

OxiTop® i newly defined

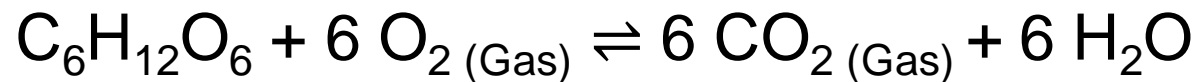
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Respirometry – Principle of degradation of organic carbons

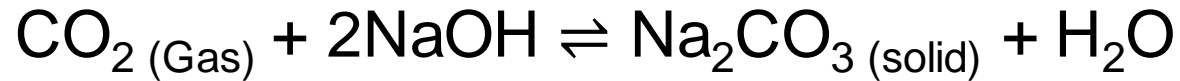
The metabolism of microorganisms usually needs oxygen.

The digestion of carbon containing substances produces carbon dioxide CO_2



Pnciple of Respirometry

The chemical absorption of carbon dioxide in a closed vessel causes an underpressure which is a measure for the oxygen consumption.



Biochemical Oxygen Demand (BOD)

- Sum parameter in water, soil and waste analysis for characterization and quantification of metabolism in aerobic processes.
- Introduced in 1912: „Final Report of the Commissioners appointed to inquire and report what Methods of Treating and Disposing of Sewage (...) may properly be adopted“ (1915) included in the “Eight Report” (1912) (Royal Commission on Sewage Disposal)

The Past: A Story of Success!



- 24 year unaltered in the market
- Replacement of old mercury manometers
- Easiest use
- Far more than 200,000 heads sold

In Spite of This: It's time for something new— Time for....

OxiTop[®]-i



OxiTop[®]- i: Secure, easy, convenient

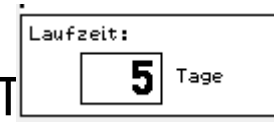
- Easy to identify: Assign a manual ID-no.



- Easy to select:

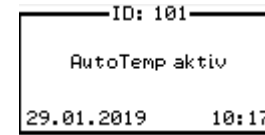


- Measuring period 1 – 7 T
- Units: mg/l, hPa, Δ hPa, digit
- Sample volume (ml): 22,5 43,5 97 164 250 365 432



- Start the measurement:

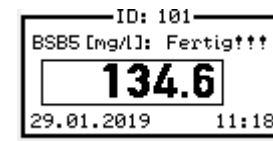
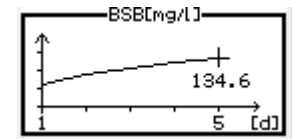
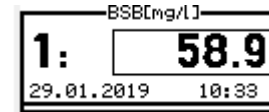
- AutoTemp is running



OxiTop[®]- i: Secure, easy, convenient

- Check your measurement:

- Call up intermediate results
- Read the curve
- Get final results
- Terminate the measurement



- Additional convenient settings

- Languages (D, E, F, Sp)
- Illumination
- Signal LED (Blue: Measurement, Green: Ready, Red: Attention)
- Display off
- ID setting

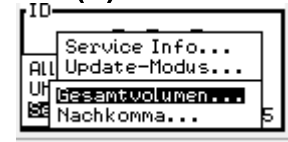


OxiTop[®]- i: Secure, easy, convenient

- Adjusting date/time:
- Additional: Wireless and Update only for IDS heads!



- Internal function: Setting of bottle volume(!)
- Special function OxiTop[®] PT Routine



Operating principle from handhelds: long press/short press!

Fully automatic:

Calculation of BOD using the common gas equation

$$\text{BOD} = \frac{M(\text{O}_2)}{RT_m} \cdot \left(\frac{V_{\text{tot}} - V_{\text{fl}}}{V_{\text{fl}}} + \alpha \frac{T_m}{T_0} \right) \cdot \Delta p(\text{O}_2)$$

$M(\text{O}_2)$ Molecular weight O_2 (32000 mg/mol)

R Gas constant (83,144 L hPa/(mol K))

BOD_5

α Bunsen absorption factor (0,03103)

$\Delta p(\text{O}_2)$ Differential partial pressure oxygen(hPa)

T_0 abs. temperature (273,15 K)

T_m temperature of measurement (293,15 K)

V_{tot} bottle volume (mL)

V_{fl} sample volume

Important points

- Menu controlled LCD display
- Selection of sample volume for direct output of BOD in mg/l
- Adjustable measuring period between 1 and 7 days.
- Representation of measured values in a curve at the display- Easy checking of the measurement
- Display of BOD in mg/l – No conversion necessary
- Control-LED for signaling the current operating state
- ID No. for sample identification
- Robust plastic housings in blue and and cosmic grey for easy assignment of inlet and outlet

And everything else remains as it is????



**Yes, without
Ifs and Buts!**

And everything else remains as it is????



All accessories can be used without change:

- Bottles PF 600
- Stirring platforms IS 6 and IS 12 (new: now cosmic grey)
- Nitrification inhibitor NTH 600
- Sodium hydroxide pellets NHP 600
- Thermostatic cabinets TS 608...TS 1008 and the OxiTop[®] Box

Some specs....

OxiTop [®] -i G resp. OxiTop [®] -i B	
Measuring range (hPa)	500 to 1250
BOD Measuring range (mg/l)	0 to 4000 mg/l
Selectable measuring period (Tage)	1 to 7
Selectable sample volume (ml)	22.7 ; 43.5 ; 97.0 ; 164 ; 250 ; 365 ; 432
Display	LCD graphic, backlit, menu controlled
Control LED	RGB
Battery	1 x CR 2450

Old and new...

Old		New	
208210	OxiTop® IS 6	208260	OxiTop®-i IS 6
208211	OxiTop® IS 12	208262	OxiTop®-i IS 12
208212	OxiTop® IS 12-6	-	-
208800	OxiTop® GN	208270	OxiTop®-i G
208810	OxiTop® GB	208272	OxiTop®-i B
208812	OxiTop®- 6	208276	OxiTop®-i 6
208813	OxiTop®-10	208278	OxiTop®-i 12
208814	OxiTop®- 2	208274	OxiTop®-i 2
208817	OxiTop® SET-6	208266	OxiTop®-i SET 6
208818	OxiTop® SET-10	-	-
208819	OxiTop® SET-2	208264	OxiTop®-i SET 2

Good Luck!



a xylem brand