



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 5173-2018

**Surface active agents -- Detergents -- Determination of
anionic-active matter content -- Direct two-phase titration
procedure**

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Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 5173-1995 "Surface active agents and detergents

- Determination of anionic-active matter by direct two-phase titration procedure".

Compared with GB/T 5173-1995, the main technical changes of this Standard are as follows.

- ADD the determination of alpha-sodium alkenyl sulfonate (AOS) (see 7.2);
- Delete the selective use of ethidium bromide (see 4.8.1.3 of the 1995 edition);
- Modify the recommended sampling mass of test portion (see 7.1; 7.1 of the

1995 edition);

- Modify the constant volume of test portion (see 7.2; 7.2 of the 1995 edition);
- Modify the formulas for calculating the anionic-active matter content (see 8.1; 8.1 of the 1995 edition);
- Delete sodium lauryl sulfate (see 4.5 of the 1995 edition);
- Delete the preparation and calibration process of benzethonium chloride

and acidic mixed indicator solution; ADD reference standards (see 4.6 and

4.8 of the 1995 edition).

This Standard uses the redraft rules to modify and adopt ISO 2271.1989

"Surface active agents - Detergents - Determination of anionic-active matter by manual or mechanical direct two-phase titration procedure".

Compared with ISO 2271.1989, the structure of this Standard is adjusted as follows.

- Delete the sections on automatic titration instrument of 5.5 and 5.6 of ISO 2271.1989;
- ADD "5.5 Beaker";
- ADD the calculation formula expressed in mmol/g in 8.1;
- Merge 4.2 and 4.3 in ISO 2271.1989 into 4.2 in this Standard. Modify 4.4 in ISO 2271.1989 into 4.3 in this Standard. Delete 4.5 Sodium lauryl sulfate in ISO 2271.1989. Delete preparation and calibration process of 4.6 benzethonium chloride and 4.8 acidic mixed indicator solution; ADD the reference standards. Modify 4.6 in ISO 2271.1989 into 4.5 in this Standard. Modify 4.7 in ISO 2271.1989 into 4.4 in this Standard;
- ADD "e) Test date and test personnel" in Clause 9 "Test report".

There are technical differences between this Standard and ISO 2271.1989. The clauses involved in these differences have been marked by a vertical single line (|) at the blank of the outer margin. Appendix A gives a list of corresponding technical differences and their causes.

This Standard also makes the following editorial changes.

- Modify standard name;
- Delete informative Appendix A;
- Modify precautions for the use of chloroform (see 4.1; 4.1 of the 1995 edition).

This Standard was proposed by China National Light Industry Council.

This Standard shall be under the jurisdiction of National Technical Committee

272 on Surface Active Agents and Washing Supplies of Standardization

Administration of China (SAC/TC 272).

Drafting organizations of this Standard. China Research Institute of Daily Chemistry Co., Ltd. [China Washing Supplies Quality Supervision Inspection Center (Taiyuan)], Zanyu Technology Group Co., Ltd., Xi'an Kaimi Co., Ltd., Shanxi Institute of Standardization, Shenzhen Biogmi Biotechnology Co., Ltd. Main drafters of this Standard. Yao Chenzhi, Xue Wei, Ge Zan, Yu Wen, Duan Pingmei, Zhao Hongmei, Guo Hongtao.

The previous editions of the standard replaced by this Standard were released as follows.

- GB/T 5173-1985, GB/T 5173-1995.

Surface active agents - Detergents - Determination of anionic-active matter content - Direct two-phase titration procedure

1 Scope

This Standard specifies the direct two-phase titration procedure for determination of anionic-active matter content of anionic surface active agents and detergents.

2 Normative references

The following documents are indispensable for the application of this document. For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

3 Principle

In a two-phase medium of water and chloroform, in the presence of an acidic

mixed indicator solution, use a cationic surface active agent (benzethonium chloride) to titrate, to determine anionic-active matter.

4 Reagents

Unless otherwise specified, the analysis is conducted using the confirmed analytically pure reagents. Water is Grade III water in accordance with GB/T 6682.

5 Apparatus

General laboratory instrument and the following.

6 Preparation of samples

In accordance with the provisions of Clause 4 of GB/T 13173-2008, prepare and store test samples.

7 Procedures

Warning - Due to the toxicity of chloroform, the corresponding operation of direct two-phase titration shall be performed in a fume hood or a well-ventilated environment.

8 Expression of results

For the same sample, using the same test method, in the same laboratory, measure by the same operator using the same instrument in a short time interval, the difference between the results of two consecutive determinations shall not exceed 1.5% of the mean.

9 Test report

The test report shall include the following.

Appendix A

(Informative)

Technical differences between this Standard and ISO 2271.1989 and their causes