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INTERNATIONAL STANDARD

colour inside

Solar thermal electric plants –
Part 1-6: Silicone-based heat transfer fluids for use in line-focus concentrated solar power applications

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SOLAR THERMAL ELECTRIC PLANTS –

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FOREWORD

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

Draft	Report on voting
117/199/FDIS	117/202/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 http://www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62862 series, published under the general title *Solar thermal electric plants*, can be found on the IEC website.

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- withdrawn, or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.

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SOLAR THERMAL ELECTRIC PLANTS –

Part 1-6: Silicone-based heat transfer fluids for use in line-focus concentrated solar power applications

1 Scope

This part of IEC 62862 specifies the technical requirements (safety and physical parameters), test methods, inspection rules and intervals, sampling, judgment, marking, labelling and accompanying documents, packaging, transportation and storage, recycling and disposal of silicone-based heat transfer fluids (SiHTF) for use in line-focusing solar thermal power plants.

The application of polydimethylsiloxane-based heat transfer fluids for this type of installation is covered in this document. Owing to their chemical nature and composition, the introduction of new test methods to determine the applicability and the thermal stability of SiHTF is included in this document.

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.

IEC TS 62862-1-1, *Solar thermal electric plants – Part 1-1: Terminology*

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

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

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

ISO 3016, *Petroleum and related products from natural or synthetic sources – Determination of pour point*

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

ISO 3405, *Petroleum and related products from natural or synthetic sources – Determination of distillation characteristics at atmospheric pressure*

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

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

ISO 11885, *Water quality – Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)*

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