



KEY #5 TO OIL ANALYSIS SUCCESS

Viscosity testing measures how easily an oil flows at a set temperature and whether it can properly lubricate moving parts.



Viscosity Testing ASTM D445

What is Viscosity Testing?

Viscosity testing is a laboratory method used to measure an oil's resistance to flow at a specific temperature. It indicates how thick or thin the oil is and whether it can maintain a proper lubricating film between moving components.

Why It Matters!

Viscosity is one of the most critical properties of a lubricant. If oil becomes too thick, it can restrict flow, increase energy consumption, and reduce cooling efficiency. If it becomes too thin, it may not provide adequate film strength, leading to increased metal-to-metal contact and accelerated wear.

Viscosity testing matters because changes in viscosity often signal oil degradation, contamination, or incorrect oil selection, allowing issues to be identified before equipment performance is compromised.

How It Works

Similar to how honey flows more slowly than water, oil viscosity determines how easily it moves through a system.

Viscosity testing measures the time it takes for a specific volume of oil to flow through a calibrated instrument at a controlled temperature. Results are typically reported in centistokes (cSt) at standard temperatures such as 40°C or 100°C, providing a consistent and repeatable measure of oil thickness.

By trending viscosity results over time, changes in oil condition can be monitored and compared against baseline values or OEM specifications. Significant increases or decreases in viscosity can indicate oxidation, thermal stress, contamination, or additive depletion, helping determine when corrective action or oil replacement is required.

