

Specification for

Unused and reclaimed mineral insulating oils for transformers and switchgear

ICS 29.035.40

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee GEL/10, Fluids for electrotechnical applications, upon which the following bodies were represented:

- British Cable Makers Confederation
- British Lubricants Federation Limited
- Chemical Industries' Association
- Electricity Association
- Environmental Services Association
- Health and Safety Executive
- Institute of Petroleum
- Institution of Electrical Engineers
- London Regional Transport
- Transmission and Distributon Association (BEAMA Limited)

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Foreword

The revision of this British Standard has been prepared by Technical Committee GEL/10 and supersedes BS 148:1984, which is withdrawn. It is based on IEC Publication 296:1982 *Specification for unused mineral insulating oils for transformers and switchgear*, published by the International Electrotechnical Commission (IEC). For ease of cross-reference, the clause numbering of this standard follows that of IEC Publication 296 as far as possible. This standard differs from IEC Publication 296 in specifying limits for:

- i) Water content on delivery;
- ii) Oxidation stability using Method C of BS EN 61125:1993;
- iii) Gassing tendency;
- iv) Polycyclic Aromatics (PCA)
- v) Polychlorinated Biphenyls PCBs;
- vi) Total furans.

The limits for water content continue the UK practice in previous editions of BS 148 whilst the gassing tendency test reflects the change in oil quality which followed the demand for “gas absorbing” oils in the 1970s.

The use of the oxidation test in Method C of BS EN 61125:1993 (formally IEC 813) acknowledges the fact that oils operate under limited oxygen (air) availability in equipment and allows one oxidation test to be used with differing test durations for both oxidation inhibited and uninhibited oil.

Items iv), v) and vi) above are introduced for the first time reflecting changes in the industry with respect to Health and Safety. Additionally, the increasing use of total furfural/furans measurements as an in-service diagnostic tool has prompted the necessity to impose limits on unused oil.

This specification acknowledges UK practice whereby the limiting values for unused mineral insulating oils may also apply to reclaimed mineral insulating oils for transformers and switchgear.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.