



DRAFT TANZANIA STANDARD

Methods of sampling and test for crude and refined glycerine
Part 5: Determination of alkalinity and acidity — Volumetric method

Draft Standard for Comment Only

TANZANIA BUREAU OF STANDARDS

Foreword

This Draft Tanzania Standard was prepared under the direction of Cosmetics and Cremeries Technical Committee, which is under the supervision of Chemicals Divisional Standards Committee.

For the purpose of deciding whether a particular requirement of this Tanzania Standard is complied with, the final value, observed or calculated, expressing the result of a test or an analysis, shall be rounded off in accordance with TZS 4 (see clause 2).

This second edition cancels and replaces the first edition (TZS 1199-5:2015), which has been technically revised.

Methods of sampling and test for crude and refined glycerine

Part 5: Determination of alkalinity and acidity — Volumetric method

1 Scope

This Draft Tanzania Standard specifies a titrimetric method for the determination of the alkalinity or acidity of glycerines for industrial use.

2 Normative references

TZS 1199-1, *Crude and refined glycerine — Methods of sampling and test part 1: General*

TZS 1199-2, *Crude and refined glycerine — Methods of sampling and test part 2: Methods of sampling*

TZS 59/ISO 3696, *Water for analytical laboratory use — Specification and test method*

3 Principle

Titration of a test portion with a Standard volumetric solution of hydrochloric acid or sodium hydroxide in the presence of phenolphthalein as indicator.

4 Reagents

During the analysis, use only reagents of recognized analytical grade.

4.1 Water free from carbon dioxide, (see TZS 59/ISO 3696 on clause 2).

4.2 Sodium hydroxide, 0.1 M Standard volumetric solution.

4.3 Hydrochloric acid, 0.1 M Standard volumetric solution.

4.4 Phenolphthalein indicator, 10 g/L ethanolic solution.

Dissolve 1 g of phenolphthalein in 95 % (v/v) ethanol and make up to 100 ml with the same ethanol. Add, drop by drop, approximately 0.02 M sodium hydroxide solution until the first appearance of a pink colour.

5 Apparatus

Ordinary laboratory apparatus and microburette graduated in 0.01 ml.

6 Procedure

6.1 Test portion

Weigh, to the nearest 0.001 g, 10 g & 0.1 g of the test sample (see TZS 59/ISO 3696 on clause 2).

6.2 Determination

Dilute the test portion (see 6.1) in about 100 mL of the water (see 4.1). Add 3 drops of the phenolphthalein solution (see 4.4) homogenize and note the colour obtained. Depending on the particular case, titrate the alkalinity (pink colour is observed after addition of an indicator) with the standard volumetric hydrochloric acid solution (see 4.3) until the indicator is decolorized, or titrate the acidity (colourless after addition of an indicator) with the standard volumetric sodium hydroxide solution (see 4.2) until the first persistent pink colour appears. Use an ordinary burette, or, if the volume of the standard volumetric solution is less than 2 mL, the microburette.

7 Expression of results

The alkalinity or acidity, expressed conventionally in milliequivalents per 100 g, is given by the formula;

$$V \times \frac{1}{10} \times \frac{100}{m} = \frac{10 V}{m}$$

where by

V is the volume, in millilitres, of the standard volumetric solution (see 4.2) or (see 4.3), used for the titration;

m is the mass, in grams, of the test portion (see 6.1).

NOTE – If the concentration of the standard volumetric solution used is not exactly as specified in the list of reagents, an appropriate correction should be made.

8 Test report

The test report shall include the following particulars:

- The reference of the method used;
- The results and the method of expression used;
- Any unusual features noted during the determination;
- All operations not included in this Tanzania Standard or regarded as optional.

Bibliography

TZS 1199-5:2015 *Methods of sampling and test for crude and refined glycerine Part 5: Determination of alkalinity and acidity — Volumetric method*

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