



COD measurement in waste water (rapid-digestion method)

Photometric determination of chromate consumption
subsequent to digestion in 20 min

Materials and reagents:

Reagents

- Cat.No. 114560 Spectroquant® COD Cell Test, measuring range 4.0 - 40.0 mg/l*
 - Cat.No. 101796 Spectroquant® COD Cell Test, measuring range 5.0 - 80.0 mg/l
 - Cat.No. 114540 Spectroquant® COD Cell Test, measuring range 10 - 150 mg/l
 - Cat.No. 114895 Spectroquant® COD Cell Test, measuring range 15 - 300 mg/l
 - Cat.No. 114690 Spectroquant® COD Cell Test, measuring range 50 - 500 mg/l
 - Cat.No. 114541 Spectroquant® COD Cell Test, measuring range 25 - 1500 mg/l
 - Cat.No. 114691 Spectroquant® COD Cell Test, measuring range 300 - 3500 mg/l
 - Cat.No. 114555 Spectroquant® COD Cell Test, measuring range 500 - 10 000 mg/l
 - Cat.No. 101797 Spectroquant® COD Cell Test, measuring range 5 000 - 90 000 mg/l
- *not compatible with Move 100

Instruments

- Cat.No. 173016 Spectroquant® VIS Spectrophotometer Prove 100 or
- Cat.No. 173017 Spectroquant® UV/VIS Spectrophotometer Prove 300 or
- Cat.No. 173018 Spectroquant® UV/VIS Spectrophotometer Prove 600 or
- Cat.No. 109748 Spectroquant® Photometer NOVA 60A or
- Cat.No. 173632 Spectroquant® Colorimeter Move 100
- Cat.No. 171201 Spectroquant® Thermoreactor TR 420 or
- Cat.No. 171202 Spectroquant® Thermoreactor TR 620

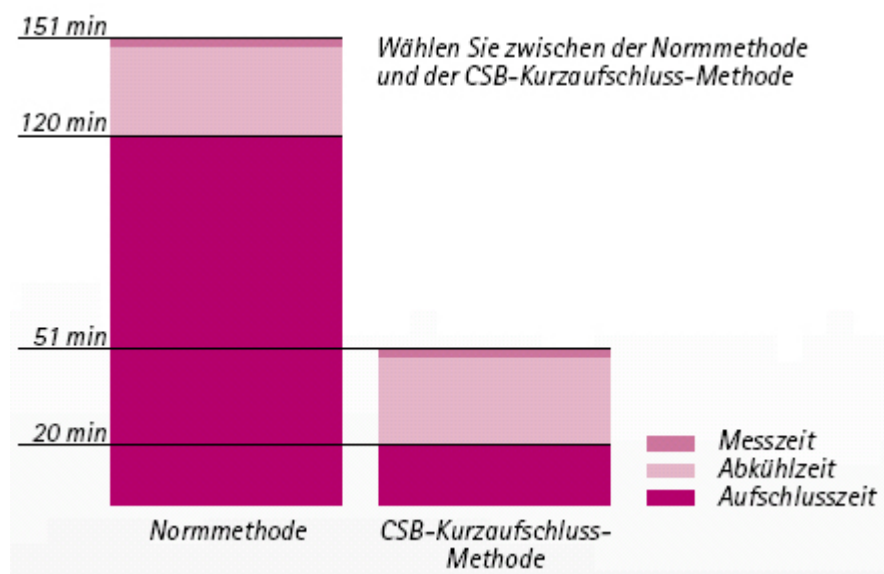
COD rapid-digestion method

According to the relevant standard (ISO 15705), the COD determination with cell tests is performed at 148 °C, since the COD/water mixture in the cell already boils at this temperature. Higher digestion temperatures are thus not appropriate in this case. The conventional boiling time is 120 minutes: However, as practical experiments have shown, most wastewater samples are already adequately digested within the space of just 20 minutes.

Besides the standard method we therefore offer a COD rapid-digestion method that has the following advantages:

- Standard-compliant digestion temperature (148 °C)
- No additional investments are necessary, since standard thermoreactors can be used
- Depending on the number of samples, the user can choose between thermoreactors with twelve or 24 wells, meaning that a large number of samples can be processed simultaneously.

Application



Sample preparation:

Both types of the thermoreactors allow entering of up to seven customised methods. Refer to the instructions in chapter 5.6.1 how to enter customised method in the instrument's manual.

Select and enter 148 °C digestion temperature as well as 20 min total heating time. Switch the thermoreactor to manual start in setup menu. Start preheating. If the final temperature 148 °C has been reached, the symbol S will be displayed indicating that the thermoreactor is in standby mode. Insert the prepared tubes and wait until the temperature has been equilibrated to 148 °C again. Then press run/enter key again to start the timer and heating cycle. If the 20 min heating time is over, take the hot tubes out of the thermoreactor and put it into a stand. Let cool down to approx. > 40 °C and swirl to mix the tube content. Let suspended solids settle and measure the value as per instruction of the photometer manual for the test used.

We know from our practical experience and from customers' response, that most of the wastewater samples will show identical results when using the 20 minutes digestion time instead of the 120 minutes digestion time.

Analysis:

Determine with one of the above-mentioned test kits.



Ordering Information

Product	Catalog No.
Prove 100 VIS Spectrophotometer 4 nm spectral bandwidth Spectroquant®	173016
Prove 300 UV/VIS spectrophotometer 4 nm spectral bandwidth Spectroquant®	173017
Prove 600 UV/VIS spectrophotometer 1,8 nm spectral bandwidth Spectroquant®	173018
Photometer NOVA 60 A Spectroquant®	109752
Colorimeter Move 100 Spectroquant®	173632
COD Cell Test Method: photometric 4.0 - 40.0 mg/l Spectroquant®	114560
COD Cell Test Method: photometric 5.0 - 80.0 mg/l Spectroquant®	101796
COD Cell Test Method: photometric 10 - 150 mg/l Spectroquant®	114540
COD Cell Test Method: photometric 25 - 1500 mg/l Spectroquant®	114541
COD Cell Test Method: photometric 15 - 300 mg/l Spectroquant®	114895
COD Cell Test Method: photometric 50 - 500 mg/l Spectroquant®	114690
COD Cell Test Method: photometric 300 - 3500 mg/l Spectroquant®	114691
COD Cell Test Method: photometric 500 - 10000 mg/l Spectroquant®	114555
COD Cell Test Method: photometric 5000 - 90000 mg/l Spectroquant®	101797
Thermoreactor 24 holes, 7 preinstalled programmes and 8 freely selectable programmes TR 420 Spectroquant®	171201
Thermoreactor 2 x 12 holes in 2 heating zones, temperature and time separately controllable for each zone, 7 preinstalled programmes and 8 freely selectable programmes TR 620 Spectroquant®	171202