

## Method Abstract #128

### Gran Alkalinity

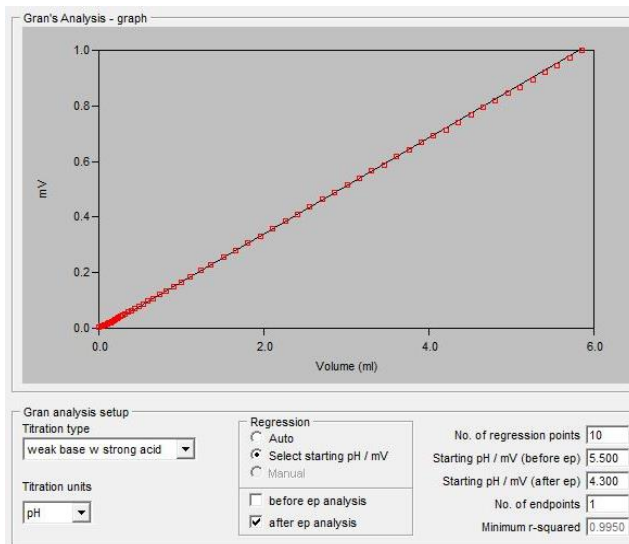
#### Scope and Application

Gran alkalinity method is a more accurate technique used explicitly for low level alkalinity samples. It is performed on samples with a pH less than 7.0.

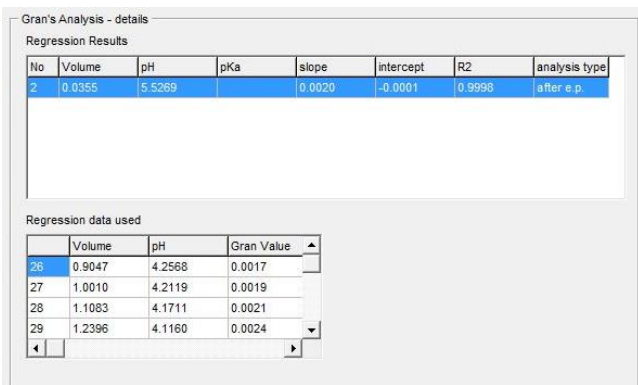
#### Method Summary

The alkalinity titration is carried well past the total inflection point to about pH 3.0. A linear mathematical extrapolation of the titration curve is performed and is used to calculate the equivalence point.

**Sample Gran Chart**



**Sample Gran Correlation**



Gran's Analysis - details

Regression Results

No	Volume	pH	pKa	slope	intercept	R2	analysis type
2	0.0355	5.5269		0.0020	-0.0001	0.9998	after e.p.

Regression data used

	Volume	pH	Gran Value
26	0.9047	4.2568	0.0017
27	1.0010	4.2119	0.0019
28	1.1083	4.1711	0.0021
29	1.2396	4.1160	0.0024

Gran analysis setup

Titration type: weak base w strong acid

Regression:  Auto,  Select starting pH / mV,  Manual

Titration units: pH

No. of regression points: 10

Starting pH / mV (before ep): 5.500

Starting pH / mV (after ep): 4.300

No. of endpoints: 1

Minimum r-squared: 0.9950

Regression:  before ep analysis,  after ep analysis

RSD values are better than those specified in Standard Methods.