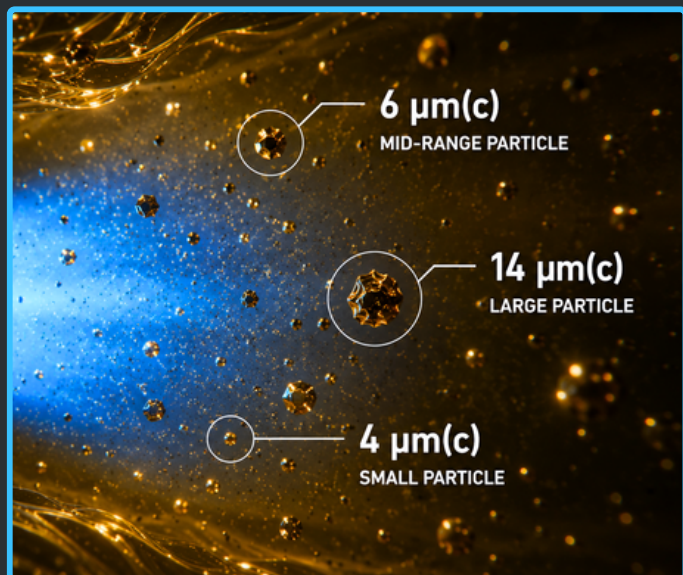


NEWSLETTER

August, 2026



Oil Cleanliness, Quantified.

From Laboratory Analysis to Continuous Online Monitoring

August, 2026 – When a hydraulic pump fails months before its scheduled overhaul, the cause is rarely a design flaw. More often, the culprit is contamination—silica entering through a breather, wear debris generated by the pump itself, or degraded fluid circulating through clearances measured in microns.

The question is not whether the oil is contaminated—it always is. The real question is how contaminated it is, and whether the condition is detected in time to prevent failure.

Whether testing is performed in the laboratory, in the field, or continuously online, the **QualiOPC™ Series delivers consistent particle count data using** the same proven light-blocking measurement principle.

Product Highlight

Online Particle Counter

QualiOPC™-OL2

Feature/Advantages:

- **16 Simultaneous Size Channels:** Covers the ISO 4402 / NAS 1638 set (1–100 μm) and the ISO 11171 “c” set (4–70 μm(c)) in one pass – no mode switching.
- **5-second to 24-hour Interval:** Fast enough to catch transients during filter evaluation, patient enough for long-term trending.
- **Full IIoT connectivity:** Ethernet (MQTT / Modbus TCP), RS485 Modbus RTU, RS232, isolated 4–20 mA, and USB are all standard, so counts reach a PLC, SCADA, or cloud dashboard without a gateway.
- **0.2–10 MPa Standard, 70 MPa Optional:** Covers plant hydraulics through high-pressure test stands and offshore circuits.



Oil Particle Counter

QualiOPC™ 1000

Feature/Advantages:

- **0.8–500 μm Over 32 Channels:** Channel sizes set in 0.01 μm increments for fine-grained distribution work.
- **Reporting Built-in:** NAS 1638, the ISO 4406 series, SAE AS4059, SAE ARP749D, and combined NAS/ISO output straight from the instrument.
- **±0.5% Sample-Volume Error:** Controlled sampling at 5–60 mL/min with counting RSD under 2% keeps repeat measurements comparable.
- **Pressure and Vacuum Sample Handling:** 0.8 MPa positive and –0.08 MPa vacuum handle fluids to 650 cSt and suppress bubbles during the run.



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Portable Liquid and Oil Particle Counter

QualiOPC™ 400H



Feature/Advantages:

- **Water content 10–500 ppm:** ± 5 ppm from 10–100 ppm – contamination and moisture from one 8.6 kg case.
- **Offline or Online:** Bottle sampling or live sampling at 0.1–0.6 MPa, extending to 40 MPa with the pressure-reducing device.
- **Built-in lithium Battery:** Runs where there is no outlet, and on 110–240 V where there is.
- **32 configurable channels, 1–500 μm :** The same reporting depth as the bench models, in a carry case.

Portable Particle Counter

QualiOPC™ 400



Feature/Advantages:

- **Battery-powered Field Operation:** An embedded high-strength enclosure built for workshop, plant, and remote service work.
- **32 channels at 0.1 μm Intervals:** 1–500 μm coverage with adjustable sampling and cleaning flow rates from 5–60 mL/min.
- **Optional Online Sampling:** 0.1–0.6 MPa as standard, to 40 MPa with a pressure-reducing device.
- **Results Wherever You Are:** Software database, built-in printer, and USB export.



NEWSLETTER

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ISO 4406 Isn't a Linear Scale

An ISO 4406 cleanliness code may look like a simple three-number label (for example, 22/20/17), but each one-step change represents approximately a **doubling or halving of the particle concentration** within that size range—not a one-unit increase.

That means **even a small change in the code can indicate a significant shift in oil cleanliness**. A two-code increase, for example, represents roughly four times as many particles, making trend monitoring just as important as obtaining an accurate particle count.

Online Particle Counter

QualiOPC™ 500

Feature/Advantages:

- **1 Second to 24 Hour Intervals:** Continuous automatic detection with the test interval set to the rate of change you care about.
- **7-inch Industrial Display:** Android-based control and calculation at the machine – no laptop at the panel.
- **RS485 or RS232 Output:** Feeds counts to plant systems; runs on 110–240 VAC or 24 VDC.
- **Online or Offline from One 5.5 kg Unit:** Installed monitoring plus bottle verification, with an optional water-content sensor.



Oil Particle Counter

QualiOPC™ VES

Feature/Advantages:

- **0.8–600 µm, 8–64 Channels:** Sensitivity to 0.8 µm under ISO 4402 or 3 µm under ISO 11171.
- **Positive and Negative Pressure Injection:** Degasses the sample and handles viscosities to 650 cSt; the PC-VES sampler injects oils up to 400 cSt through a transparent observation window.
- **Optional Integrated Sensing:** Viscosity, moisture content, and temperature measured alongside the particle count.
- **Auto-stop Cleaning and User Accounts:** Cleaning is monitored in real time and stops at the target concentration; permissions are configurable across multiple accounts.



Particle Counter Sensor

QualiOPC™ 60

Feature/Advantages:

- **1–500 µm with RSD under 2%:** The detection performance of the instruments it goes inside, as a module.
- **Compact and mountable:** 214 mm long with M4 fixture mounting for portable, online, or laboratory platforms.
- **ISO 4402 / ISO 11171 calibration support:** Traceable particle sizing from an OEM component.



NEWSLETTER

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Which QualiOPC™ Model Matches Your Contamination Program?

BEST FOR	PRODUCT TAGS	RECOMMENDED MODEL	WHY IT'S THE RIGHT CHOICE
Always-on monitoring of a pressurized circuit feeding a PLC, SCADA, or cloud dashboard	QualiOPC™ OL2	Ethernet/MQTT, RS485, and isolated 4–20 mA are all standard, with a 5-second minimum interval and a 100,000-record local buffer.	Always-on monitoring of a pressurized circuit feeding a PLC, SCADA, or cloud dashboard
Routine bench analysis in a fluids or QC laboratory	QualiOPC™ 1000	0.8–500 µm across 32 channels at ±0.5% sample-volume error, with NAS/ISO/SAE reporting built into the instrument.	Routine bench analysis in a fluids or QC laboratory
Field service where oil moisture matters as much as particles	QualiOPC™ 400H	Adds 10–500 ppm water-content measurement to portable counting in an 8.6 kg battery-powered case.	Field service where oil moisture matters as much as particles
Mobile spot checks across plants, sites, and fleets	QualiOPC™ 400	Carry-case format with battery operation and optional online sampling to 40 MPa.	Mobile spot checks across plants, sites, and fleets
Installed monitoring that an operator reads at the machine	QualiOPC™ 500	7-inch Android display with RS485/RS232 output and intervals from 1 second to 24 hours.	Installed monitoring that an operator reads at the machine

Why Choose Qualitest



Global Compliance:

ISO 4406, ISO 4402, ISO 11171, NAS 1638, and SAE AS4059 reporting run across the line, so a result generated in one region is readable by a customer, auditor, or OEM in another.



One Principle, Five Formats:

Every QualiOPC™ model counts by light blocking. Bench, portable, inline, and OEM-integrated results stay comparable, so a trend line survives a change of instrument.



Scalable Economics:

Start with a portable counter and a bottle program, add inline monitoring on the assets that justify it. Qualitest finance packages spread the capital cost across the rollout.



Worldwide Service and Support:

Calibration, application guidance, and spares across the USA, Canada, UAE, KSA, the GCC, the EU, India, APAC, Africa, and Latin America.

Ready to Stop Guessing at Fluid Cleanliness?

The QualiOPC™ series gives you one measurement principle in seven formats – bench, portable, inline, and OEM – so the lab, the field crew, and the control room are finally arguing from the same numbers.

Explore the full lineup: worldoftest.com/oil-particle-counters

For guidance on configuring the right contamination-monitoring setup for your fluids and workflow: sales@qualitest-inc.com

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