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

GB/T 13531.1-2008

Replacing GB/T 13531.1-2000

**General methods on determination of cosmetics -
Determination of pH**

化妆品通用检验方法 pH值的测定

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Foreword

GB/T 13531 General methods on determination of cosmetics is divided into three parts:
GB/T 13531.1 General methods on determination of cosmetics - Determination of pH; GB/T 13531.3 General methods on determination of cosmetics - Determination of turbidity; GB/T 13531.4 General methods on determination of cosmetics - Determination of relative density.

This part is Part 1 of GB/T 13531.

This part replaces GB/T 13531.1-2000 General methods on determination of cosmetics - Determination of pH.

The main change with respect to GB/T 13531.1-2000 is that the dilution ratio in 6.1.1 has been modified.

This part was proposed by the China National Light Industry Council.

This part is under the jurisdiction of the National Technical Committee on Fragrance, Flavour and Cosmetic Standardization.

Drafting organizations of this part: Unilever (China) Co., Ltd., and Shanghai Household Chemical Industry Research Institute.

Main drafters of this part: Mao Jie and Shen Min.

The previous editions of the standard replaced by this part are GB/T 13531.1-1992 and GB/T 13531.1-2000.

1 Scope

The Chinese national method for measuring the pH of a cosmetic. pH is one of the few

numbers that appears on almost every cosmetic specification, because skin sits at a mildly acidic pH and a product that departs too far from it stings, dries or irritates; it is also a stability indicator, since a cream drifting in pH is usually a cream going off. Measuring it is not as simple as dipping an electrode: many cosmetics are creams, pastes, powders or water-in-oil emulsions in which a glass electrode cannot reach a stable reading, so the sample has to be prepared first. This part of GB/T 13531 sets out that preparation - a dilution route for most products and a direct route for those that can be measured as they are - together with the grade of water and the buffer solutions used, the accuracy required of the pH meter and the electrodes, the calibration, the measurement itself, how the result is expressed and how far two parallel determinations may differ. It is Part 1 of a series whose other parts cover turbidity and relative density, and it is used by cosmetic manufacturers and by the laboratories that check their products. The 2008 edition modified the dilution ratio of the dilution method.

This part of GB/T 13531 specifies the method for the determination of the pH of cosmetics.

This part is applicable to the determination of the pH of cosmetics.

2 Normative references

The provisions of the following document become provisions of this part through reference in this part of GB/T 13531. For dated references, subsequent amendments (excluding corrections) to, or revisions of, any of these publications do not apply to this part; however, the parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions. For undated references, the latest edition applies.

GB/T 6682 Water for analytical laboratory use - Specification and test methods (GB/T 6682-2008, ISO 3696:1987, MOD).

3 Principle

Measurement of the difference of potential between a glass electrode and a reference electrode immersed in the cosmetic.

4 Reagents

4.1 The laboratory water is grade three water of GB/T 6682, whose conductivity shall not exceed the stated limit and which is boiled and cooled before use.

4.2 Two of the commonly used standard buffer solutions are chosen to calibrate the pH meter; their pH values shall be as close as possible to the expected pH of the sample, and the buffer solutions are prepared with the water of 4.1.

5 Apparatus

5.1 pH meter: including a temperature compensation system, of at least the stated accuracy.

5.2 Glass electrode, calomel electrode or combination electrode.

6 Analytical procedure

6.1 Preparation of the test sample. Two routes are given: 6.1.1 the dilution method, in which a weighed portion of the sample is made up with boiled and cooled laboratory water, warmed and stirred to homogeneity and then brought to the specified temperature, with variants for products of high oil content and for powders; and 6.1.2 the direct method, used for all products except powders, lipsticks and water-in-oil emulsions, in which the sample is placed in a beaker or the small package is opened and the sample brought to the specified temperature.

6.2 Calibration. The pH meter is calibrated according to the instructions for the instrument, using two of the standard buffer solutions of 4.2, either at the specified temperature or under temperature compensation.

6.3 Determination. The electrode, the rinsing water and the standard buffer solutions are all brought to the specified temperature, the closer to one another the better, or all adjusted to room temperature for calibration. After calibration the electrode is rinsed with the water of 4.1 and blotted with filter paper, then carefully immersed in the sample until the reading of the pH meter is stable and the reading is recorded; the electrode is thoroughly washed after use.

7 Expression of the analytical results

The result of the determination of pH is expressed as the mean of two measurements, to the stated precision.

8 Precision

The clause fixes the maximum permissible error between parallel determinations.