CCS G 31

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 40315-2021

Plastics - Small enclosures for conditioning and testing using aqueous solutions to maintain the humidity at a constant value

Issued on: August 20, 2021 **Implemented on: March 1, 2022**

Issued by: State Administration for Market Regulation, China National Standardization Administration

Table of Contents

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules of Standardization Documents"

Drafting.

The translation method used in this document is equivalent to ISO 483.2005 "Plastic uses an aqueous solution to maintain a constant humidity for state adjustment and testing

Small airtight container.

The Chinese documents that have consistent correspondence with the normatively cited international documents in this document are as follows.

---GB/T 2918-2018 Standard environment for condition adjustment and testing of plastic specimens (ISO 291.2008, MOD);

---GB/T 6682-2008 Analytical laboratory water specifications and test methods (ISO 3696.1987, MOD).

This document has made the following editorial changes.

---Informative appendix NA (verification test information) has been added.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Plastics Standardization Technical Committee (SAC/TC15).

Drafting organizations of this document. Zhonglan Chenguang Chengdu Testing Technology Co., Ltd., Qingdao Dagang Customs of the People's Republic of China, Shandong Dawn High Score

Sub-materials Co., Ltd., Guangzhou Institute of Quality Supervision and Inspection, Guangzhou Weike Environmental Protection Technology Co., Ltd., Shenzhen Zhongan Testing Standard Technology

Co., Ltd., CGN Juner (Zhejiang) New Materials Co., Ltd., Xiamen Defenghang Plastic Industry Co., Ltd., Dongguan Weiside Technology Development

Co., Ltd., Jilin Province Product Quality Supervision and Inspection Institute, Jiangsu Youlian Testing Technology Service Co., Ltd., Chongqing Kejufu Engineering Plastics Co., Ltd.

Responsible company, Fujian Institute of Product Quality Inspection.

1 Scope

This document specifies the use of saturated saline solution, glycerin/water solution or sulfuric acid solution to adjust the volume to less than.200dm3 at a given temperature

The test method for the airtight container to achieve a constant relative humidity, and also stipulates the adjustment requirements for maintaining the state of the relevant standard at a specific temperature

The method within the deviation range.

This document applies to the adjustment of the state of a small amount of material, but also to tests that can be in small airtight containers, such as electrical tests.

This document does not apply to airtight containers that need to be opened frequently.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

ISO 291 Standard environment for condition adjustment and testing of plastic specimens (Plastics-Standardatmospheresfor

conditioningandtesting)

ISO 3696.1987 Analytical laboratory water specifications and test methods

(Waterforanalyticallaboratoryuse-

Specificationandtestmethods)

3 Principle

In a relatively small airtight container, the use of a specific concentration of aqueous solution to achieve gas-liquid equilibrium produces a test ring with a specific relative humidity

territory. By using saturated saline solution (see Method A and Table 1), glycerin aqueous solution of specified concentration (see Method B and Table 2) or sulfuric acid water solution

Liquid to create this atmosphere (see Method C and Table 3). When using method B and method C, the concentration of these solutions should be measured and controlled.

This document gives information on the method of generating the required relative humidity in a closed container at 0°C to 70°C.

The relative humidity value shown in this document is taken from literature [1], and the uncertainty involved is discussed in Chapter 9 of this document.

4.4 Water, in line with Grade 3 water in ISO 3696.1987.

Note. When using chemical reagents whose exact purity is not known, any difference between these chemical reagents and reagent grade chemicals can be ignored.

5 Aqueous solution

5.1 Saturated salt solution (see Table 1), use excess salt to keep the solution in a saturated state.