna. Lubricants used in hydraulic power plants, showing risks of leakage either on surface or ground water, are of particular concern. Therefore, minimum aquatic toxicity is required for these lubricants. In addition, biodegradability is desired to respect the ecosystem.

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Lubricants, industrial oils and related products (class L) — Family T (Turbines) — Specifications for lubricating oils for turbines

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

1 Scope

This document specifies the minimum requirements for lubricants for turbines, as delivered. It is intended to be used in conjunction with ISO 6743-5.

This document specifies the requirements for a wide variety of lubricants for the lubrication of most types of turbines for power generation, including steam turbines, gas turbines, single shaft combined cycle turbines with common lubrication system and hydraulic turbines. This document does not specify the requirements for lubricants for wind turbines, which are covered in ISO 12925-1.

The following lubricants are considered:

- mineral oils, of either API groups I, II, II+, III, including group III from GTL (gas to liquid) process, and III+. Some API groups II and III are suitable for high temperature gas turbines;
- synthetic lubricants, esters (API group V) and polyalphaolefins (API group IV), intended for high temperature gas turbines;
- synthetic lubricants, esters (API group V) and polyalphaolefins (API group IV), environmentally acceptable for use in hydraulic turbines;
- fire resistant phosphate-ester type lubricants.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Determination of water — Karl Fischer method (General method)*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 2049, *Petroleum products — Determination of colour (ASTM scale)*

ISO 2160, *Petroleum products — Corrosiveness to copper — Copper strip test*

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

ISO 2909, *Petroleum products — Calculation of viscosity index from kinematic viscosity*

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*

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ISO 3170, *Petroleum liquids — Manual sampling*

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

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

ISO 4259-2, *Petroleum and related products — Precision of measurement methods and results — Part 2: Interpretation and application of precision data in relation to methods of test*

ISO 4263-1, *Petroleum and related products — Determination of the ageing behaviour of inhibited oils and fluids — TOST test — Part 1: Procedure for mineral oils*

ISO 4263-3, *Petroleum and related products — Determination of the ageing behaviour of inhibited oils and fluids using the TOST test — Part 3: Anhydrous procedure for synthetic hydraulic fluids*

ISO 4263-4, *Petroleum and related products — Determination of the ageing behaviour of inhibited oils and fluids — TOST test — Part 4: Procedure for industrial gear oils*

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

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

ISO 6296, *Petroleum products — Determination of water — Potentiometric Karl Fischer titration method*

ISO 6341, *Water quality — Determination of the inhibition of the mobility of *Daphnia magna* Straus (Cladocera, Crustacea) — Acute toxicity test*

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

ISO 6618, *Petroleum products and lubricants — Determination of acid or base number — Colour-indicator titration method*

ISO 6743-5, *Lubricants, industrial oils and related products (class L) — Classification — Part 5: Family T (Turbines)*

ISO 7120:1987, *Petroleum products and lubricants — Petroleum oils and other fluids — Determination of rust-preventing characteristics in the presence of water*

ISO 7346-2, *Water quality — Determination of the acute lethal toxicity of substances to a freshwater fish [*Brachydanio rerio* Hamilton-Buchanan (Teleostei, Cyprinidae)] — Part 2: Semi-static method*

ISO 8192, *Water quality — Test for inhibition of oxygen consumption by activated sludge*

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

ISO 9439, *Water quality — Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium — Carbon dioxide evolution test*

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

ISO 12937, *Petroleum products — Determination of water — Coulometric Karl Fischer titration method*

ISO 13226, *Rubber — Standard reference elastomers (SREs) for characterizing the effect of liquids on vulcanized rubbers*

ISO 13357-1, *Petroleum products — Determination of the filterability of lubricating oils — Part 1: Procedure for oils in the presence of water*

ISO 13357-2, *Petroleum products — Determination of the filterability of lubricating oils — Part 2: Procedure for dry oils*