



KEY #3 TO OIL ANALYSIS SUCCESS

Karl Fischer Testing, measuring precise moisture levels in oil samples, even at parts-per-million levels.

Karl Fischer Titration ASTM D6304

What is Karl Fischer Testing?

Karl Fischer testing is used to measure the exact amount of water present in an oil sample. It is the most accurate way to detect moisture contamination in lubricants and hydraulic fluids even at very low levels.

Why It Matters!

Water is one of the most damaging contaminants in oil. Even small amounts can reduce lubrication effectiveness, promote corrosion, accelerate oxidation, and degrade additives. Excess moisture can also lead to sludge formation, foaming, and loss of load-carrying capacity.

Karl Fischer testing matters because it provides early detection of moisture before visible symptoms or equipment damage occur, helping prevent premature wear, component failure, and unplanned downtime.

How It Works

Just like humidity in the air can quietly damage a home over time, water in oil often causes harm long before it's visible.

Karl Fischer testing determines oil moisture content through a precise chemical reaction between water and Karl Fischer reagents. The amount of reagent consumed during the reaction directly corresponds to the amount of water in the oil sample.

Unlike crackle tests or visual inspections, Karl Fischer testing measures actual water content, not just the presence of free water. Results are typically reported in parts per million (ppm), allowing for accurate trending and comparison against equipment or OEM limits.

This high level of precision makes Karl Fischer testing especially valuable for systems with tight tolerances, sensitive components, or applications where even trace moisture can significantly impact performance and reliability.

