

1 Use the correct sampling method

- Use the appropriate standard
- Air in contact with the oil sample rapidly reduces the breakdown value
- A drum of new oil can fail a test if its seal has broken
- An opened drum of new oil can return <30 kV value in less than three weeks

2 Keep the test chamber clean

- Contamination causes high voltage leakage, which gives low breakdown values
- Use a lint free cloth and a suitable solvent (for example acetone)

3 Select the best test vessel

- The 400 ml test vessel complies with all test standards
- The 150 ml test vessel (option) may be better suited to the available oil sample volume. 150 ml is often used to test to D877 (often applied to low volume applications (no requirement to stir), for example CTs)
- Use a separate test vessel for each type of oil under test

4 Prepare the test vessel correctly

- Make sure the electrode gap is accurate
 - Set the gap with supplied gauges
 - Use the thumb wheels to reduce the gap until the electrodes start to grab the gauge
 - Replace the gauges if the black coating has worn, exposing aluminium
- Make sure the electrodes not worn or damaged
- Keep the test vessel and electrodes clean
 - Use a lint free cloth and a suitable solvent (for example, acetone)
 - Make sure the test vessel is completely dry before use
 - Between successive tests rinse the test vessel with clean oil or the sample oil to be tested
 - In a laboratory the test vessel can be kept filled with oil while in storage
 - If the impeller stirrer or magnetic bead is used, make sure they are clean and / or rinsed
 - Once rinsed fill the test vessel immediately with the oil sample to be tested

- If an impeller stirrer is used select the correct size impeller
 - The large red impeller is the most sensitive. Careful preparation is required (better suited to controlled laboratory environments)
 - Should results be lower than expected, use the appropriate white impeller before an oil sample is failed
 - The larger of the white impellers complies with the minimum dimensional requirements of test standard ASTM D1816
 - The smaller of the white impellers complies with the minimum dimensional requirements of test standard IEC 156
 - When comparing historical to new test results, use the same impeller where possible
- Take care not to create air pockets in the oil sample
 - Do not shake an oil sample bottle. Slowly invert the bottle three times to mix particulates
 - Slowly pour the oil down the side of the test vessel
 - Allow additional time for any created air pockets to rise to the surface
- See 'Megger Vessel Preparation Application Note' (OTS_VESSEL_AN_en) for more information

5 Maintain instrument calibration

- Use a VCM100D or a VCM80D to regularly check calibration
- Check full calibration annually (recommended)

See "The Megger guide to insulating oil dielectric breakdown testing" (Pt. No.: 2003-149) for more information.