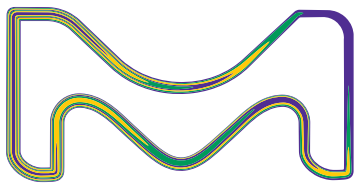


A Precise & Mobile Laboratory

RQflex® 20 reflectometer

The Reflectoquant® system for
rapid and precise in-process
monitoring and rapid QC analysis



Reflectoquant® System

Mobile accuracy with test strips

strip – dip – read – RECORD – ACTION

Take your lab to the sample with the compact and easy-to-use RQflex® 20 reflectometer from Supelco® analytical products. Monitor materials at any stage of your production process or during disinfection control to obtain precise quantitative results rapidly, and directly on-site.

The Reflectoquant® system consists of test strips and reflectometers. This mobile laboratory gives you all the tools you need for high quality analyses for a wide spectrum of sample materials from food, water, and industrial to environmental samples.

**Our high standards match yours.
We are your trusted partner in analytical chemistry.**

SigmaAldrich.com/reflectoquant

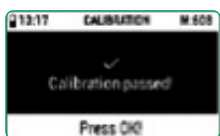
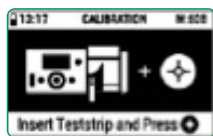
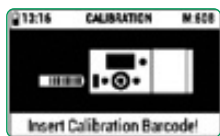


1. Intuitive menu navigation

Our new menu is simple and easy to use to access all your methods, results and quality assurance options, along with the ability to tailor your settings to your needs.



The display shows easy-to-follow pictograms of the method and workflow for straightforward measurement and accurate reproducible results.



2. Portable analysis

This light and compact system acts like a mobile laboratory to perform critical analyses and obtain quantitative results directly on-site. Get results in minutes for easy monitoring of your materials throughout your workflow.

3. Barcoded test strips with batch specific calibration

For every test condition, each batch of test strips is calibrated and equipped with a barcode for accurate and reproducible results. Obtain consistent results quickly with an average accuracy within $\pm 10\%$ in the middle of the measuring range.



4. Instrument-supported Analytical Quality Assurance

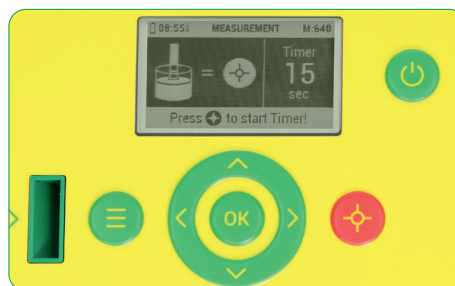
For analytical quality assurance (AQA), the RQcheck and total system monitoring (TSM) process ensures accurate and precise measurement results. Straight forward calibration can be easily carried out to reset the baseline, so your results will always be reliable.

5. Tests and application notes to fit your needs

From ammonium through to nitrate and urea, we have a comprehensive range of test kits for fast instrumental analysis, e.g., for testing sugar content in chocolate, nitrate content in vegetables, or the freshness of honey.

6. Countdown-timer to streamline your analysis

For maximum reproducibility, a countdown-timer with an advanced warning alert before the end of the test strip preparation time can be tailored to fit in with your workflow.



7. Different languages available

Choose from English, German, French, Spanish, Portuguese, Japanese or Chinese.

Reflectoquant® System

Mobile accuracy with test strips

Discover our Application Notes for Reflectometry

Reflectoquant® application notes offer a step-by-step sample preparation guide, and information to determine various parameters for agriculture, food & beverage, or disinfection control processes.

With over 100 application notes for reflectometry, find the ideal method to support your production processes and analyses.



SigmaAldrich.com/wfa-applications

Agriculture



Control nutrients in soil and plant products

Along with nitrogen, phosphorus is a nutrient that plants need in large quantities for normal growth. Due to possible over-fertilization, it is important to analyze those parameters in agriculture production.

Find out how the mobile Reflectoquant® test system and our application notes for agriculture will support your analyses and crop management. For high-precision analyses, we offer Spectroquant® Prove plus benchtop system.

Disinfection Control

0.1% peracetic acid is enough to kill bacteria, viruses, fungi and even spores in the shortest possible time

This is why it is used for cold septic disinfection of beverage bottles, for example. Complete disinfection control involves various methods for testing parameters at high and low concentration ranges.

See how our mobile Reflectoquant® system as well as our handy MQuant® test strips offer efficient solutions for on-site analysis. In addition our Spectroquant® Move system includes a dedicated handheld colorimeter for disinfection control analysis.

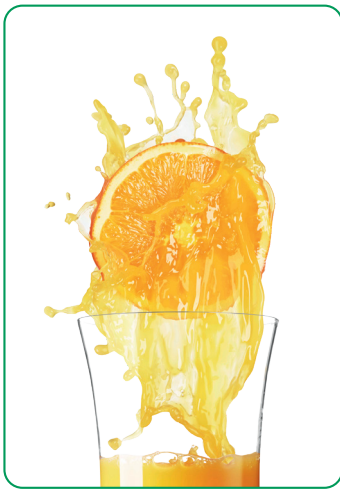


Food & Beverage Testing

Rapid quantitative detection of hydroxymethylfurfural in honey

The freshness of honey is determined by measuring its hydroxymethylfurfural (HMF) content. HMF is an organic compound that arises from the dehydration of fructose, e.g. when honey is heated for easier filling. HMF is barely detectable in freshly centrifuged honey, but increases about 2–3 mg/kg annually, depending on storage temperature and pH. At 21 °C, HMF content can rise to 20 mg/kg in just one year.

See how our application note “HMF in honey” and the Reflectoquant® HMF test provide the first rapid test method for the accurate determination of HMF content in just a few minutes.



Test Vitamin C in Food & Beverages

Vitamin C (ascorbic acid) is an essential characteristic of many foods and drinks. Its depletion should be monitored as it implies a deterioration of quality and taste.

See our Reflectoquant® Ascorbic Acid Test application note for over 15 sample materials.

Monitor acrylamide formation

In fried or baked goods, like potato chips, the reaction between asparagine and reducing sugars (fructose, glucose, etc.) may produce acrylamide, which is considered toxic and carcinogenic. Consequently, maximum limits of reducing sugars in potatoes should not be exceeded.

Find our application note “Total sugar in potatoes” for the Reflectoquant® Total Sugar Test.



Reflectoquant® System

Mobile accuracy with test strips

Rapid, accurate and precise tests

	Parameter	Graduation	No. of tests	Cat. No.	Method	Type
A	Ammonium Test	0.2 – 7.0 mg/L NH ₄	50	1.16892.0001	Indophenol blue	Reagent, incl.
	Ammonium Test	5.0 – 20.0 mg/L NH ₄	50	1.16899.0001	Indophenol blue	Reagent, incl.
	Ammonium Test	20 – 180 mg/L NH ₄	50	1.16977.0001	Nessler	Reagent, incl.
	Ascorbic Acid Test	25 – 450 mg/L ascorbic acid	50	1.16981.0001	Phosphomolybd. blue	
B	Blank Strip		50	1.16730.0001		
C	Calcium Test	5 – 125 mg/L Ca	50	1.16125.0001	Phthalein complexone	
	Chlorine Test (free chlorine)	0.5 – 10.0 mg/L Cl ₂	50	1.16896.0001	Redox reaction	Reagent, incl.
F	Formaldehyde Test	1.0 – 45.0 mg/L HCHO	50	1.16989.0001	Triazole	Reagent, incl.
G	Glucose Test	1 – 100 mg/L Glucose	50	1.16720.0001	Enzymatic reaction	
H	Hydroxymethylfurfural Test	1.0 – 60.0 mg/L HMF	50	1.17952.0001	Enzymatic reaction	
I	Iron Test	0.5 – 20.0 mg/L Fe(II)	50	1.16982.0001	Triazine	
L	Lactic Acid Test	3.0 – 60.0 mg/L lactic acid	50	1.16127.0001	Enzymatic reaction	
M	Magnesium Test	5 – 100 mg/L Mg	50	1.16124.0001	Phthalein complexone	
	Malic Acid Test	5.0 – 60.0 mg/L malic acid	50	1.16128.0001	Enzymatic reaction	
N	Nitrate Test	3 – 90 mg/L NO ₃	50	1.16995.0001	Modified Griess' reaction	
	Nitrate Test	5 – 225 mg/L NO ₃	50	1.16971.0001	Modified Griess' reaction	
	Nitrite Test	0.5 – 25.0 mg/L NO ₂	50	1.16973.0001	Griess' reaction	
	Nitrite Test	0.03 – 1.00 g/L NO ₂	50	1.16732.0001	Aromatic amine	
P	Peracetic Acid Test	1.0 – 22.5 mg/L peracetic acid	50	1.16975.0001	Redox reaction	
	Peracetic Acid Test	20.0 – 100 mg/L peracetic acid	50	1.17956.0001	Redox reaction	
	Peracetic Acid Test	75 – 400 mg/L peracetic acid	50	1.16976.0001	Redox reaction	
	Peroxide Test	0.2 – 20.0 mg/L H ₂ O ₂	50	1.16974.0001	Enzymatic reaction	
	Peroxide Test	20.0 – 100 mg/L H ₂ O ₂	50	1.17968.0001	Enzymatic reaction	
	Peroxide Test	100 – 1,000 mg/L H ₂ O ₂	50	1.16731.0001	Enzymatic reaction	
	pH Test for Cooling Lubricants	pH 7.0 – 10.0	50	1.16898.0001	Mixed indicator	
	pH Test	pH 4.0 – 9.0	50	1.16996.0001	Mixed indicator	
	Phosphate Test	5 – 120 mg/L PO ₄	50	1.16978.0001	Phosphomolybd. blue	Reagent, incl.
	Potassium Test	0.25 – 1.20 g/L K	50	1.16992.0001	Dipicrylamine	Reagent, incl.
S	Sucrose Test	0.25 – 2.50 g/L	50	1.16141.0001	Enzymatic reaction	Reagent, incl.
	Sulfite Test	10 – 200 mg/L SO ₃	50	1.16987.0001	Nitroprusside/ Zn-hexacyanoferrate	
T	Total Hardness Test	0.1 – 30.0 °d	50	1.16997.0001	Phthalein complexone	
	Total Sugar Test (glucose and fructose)	65 – 650 mg/L total sugar	50	1.16136.0001	Enzymatic reaction	Reagent, incl.
U	Urea Test in Milk Application	0.2 – 7.0 mg/L NH ₄	50	1.16892.0001	Indophenol blue	Reagent, incl.



You can directly order the tests in our eShop via QR-Code.



SigmaAldrich.com/reflectoquant

	Beer processing	Food testing	Juices	Milk products	Mineral water	Soft drinks	Aquaculture	Boiler water, cooling water	Drinking water	Groundwater, surface water	Industrial water	Process water	Seawater	Swimming pools	Wastewater	Agriculture	Disinfection control	Electroplating	Parameter
	Food and beverages						Water (Analytics)										Others		Parameter
							●		●	●			●		●		●		Ammonium Test
							●		●	●			●		●		●		Ammonium Test
															●		●		Ammonium Test
	●	●	●	●		●													Ascorbic Acid Test
	●	●	●			●													Blank Strip
	●	●	●	●	●	●		●	●	●									Calcium Test
									●							●		●	Chlorine Test
	●	●	●	●		●									●		●		Formaldehyde Test
		●	●																Glucose Test
		●	●																Hydroxymethylfurfural Test
		●	●		●					●	●		●		●			●	Iron Test
	●	●	●	●		●													Lactic Acid Test
		●		●				●	●	●						●			Magnesium Test
		●	●		●														Malic Acid Test
		●	●		●	●	●		●	●	●		●		●	●			Nitrate Test
		●	●		●	●	●		●	●	●		●		●	●			Nitrate Test
		●					●			●		●		●					Nitrite Test
								●											Nitrite Test
																	●		Peracetic Acid Test
																	●		Peracetic Acid Test
																	●		Peracetic Acid Test
														●			●		Peroxide Test
																	●		Peroxide Test
																	●		Peroxide Test
																		●	pH Test for Cooling Lubricants
		●	●		●	●	●		●	●	●	●		●	●	●			pH Test
		●													●	●			Phosphate Test
	●		●		●	●			●		●				●	●			Potassium Test
	●	●	●	●		●													Sucrose Test
		●						●							●				Sulfite Test
					●			●	●	●									Total Hardness Test
	●	●	●			●													Total Sugar Test (glucose and fructose)
				●															Urea Test in Milk Application

Reflectoquant® System

Mobile accuracy with test strips

Technical data

Dimensions:	184 × 79 × 30 mm
Weight:	253 g (including batteries)
Memory:	50 test methods 200 measurement results 50 RQcheck results 50 calibration results
Light source:	4 LEDs, green/red, double optics
Power source:	4 × 1.5-V batteries (AAA)
Display:	Reflective LCD Graphic Module (256 × 160 dot)
Measurement range:	4–90% rel. remission
Reflection area:	4 × 6 mm
Resolution:	0.1% rel. remission
Operating temperature:	5–40 °C for ideal measurements
Operating humidity:	below 80% for ideal measurements

Order Information

Product	Cat. No.
Reflectoquant® RQflex® 20 reflectometer	1.17246.0001
Reflectoquant® RQCheck Set for RQflex® 20 reflectometer	1.17247.0001
Reflectoquant® Recalibration Set	1.16954.0001
Reflectoquant® Strip Adapter	1.17267.0001

Get all the tools you need for precise analysis from one trusted source

Our latest edition of the Water Food & Environmental Analytics Catalog is available online. It is packed with essential information and state-of-the-art tools to support your analyses in water & wastewater, food & beverage, or industrial and environmental applications. Compliance always ensured!



- Find information on over 500 quantitative and semi-quantitative tests and instruments for benchtop or mobile measurements.
- Get an overview about our comprehensive ready-to-use methods for Spectoquant® photometric test kits and Reflectoquant®.
- Discover our Analytical Quality Assurance concept to find measures for simple and reliable quality control in accordance with ISO 9000, ISO 17025, ISO 14000 and Good Laboratory Practice.



SigmaAldrich.com/wfa-catalog



FOOD & BEVERAGE WORKFLOW

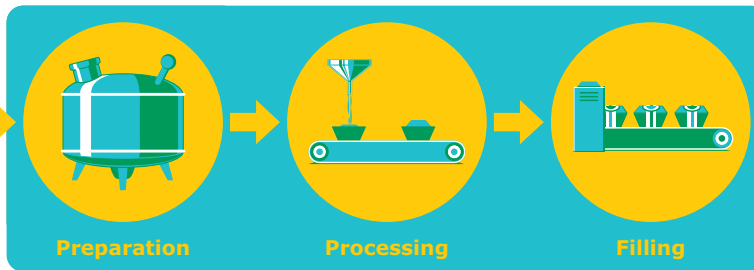
Food and beverage producers face increasing safety regulations requiring detailed analyses of raw materials, in-process controls, quality tests, and hygiene monitoring. Because all of these analyses take time, our rapid and on-the-spot tests for chemical and microbiological contamination are designed to help get your product ready for purchase faster. Find a selection of products that support your workflow to accurately analyze microbiological contamination and important chemical parameters in food and beverages such as ascorbic acid, glucose, and fructose.



Input



In-Process



Output



Instruments & Test Kits

Spectroquant® Photometers

- Prove plus spectrophotometer series
- Move 100 and Move DC

Spectroquant® Photometric Test Kits

- Chromium Test Cat. No. **1.14758.0001**
- Nickel Test Cat. No. **1.14785.0001**
- Nitrogen Cell Test Cat. No. **1.00613.0001**
- Phosphate Cell Test Cat. No. **1.14543.0001**

Reference Materials

- Ready-to-use reference materials for photometric test kits
- Certipur® standards
- Standards for pesticides

Ingredient and Nutritional Testing

- Kjeldahl, total dietary fiber
- Flavors and fragrances
- Karl Fischer – reagents

Rapid Chemical Testing with Reflectoquant® or MQuant® Systems

- Reflectometer: RQflex® 20
Cat. No. **1.17246.0001**
- Reflectometric tests
 - Ascorbic Acid Test Cat. No. **1.16981.0001**
 - Sucrose Test Cat. No. **1.16141.0001**
 - Glucose Test Cat. No. **1.16720.0001**
 - Nitrate Test Cat. No. **1.16971.0001**
 - Urea (Ammonium) Test Cat. No. **1.16892.0001**
- Visual tests
 - pH-indicator strips pH 0-14
Cat. No. **1.09535.0001**
 - Free Fatty Acids Test strips
Cat. No. **1.17046.0001**

Complementary Testing

- Chromatography, e.g. HPLC, GC, TLC
- Microbial filtration testing, e.g. EZ family
- Water purification testing, e.g. Milli-Q® system

Protocols & Resources

- Selection of Application Notes
 - Chromium (total) in dairy products
 - Nickel (total) in dairy products
 - Nitrogen (total) in dairy products
 - Phosphorus (total) in dairy products
 - Urea in milk
 - Hydroxymethylfurfural (HMF) in honey
 - Ascorbic acid in juices
 - Sucrose (saccharose) in soft drinks
 - Glucose in red and white wine
 - Nitrate in Vegetables
 - Nitrate in Milk Powder
 - Nitrate in Vegetables
 - How Fresh is Your Honey
 - Total Sugar Testing in Diet Soft Drinks
 - Glucose Content Testing
 - Ascorbic Acid in Food
 - Monitor Acrylamide
 - Quality of Frying Oil
 - Milk Quality Testing

Find protocols and application notes on **SigmaAldrich.com/wfa-applications**

More information on **SigmaAldrich.com/food**

Disinfection Control in Your Workflow

Tasks requiring disinfection control



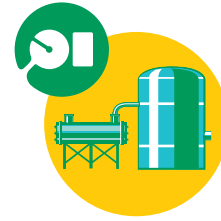
Water Bottling
Packaging Control



Brewery
Filling/Bottling



Food Processing
Product QC



Wastewater
Output Control

Instruments & Test Kits

Rapid Chemical Testing with Reflectoquant® or MQuant® Systems

- Reflectometer: RQflex® 20
Cat. No. **1.17246.0001**
- Reflectometric tests
 - Chlorine Test Cat. No. **1.16896.0001**
 - Peroxide Test Cat. No. **1.16731.0001**
 - Peracetic Acid Test Cat. No. **1.16976.0001**
 - pH Test Cat. No. **1.16996.0001**
 - More reflectometric test kits see **page 136**
- Visual tests
 - pH-indicator strips pH 0-14
Cat. No. **1.09535.0001**
 - Peroxide Test strips Cat. No. **1.10011.0001**

Spectroquant® Instruments

- Vis Spectrophotometer Prove 100 plus
Cat.No. **1.73026.0001**
- UV/Vis Spectrophotometer Prove 300 plus
Cat. No. **1.73027.0001**
- UV/Vis Spectrophotometer Prove 600 plus
Cat.No. **1.73028.0001**
- Colorimeter: Move DC Cat. No. **1.73635.0001**
- Colorimeter: Move 100 Cat. No. **1.73632.0001**

Spectroquant® Photometric Test Kits

- Chlorine Tests Cat. No. **1.00595.0001** | **1.00598.0001** | **1.00602.0001** | **1.0599.0001**
- Chlorine Dioxide Test Cat. No. **1.00608.0001**
- Ozone Test Cat. No. **1.00607.0001**
- Cyanuric Acid Test Cat. No. **1.19253.0001**
- Surfactants (nonionic) Cell Test
Cat. No. **1.01787.0001**
- Hydrogen Peroxide Tests
Cat. No. **1.18789.0001** | **1.14731.0001**
- Formaldehyde Test Cat. No. **1.14678.0001**

Complementary Testing

- Hygiene monitoring

Facilities that are not disinfected effectively have more potential safety risks. Disinfection control remains critical in ensuring the safety of your product. However, the determination of chemical cleanliness requires instruments and means and not just the human eye. Ensure the safety of your production line after disinfection.

Are you working in these areas?

- dairy or infant formula
- vegetarian dishes
- meat products
- products with allergen free claims
- other food and beverage industries

Thorough disinfection control testing of filling and processing equipment must be conducted to ensure that no disinfectant residues remain and subsequently contaminate the final food or beverage products.

Protocols & Resources

- Selection of Application Notes
 - Perchlorate in wastewater
 - Surfactants (nonionic) in Extran® rinse solutions
 - Glutardialdehyde in aqueous solutions

Find protocols and application notes on [SigmaAldrich.com/wfa-applications](https://www.sigmaaldrich.com/wfa-applications)

Listen to our Webinar: Quickly Analyze Chemical Disinfectant Parameters of Your Production Line After Disinfection on [SigmaAldrich.com/test-strips](https://www.sigmaaldrich.com/test-strips)



Supelco®

Analytical Products

Merck Life Science KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

For more information visit:

[SigmaAldrich.com/mobile-lab](https://www.sigmaaldrich.com/mobile-lab)

To place an order or receive technical assistance:

[SigmaAldrich.com/customersupport](https://www.sigmaaldrich.com/customersupport)

[SigmaAldrich.com/techservice](https://www.sigmaaldrich.com/techservice)

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