IS 13236 : 2013
IEC 60970 : 2007

Indian Standard

INSULATING LIQUIDS — METHODS FOR COUNTING AND SIZING PARTICLES

(First Revision)

1 Scope

This standard describes the sampling procedures and methods for the determination of particle concentration and size distribution.

Three methods are specified. One uses an automatic particle size analyser, working on the light interruption principle. The other two use an optical microscope, in either the transmitted light or incident light mode, to count particles collected on the surface of a membrane filter. The optical microscope methods are described in ISO 4407.

All three methods are applicable to both used and unused insulating liquids.

Annex A contains an alternative sampling procedure using a syringe and Annex B reports a reference for the calibration of automatic particle counters.

NOTE 1 The methods are not intended to measure particulate matter in liquids containing sludge. While analysing solid content on oils containing sludge refers to method for sediment and sludge determination in IEC 60422, Annex C.

NOTE 2 The methods specified are only applicable to measurements related to a limited range of size and number.

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.

IEC 60475: *Method of sampling liquid dielectrics*

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

ISO 4407: *Hydraulic fluid power – Fluid contamination – Determination of particulate contamination by the counting method using an optical microscope*

ISO 5884: *Aerospace – Fluid systems and components – Methods for sampling and measuring the solid particle contamination of hydraulic fluids*

EN 50353: *Insulating oil – Determination of fibre contamination by the counting method using a microscope*