OIV-MA-VI-01 Determination of total acidity content

Type II method

1. Definition

The total acidity refers to a vinegar whose acidity can be titled in the presence of phenolphthalein in an alcoholic solution, used as indicator.

2. Principle

Neutralization of acids in sample by alkali solution.

3. Reagents

3.1. Solution of sodium hydroxide 0.5 M

3.2. Indicator – phenolphthalein alcoholic solution at 1 g per 100 ml.

In a calibrated flask, capacity 100 ml, dissolve 1 g of phenolphthalein with a sufficient quantity of ethanol at 95% (v/v) and bring up to the line.

4. Equipment and utensils

Standard laboratory equipment.

5. Preparation of sample

Thoroughly mix the sample by stirring and filter if necessary.

6. Technique [1]

In a 250-mL conical flask, add 10 mL of vinegar. Add water, free of carbon dioxide, so that the solution is barely coloured. Add a few drops of the indicator (3.2) and titrate with the sodium hydroxide solution (3.1) until a persistent pink colour is obtained.

Note: Titration may also be monitored by potentiometry, taking into consideration the respective equivalence point.

7. RESULTS

7.1. Calculation

Considering:

- **V** the volume in ml of the sodium hydroxide solution using in titling.

The total acidity content expressed in grams of acetic acid per l of sample will be given by

3 V.

7.2. Presentation

Round off the results in grams of acetic acid per liter to the nearest decimal.

8. Interlaboratory validation (hitos et al., 2000)

Units: % (m/V)

Sample	r	S_r	RSD_r	R	S_R	RSD_R	RSD_R (Horwitz)	Horrat Index
1 – 0.17% (m/v)	0.0628	0.022	0.27	0.1570	0.560	0.67	2.90	0.23
2 – 0.17% (m/v)	0.0742	0.026	0.23	0.2127	0.076	0.67	2.78	0.24
3 – 0.08% (m/v)	0.0617	0.022	0.20	0.2197	0.078	0.70	2.78	0.25
4 – 0.07% (m/v)	0.0559	0.020	0.17	0.1543	0.055	0.46	2.75	0.17
5 – 0.08% (m/v)	0.0738	0.026	0.23	0.3544	0.0127	1.13	2.78	0.41

9. Bibliography

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[1] CPIV has described a method, using the potentiometric titration