



Hach's Pharmaceutical Quick Guide



From process monitoring to quality control to wastewater, Hach® has the right tool for your challenging or routine applications. The comprehensive selection of Hach chemistries, spectrophotometers, electrochemistry meters and probes, and benchtop analyzers provides the broadest range of analyses in the industry.

Lab Instruments and Buffer Standard Solutions

TL23 Turbidimeter

Turbidity measurement has never been easier. The TL23 Turbidimeter is the standard for turbidity measurement around the world. With tungsten or LED light sources and proven optics, no other instruments deliver more reliable, accurate, and stable measurements. 11ml vial is an application tailored to pharmaceutical customers' low sample volume request. We also offer IQ/OQ and full service for maintenance.

LICO690

Hach has been offering instrumental color measurements of liquids to European Pharmacopeia for over 25 years. Our LICO690 meets all requirements in relation to data integrity in the GxP environment. From January 2021, in addition to the visual color matching method for liquids, new instrumental method has been implemented in chapter 2.2.2 which is tailored towards LICO690. Sample volume starting at 0,8ml, no other supplier can offer smaller volumes. Well equipped with IQ/OQ documentation, certified standards for system controlling, disposable vials, LICO690 is the easiest instrument you have to perform color measurement.

Certified Buffer Standard Solution

Certified standards with full and internationally recognized traceability

Hach's pH buffer standard solution, IUPAC, with certificate of conformity* and traceability; Indication of the exact pH buffer value with associated extended uncertainty ($k = 2$). Traceable to the IUPAC/NIST pH scale. Guaranteed durability thanks to premium aluminium packaging. Colorless pH buffer solution. Full pH coverage from 1.679-12.45 ($k=2$) at 25 °C.

Highlights:

- Approved calibration laboratory
- Fully traceable standards
- Absolutely reliable packaging
- GLP (Good Laboratory Practice) from the beginning and every day
- Ensured traceability

Continuously Monitoring Instruments

Orbisphere C1100 Ozone Sensors

Hach's Ozone sensor provides a real zero & a traceable calibration certificate and guarantees the capability of measurement below 1 ppb. Together with our 410/510 controllers, you will have a complete solution for Ozone measurement in your continuous ozonation system.

The Orbisphere C1100 has the lowest drift and requests less than 2 instances of maintenance/calibration per year. The instrument provides drift-free and accurate measurements due to true zero reading. The unique platinum guard ring technology prevents false signals arising from the electrolyte.

The C1100 ozone sensor has a unique air calibration feature that offers operators a quick and easy method to calibrate without requiring an external standard. Air calibration provides an accuracy of $\pm 5\%$ (achieving better than $\pm 1\%$ against an ozone standard of known concentration). The Orbisphere C1100 is the only sensor that provides such certified high accuracy!





Ultra Low Range CL17sc

Total chlorine confidence. From the global leader in chlorine analysis

Meet your unique water cycle needs with the new Ultra Low Range CL17sc online total chlorine analyzer from Hach. Whether treating utility water, product water, or wastewater discharge, you'll have the direct chlorine measurements you need to optimize your process. You'll be able to protect valuable assets and report to regulatory agencies with confidence.

- Monitor and Optimize your Dechlorination process
- Depend on direct measurements
- Protect your assets
- Connect with Claros

Spectrophotometric Measurements

Parameter	Platform	ISO Method	Range*
Total and Kjeldahl Nitrogen	DR-Series Spectrophotometer	10242	0-16 mg/L N
Nitrate	DR-Series Spectrophotometer	10206	0.23-35 mg/L NO ₃ -N
Nitrite	DR-Series Spectrophotometer	10207	0.015-6 mg/L NO ₂ -N
Ammonia	DR-Series Spectrophotometer	10205	0.015-130 mg/L NH ₃ -N
Phosphate	DR-Series Spectrophotometer	10210	0.15-60 mg/L PO ₄
Sulfate	DR-Series Spectrophotometer	10227	40-900 mg/L SO ₄
Chlorine	DR-Series Spectrophotometer	8021/10069	0.02-10.0 mg/L Cl ₂
Hardness	DR-Series Spectrophotometer	8374/8030	4-4000 µg/L CaCO ₃
Chemical Oxygen Demand	DR-Series Spectrophotometer	10211/8000/10212	1-15000 mg/L COD
Total Organic Carbon	DR-Series Spectrophotometer	10267	1.5-300 mg/L TOC
Silica	DR-Series Spectrophotometer	8282/8186/8185	3-100000 µg/L SiO ₂
Iron (Total)	DR-Series Spectrophotometer	10263/8147	1-1400 µg/L Fe
Copper	DR-Series Spectrophotometer	8143/8506	1-5000 µg/L Cu
Molybdenum	DR-Series Spectrophotometer	8169/8036	0.02-40.0 mg/L Mo
Hydrazine	DR-Series Spectrophotometer	8141	4-600 µg/L N ₂ H ₄
Oxygen scavengers	DR-Series Spectrophotometer	8140	varies by analyte

*Ranges reflect multiple chemistries. See Water Analysis Handbook for details.

Analyzers

Parameter	Platform	Method	Range
pH	AT1000	Potentiometric	0-14 pH
Alkalinity	AT1000	Potentiometric Titration	40-2000 mg/L CaCO ₃
Conductivity	AT1000	Potentiometric	0.01-200000 µS/cm
Hardness (ISE)	AT1000	Potentiometric Titration	20-720 mg/L CaCO ₃
Moisture (Karl Fischer)	AT1000	Volumetric Titration	0-100 % H ₂ O
Chlorine (Total)	AT1000	Amperometric Titration	0.003-5 mg/L Cl ₂
Turbidity	TL23 Nephelometer	Nephelometric	0.01-10000 NTU

Electrochemical Measurements

Parameter	Platform	Electrode	Range
pH	HQd-Series Meter	PHC201	0-14 pH
Conductivity	HQd-Series Meter	CDC401	0.01-200000 µS/cm
BOD	HQd-Series Meter	LBOD101	0.1-20.0 mg/L O ₂
DO	HQd-Series Meter	LDO101	0.1-20.0 mg/L O ₂
ORP	HQd-Series Meter	MTC101 ORP	±1200 mV
Ammonia	HQd-Series Meter	ISENH3181	0.01-14000 mg/L NH ₃ -N
Sodium	HQd-Series Meter	ISENA381	0.023-23000 mg/L Na
Chloride	HQd-Series Meter	ISECL181	0.1-35500 mg/L Cl

Microbiological Measurements

Parameter	Platform	Method	Range
Yeast and Mold	Paddle Test	DOC316.53.01223	10 ² -10 ⁶ CFU
Total Aerobic Bacteria	Paddle Test	DOC316.53.01223	10 ² -10 ⁷ CFU
ATP	LuminUltra	Luminescence	4x10 ⁻¹² -1x10 ⁻⁶ M ATP



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