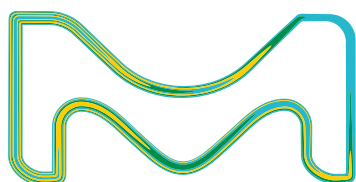


# A Precise & Mobile Laboratory

## 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 our 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.

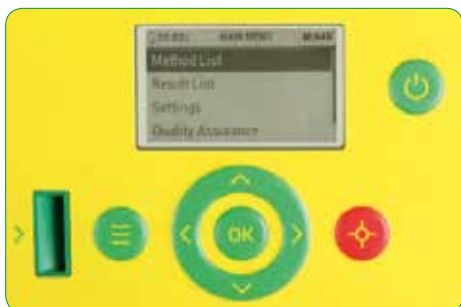
The Reflectoquant® system consists of test strips and reflectometers. This mobile laboratory gives you all the tools you need for high quality analyses for a wide spectrum of sample materials from food, water, and industrial to environmental samples.

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

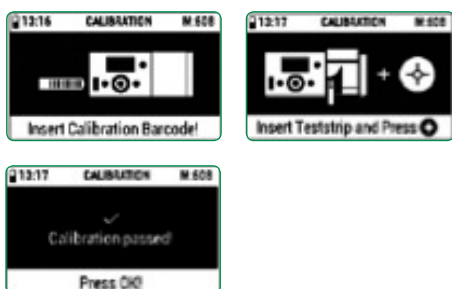


## 1. Intuitive menu navigation

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.

### 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 the Spectroquant Prove® 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. Our Spectroquant® Move system has 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 | Ord. No      | Method                                | Type           |
|----------|--|--|--------------|--------------|---------------------------------------|----------------|
| <b>A</b> | Ammonium Test                              | 0.2 – 7.0 mg/L NH <sub>4</sub>                 | 50           | 1.16892.0001 | Indophenol blue                       | Reagent, incl. |
|          | Ammonium Test                              | 5.0 – 20.0 mg/L NH <sub>4</sub>                | 50           | 1.16899.0001 | Indophenol blue                       | Reagent, incl. |
|          | Ammonium Test                              | 20 – 180 mg/L NH <sub>4</sub>                  | 50           | 1.16977.0001 | Nessler                               | Reagent, incl. |
|          | Ascorbic Acid Test                         | 25 – 450 mg/L ascorbic acid                    | 50           | 1.16981.0001 | Phosphomolybd. blue                   |                |
| <b>B</b> | Blank Strip                                |  | 50           | 1.16730.0001 |                                       |                |
| <b>C</b> | Calcium Test                               | 5 – 125 mg/L Ca                                | 50           | 1.16125.0001 | Phthalein complexone                  |                |
|          | Chlorine Test (free chlorine)              | 0.5 – 10.0 mg/L Cl <sub>2</sub>                | 50           | 1.16896.0001 | Redox reaction                        | Reagent, incl. |
| <b>F</b> | Formaldehyde Test                          | 1.0 – 45.0 mg/L HCHO                           | 50           | 1.16989.0001 | Triazole                              | Reagent, incl. |
| <b>G</b> | Glucose Test                               | 1 – 100 mg/L Glucose                           | 50           | 1.16720.0001 | Enzymatic reaction                    |                |
| <b>H</b> | Hydroxymethylfurfural Test                 | 1.0 – 60.0 mg/L HMF                            | 50           | 1.17952.0001 | Enzymatic reaction                    |                |
| <b>I</b> | Iron Test                                  | 0.5 – 20.0 mg/L Fe(II)                         | 50           | 1.16982.0001 | Triazine                              |                |
| <b>L</b> | Lactic Acid Test                           | 3.0 – 60.0 mg/L lactic acid                    | 50           | 1.16127.0001 | Enzymatic reaction                    |                |
| <b>M</b> | 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                    |                |
| <b>N</b> | Nitrate Test                               | 3 – 90 mg/L NO <sub>3</sub>                    | 50           | 1.16995.0001 | Modified Griess' reaction             |                |
|          | Nitrate Test                               | 5 – 225 mg/L NO <sub>3</sub>                   | 50           | 1.16971.0001 | Modified Griess' reaction             |                |
|          | Nitrite Test                               | 0.5 – 25.0 mg/L NO <sub>2</sub>                | 50           | 1.16973.0001 | Griess' reaction                      |                |
|          | Nitrite Test                               | 0.03 – 1.00 g/L NO <sub>2</sub>                | 50           | 1.16732.0001 | Aromatic amine                        |                |
| <b>P</b> | 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 <sub>2</sub> O <sub>2</sub>  | 50           | 1.16974.0001 | Enzymatic reaction                    |                |
|          | Peroxide Test                              | 20.0 – 100 mg/L H <sub>2</sub> O <sub>2</sub>  | 50           | 1.17968.0001 | Enzymatic reaction                    |                |
|          | Peroxide Test                              | 100 – 1,000 mg/L H <sub>2</sub> O <sub>2</sub> | 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 <sub>4</sub>                   | 50           | 1.16978.0001 | Phosphomolybd. blue                   | Reagent, incl. |
|          | Potassium Test                             | 0.25 – 1.20 g/L K                              | 50           | 1.16992.0001 | Dipicrylamine                         | Reagent, incl. |
| <b>S</b> | Sucrose Test                               | 0.25 – 2.50 g/L                                | 50           | 1.16141.0001 | Enzymatic reaction                    | Reagent, incl. |
|          | Sulfite Test                               | 10 – 200 mg/L SO <sub>3</sub>                  | 50           | 1.16987.0001 | Nitroprusside/<br>Zn-hexacyanoferrate |                |
| <b>T</b> | Total Hardness Test                        | 0.1 – 30.0 °d                                  | 50           | 1.16997.0001 | Phthalein complexone                  |                |
|          | Total Sugar Test<br>(glucose and fructose) | 65 – 650 mg/L total sugar                      | 50           | 1.16136.0001 | Enzymatic reaction                    | Reagent, incl. |

|  | 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 |   |
|--|--------------------|--------------|--------|---------------|---------------|-------------|-------------------|-----------------------------|----------------|----------------------------|------------------|---------------|----------|----------------|------------|-------------|----------------------|----------------|---|
|  | 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                                 |
|  |                    | ■            | ■      |               | ■             | ■           | ■                 |                             | ■              | ■                          | ■                | ■             |          | ■              | ■          | ■           |                      |                | 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<br>200 measurement results<br>50 RQcheck results<br>50 calibration results |
| Light source:          | 4 LEDs, green/red, double optics   |
| Power source:          | 4 × 1.5-V batteries (AAA)  |
| Display:               | Reflective LCD Graphic Module<br>(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   | Mfr. No.     | Thomas No.     |
|---|--------------|----------------|
| Reflectoquant® RQflex® 20 reflectometer                 | 1.17246.0001 | —              |
| Reflectoquant® RQCheck Set for RQflex® 20 reflectometer | 1.17247.0001 | —              |
| Reflectoquant® RQcalibration set                        | 1.16954.0001 | <b>C995R27</b> |
| Reflectoquant® Strip Adapter                            | 1.17267.0001 | —              |



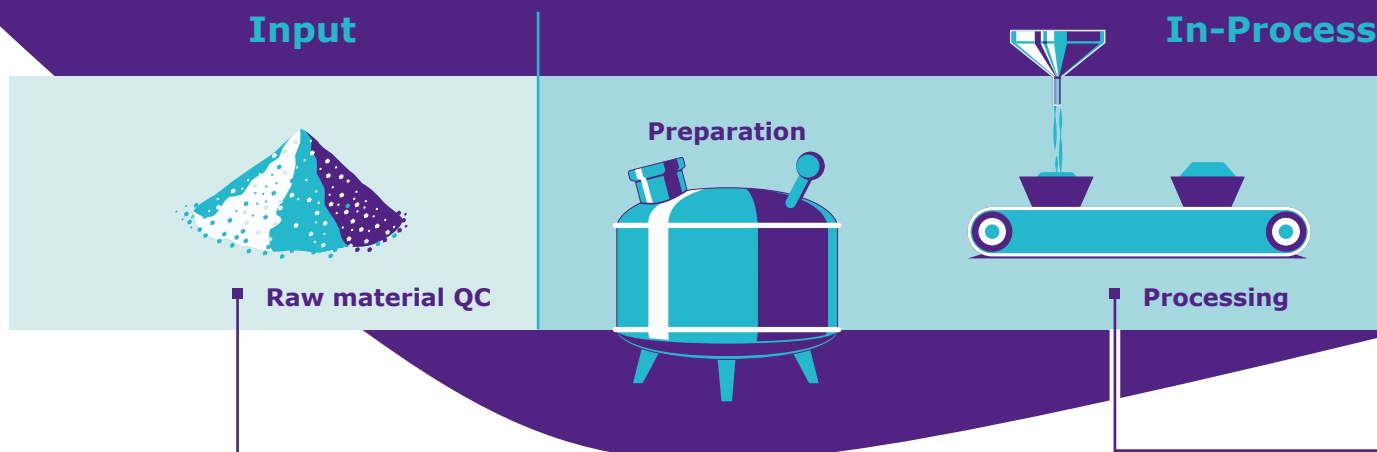
## Get all the tools you need for precise analysis from one trusted source

**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.

# **food & beverage workflow**



## 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



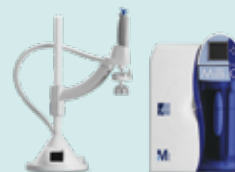
### Microbial and pathogen testing

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



### Water purification system

- Milli-Q® system

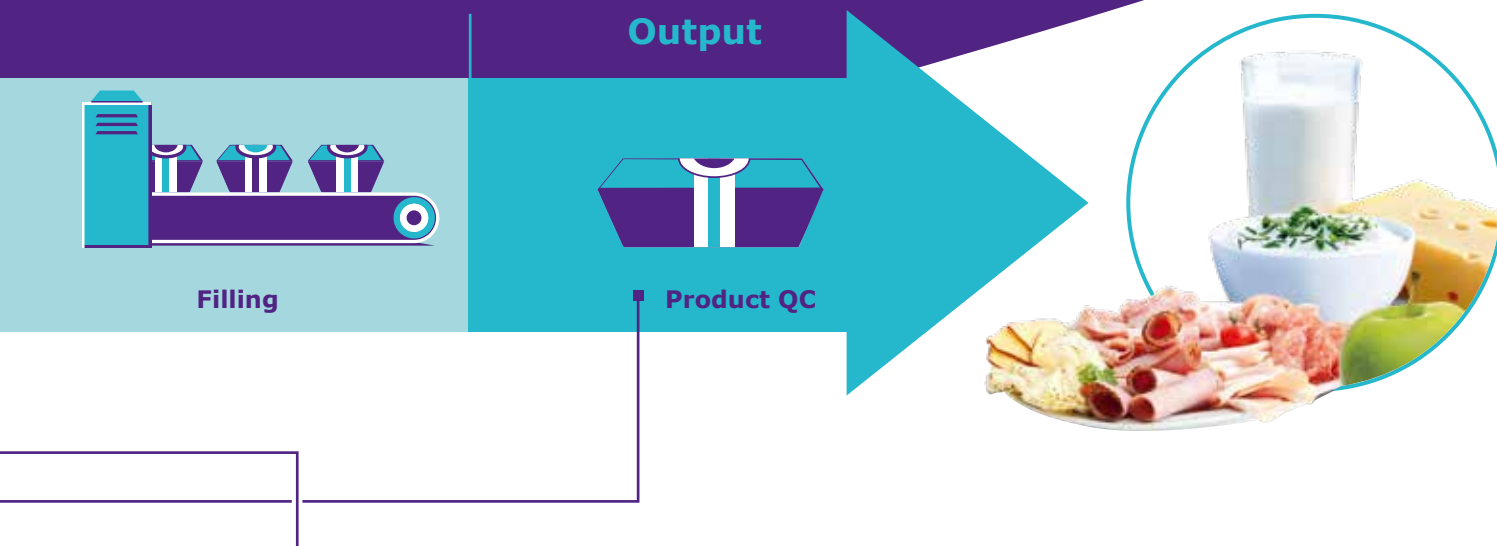


### Ingredient and nutritional testing

- 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



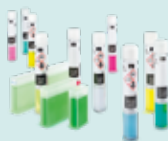
### Quantitative testing Test strips

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



### Photometry

- Move 100 and Move Cl<sub>2</sub>/O<sub>3</sub>/ClO<sub>2</sub>/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



# Supelco®

Analytical Products



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