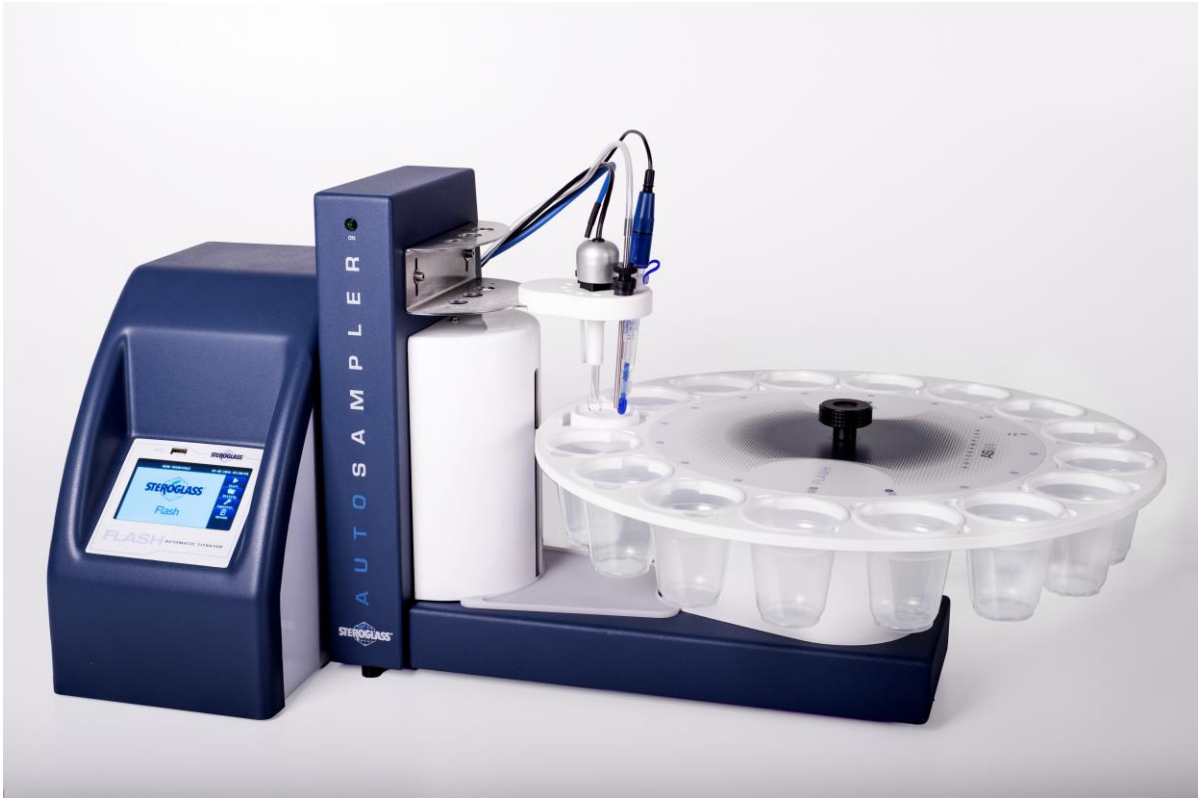
FLASH TITRATOR
Standardization of NaOH with Potassium Hydrogen Phthalate



PRINCIPLE OF THE METHOD

The procedure for the standardization of soda allows us to determine the real concentration of NaOH that is being used as a titrant. Over time, soda tends to lose its titer because OH- can react with CO2 to form bicarbonate. Consequently the OH-carbonate fraction is no longer available to act as a titrant.
Sodium hydroxide solutions can be standardized by titrating a known aliquot of potassium hydrogen phthalate ($C_8H_5KO_4$ - primary salt) using a combined pH electrode.

PREPARATION OF THE STANDARD

To standardize **0.1 M NaOH solutions**: weigh exactly an aliquot of a potassium hydrogen phthalate of about 0.1 g (± 0.0001 g) directly into the titration vessel and add about 40 ml of distilled water (CO_2-free).

To standardize **1 M NaOH solutions**: weigh exactly an aliquot of a potassium hydrogen phthalate of about 1.0 g (± 0.0001 g) directly into the titration vessel and add about 40 ml of distilled water (CO_2-free).

To standardize solutions with intermediate concentrations between **0.1 and 1 M**, weigh an aliquot of primary salt between 0.1 and 1 g (**e.g. approximately 0.25 g to standardize 0.25 M NaOH**).

PRELIMINARY OPERATIONS

It is strictly necessary to first calibrate the electrode using pH 7.0 and 10.0 buffers.

PROCEDURE

In the Samples screen, enter the weight value measured with the scale in the “weight” field.

It is recommended that this standardization procedure be carried out on 3 phthalate samples: the standardization tests can be accessed from *Utility*, *Results*, and *Standard* and the average can be calculated. The average concentration value obtained can be saved in the test methods of interest that use NaOH as a titrant.

A specific STD NaOH standardization method can be created with the following parameters:

Method Type	*End Point*
Method Name	*NaOH Standard*
Descript./Sample no.	*Sample*
Pump level N	*0*
Pump level sec.	*0*
Degassing sec:	*0*
Stirrer speed	*7*
Pre-stirring time	*40 sec*
Measurement type	*pH*
Initial auto-stability (pH)	*0.02*
Initial auto-stability time (s)	*5*
Initial addition	*0.00*
Initial stirring	*3*
Titrant burette	*2*
Addition type	*Progressive*
Addition (ml)	*0.25*
Limit volume (ml)	*10*
Polarization value	*NA*
End Point value (pH)	*8.3*
Auto-stability (pH)	*0.05*
Auto-stability time (s)	*1*
Max. stability time (s)	*60*
End titration delay	*3*
Factor	*4.8964*
Concentration (mol/l)	*1.0*
Sample volume (ml)	*0.0*
Result unit	*Factor*
Number decimals	*2*
Approaching factor	*250*
Blank (ml)	*0.000*
Washing type	*Washing position*
Washing time (s)	*5*
Reagent standardization	*SI*
Equation type	*DEFAULT*

Result in mol/l:
factor x titrant concentration x sample weight / equivalent V dispensed

- An inflection program can be used for standardization instead of a pH 8.3 end point program;

- Some parameters of the program shown here have been compiled as an indication: they can be optimized according to the operating conditions and the samples analyzed, in order to improve the accuracy and/or speed of the analysis.