



IS 335 : 2018 New Insulating Oils — Specification (Fifth Revision)

New insulating oil, typically mineral-based or synthetic oil, is used primarily as a coolant and insulator in electrical transformers. It provides electrical insulation, helps in heat dissipation, and protects transformer parts from oxidation and other degradation over time. Insulating oil is crucial for the safe and efficient operation of power transformers, circuit breakers, and other electrical equipment.

A quality insulating oil should have **high Dielectric Strength, high thermal Stability, low Moisture Content, oxidation stability, compatibility with Materials, biodegradability and Environmental Safety.**

IS 335 sets the specifications for new insulating oils used in transformers, switchgear, and similar electrical equipment. IS 335 introduces three oil classes: Type I (standard transformer oil), Type II (high-viscosity transformer oil), and low-temperature switchgear oil. Key improvements include enhanced viscosity limits, sulfur content standards, and guidelines for new properties such as gassing tendency and the presence of polycyclic aromatic compounds (PCA) and polychlorinated biphenyls (PCB).

IS 335 specifies testing methods for essential properties, including dielectric strength, acidity, and oxidation stability, ensuring the oils maintain their insulating and cooling properties in various conditions. The standard also emphasizes environmentally safer oils and high fire safety thresholds. By aligning with international standards (IEC 60296:2012), IS 335 enhances quality control and compatibility, ensuring reliable, durable, and safe performance in Indian electrical infrastructure.

By adhering to IS 335, manufacturers can meet the performance and safety expectations of consumers, ensuring transformers function efficiently over long operational lifespans with minimal risk of breakdowns or accidents.