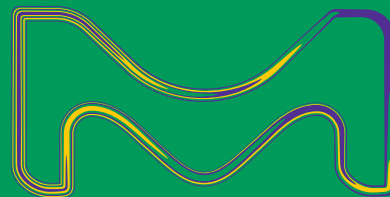


Analytical Products



A PRECISE & MOBILE LABORATORY

RQflex[®] 20 reflectometer

Reflectoquant[®] system for
easy in-process monitoring
and rapid QC analysis



The life science business of Merck operates
as MilliporeSigma in the U.S. and Canada.

MERCK

Reflectoquant® system

Mobile accuracy with test strips

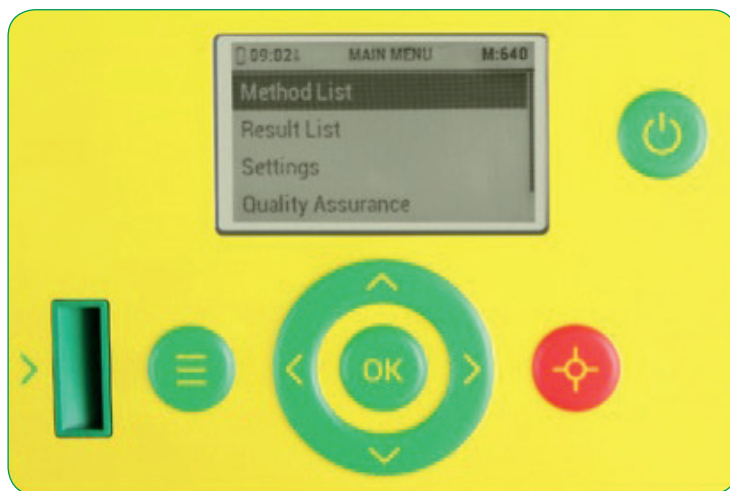
strip – dip – read – record – action

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

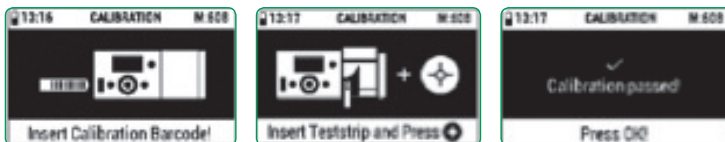
The Reflectoquant® system consists of test strips and reflectometers, this mobile laboratory gives you all the tools you need for high quality, low cost analyses for a wide spectrum of sample materials from food, water, and industrial to environmental samples.

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

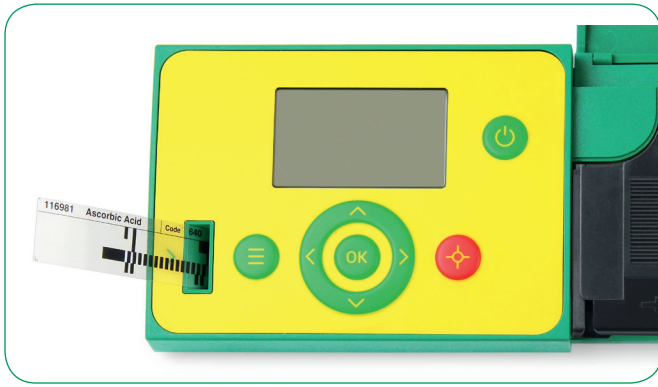
This light and compact system acts like a mobile laboratory to perform critical analyses and obtain quantitative results directly on-site. Get results in minutes for easy monitoring of your materials throughout your workflow.



7. DIFFERENT LANGUAGES AVAILABLE

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

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

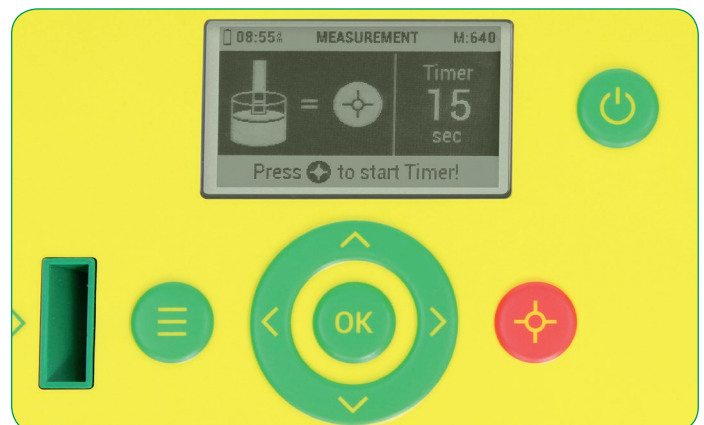
For analytical quality assurance (AQA), the RQcheck and total system monitoring (TSM) process ensures accurate and precise measurement results. Straightforward calibration can be easily carried out to reset the baseline, so your results will always be reliable.

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.



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 SOILS 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 the Spectroquant Prove® benchtop system.

DISINFECTION CONTROL

0.1% PERACETIC ACID IS ENOUGH TO KILL BACTERIA, VIRUSES, FUNGI AND EVAN SPORES IN THE SHORTEST POSSIBLE TIME

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

See how our mobile Reflectoquant® systems as well as our handy MQuant® Test Strips offer efficient solutions for on-site analysis. Our Spectroquant® Move system has a dedicated handheld instrument for disinfection control analysis.



FOOD & BEVERAGE

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 notes “HMF in Honey” and the Reflectoquant® HMF test provide you the first rapid test 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 notes 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 “Total sugar in potatoes” for Reflectoquant® Total Sugar Test.



SMALL, RAPID, PRECISE TESTS

	Parameter	Graduation	No. of tests	Ord. 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	Phosphomolybdic 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	
	Iron Test	20 – 200 mg/L Fe(II)	50	1.16983.0001	2.2'-Bipyridine	
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	pH 1.0 – 5.0	50	1.16894.0001	Mixed indicator	
	pH Test	pH 4.0 – 9.0	50	1.16996.0001	Mixed indicator	
	pH Test for Cooling Lubricants	pH 7.0 – 10.0	50	1.16898.0001	Mixed indicator	
	Phosphate Test	5 – 120 mg/L PO ₄	50	1.16978.0001	Phosphomolybdic 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.



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
																			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
																			pH Test
																			pH Test for Cooling Lubricants
																			Phosphate Test
																			Potassium Test
																			Sucrose Test
																			Sulfite Test
																			Total Hardness Test
																			Total Sugar Test (glucose and fructose)

Reflectoquant® system

Mobile accuracy with test strips

TECHNICAL DATA

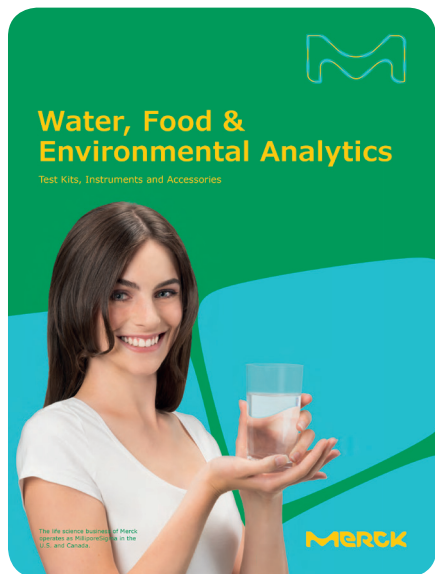
Dimensions:	184 × 79 × 30 mm
Weight:	253 g (including batteries)
Memory:	50 test methods 200 measurement results 50 RQcheck results 50 calibration results
Light source:	4 LEDs, green/red, double optics
Power source:	4 × 1.5-V batteries (AAA)
Display:	Reflective LCD Graphic Module (256 × 160 dot)
Measurement 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	Ord. No.
Reflectoquant® RQflex® 20 reflectometer	1.17246.0001
Reflectoquant® RQCheck Set for RQflex® 20 reflectometer	1.17247.0001
Reflectoquant® RQcalibration set	1.16954.0001
Reflectoquant® Strip Adapter	1.16953.0001

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.



- Find information on over 500 quantitative and semi-quantitative tests and instruments for bench top 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



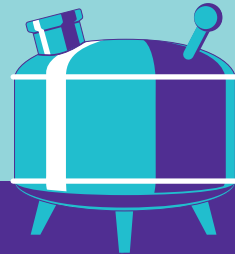
food & beverage workflow

Input

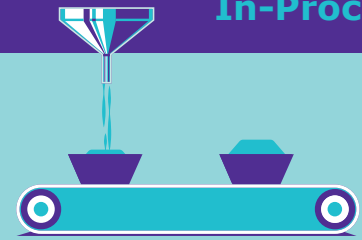


Raw material QC

Preparation



In-Process



Processing

Quality Control

Chromatography

- HPLC, GC, TLC
- Syringe filters



Spectrophotometry

- Spectroquant® Prove 600
- Spectroquant® test kits, e.g. calcium, nitrate, sulfite



Reference materials

- CRM for test kits
- Certipur® standards
- Standards for pesticides



Microbial and pathogen testing

- Microbial filtration testing, e.g. EZ family
- Culture media, dehydrated and ready-to-use media



Water purification system

- Milli-Q® system

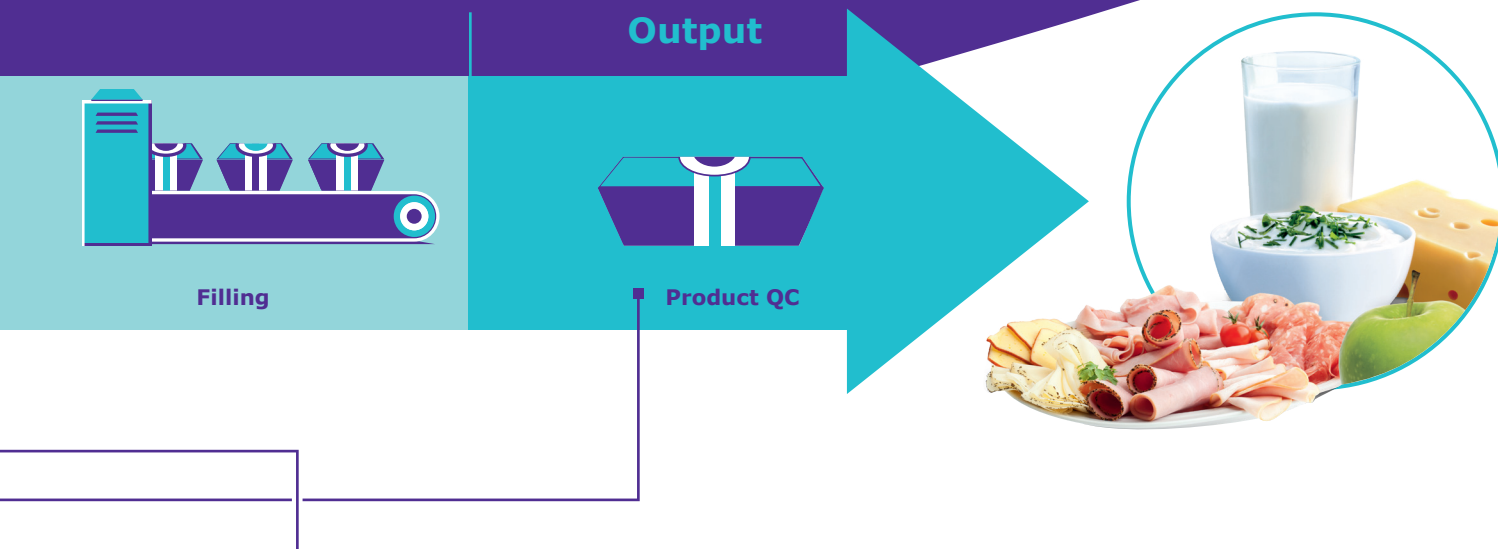


Ingredient and nutritional testing

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

Food and beverage producers face increasing safety regulations, and are required to perform detailed analyses of raw materials, in-process controls, quality tests, and hygiene monitoring. As all of these analyses take time, our rapid and on-the-spot tests for chemical and microbiological contamination are designed to help you get your product to the market faster.

The workflow diagram shows the products you need to accurately analyze important chemical parameters in food and beverages, such as the concentration of ascorbic acid, glucose and fructose, or microbiological contamination.



In-Process Control

Semi-quantitative testing

- pH strips and paper
- MQuant® test strips, e.g. free fatty acids



Quantitative testing

Test strips

- RQflex® 20 reflectometer
- Reflectoquant® test kits e.g. HMF, glucose, sucrose, ascorbic acid



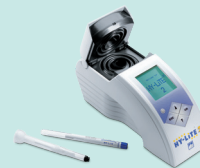
Photometry

- Move 100 and Move Cl₂/O₃/ClO₂/CyA/pH colorimeters
- Spectroquant® test kits, e.g. iron, magnesium, sulfite



Microbial and pathogen testing

- Air sampler, e.g. MAS-family
- Surface monitoring, e.g. HY-LiTE®, HY-RiSE®, Rapid detection kits

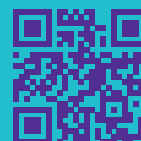


Reference materials

- CRM
- Certipur® standards



FIND ALL THE PRODUCTS YOU NEED!



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**To place an order or
receive technical assistance:**

SigmaAldrich.com/customersupport

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64293 Darmstadt
Darmstadt, Germany

