



Difficulties in Determination of Alkalinity

БДС EN ISO 9963-1: 2000

- ❖ Use for alkalinity up to 20 mmol/l
- ❖ Single end- point titration at pH = 4.5

Calculating the Result

- $$A_T = \frac{C(HCl) * V_6 * 1000}{V_4}, \quad (1)$$

Where:

V_6 - volume of the HCl solution used for titration in ml

V_4 - volume of the sample used for determination in ml (usually 100ml)

$C(HCl)$ - real concentration of the HCl solution, calculated by formula in mol/l (usually ~0,01N)



$$C (HCl) = \frac{m * V_1}{53 * (V_2 - V_3)}, \quad (2)$$

Where:

m- mass of the sodium carbonate, used for preparing the standard solution in grams

V_1 - volume of standard solution of sodium carbonate used to be titrated in ml

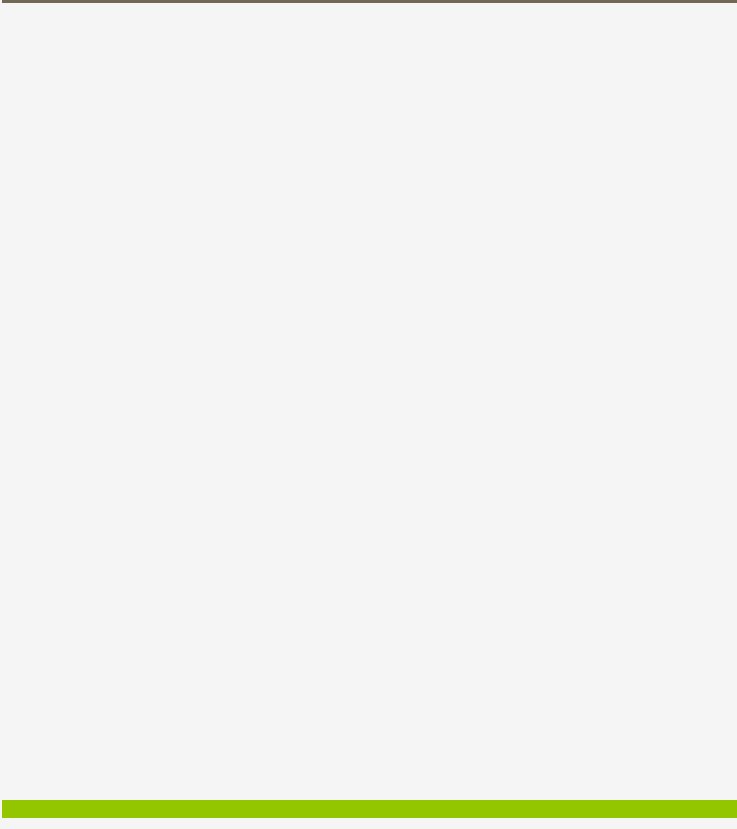
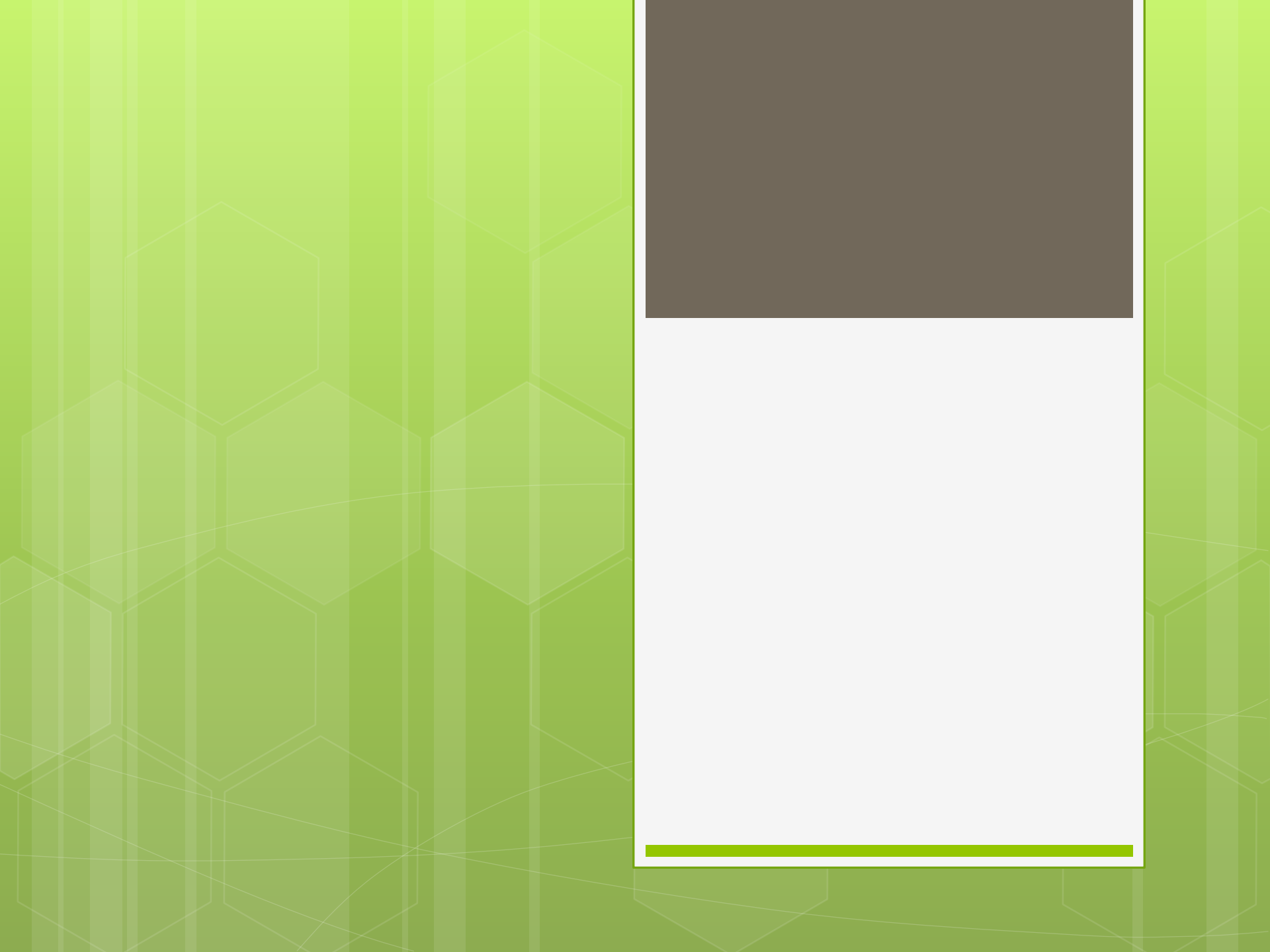
V_2 - volume of the HCl solution used for titrating the standard solution in ml

V_3 - volume of the HCl solution used for the blank in ml

53- equivalent of Na_2CO_3

Quality Control

- ❖ pH meter check and calibration before measuring
- ❖ Use of buffer solutions
- ❖ Use of spike samples
- ❖ Checking all of the measuring vessels (e.g. cylinders)



БДС EN ISO 9963- 2: 2000

- ❖ Determination of alkalinity from 0,01 to 4,0 mmol/l
- ❖ Carbonate alkalinity equals to total alkalinity.
- ❖ Single end- point at $\text{pH} = 5.4$



$$A = \frac{C(\text{CHI}) * (V_5 - V_6) * 1000}{V_4}, \quad (3)$$

Where:

C(CHI)- concentration of HCl (usually 0,01 N)

V₄- volume of the sample (usually 50 ml)

V₅- volume of HCl used for titrating the sample

V₆- volume of HCl used for titrating the blank

Thank you

