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

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Plastics - Determination of water content

塑料 含水量的测定

(English Translation)

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Reference

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 for standardization documents"

Drafting.

This document is modified to adopt ISO 15512:2019 "Determination of water content of plastics".

Compared with ISO 11512:2019, this document has many structural adjustments. The structural number changes between the two documents are shown in the table below.

See Appendix A.

The technical differences between this document and ISO 15512:2019 and their reasons are as follows.

--- Adjust the operation and related explanations of the method in the scope of application of the method in Chapter 1 to the newly added introduction to increase the applicability of the standard.

Readability;

--- Adjust the provisions of the method detection limit in Chapter 1 to the calculation and expression of the results of each method (see 5.5, 6.5, 7.5, 8.5, 9.5 and 10.5.2) to meet the requirements of standard compilation;

--- Use the normative reference GB/T 6283 to replace ISO 760 (see 5.2.2, 5.3.8) to adapt to my country's technical conditions and increase operability Sex;

--- Adjust Note 1 of ISO 15512:2019 "Pressure moisture analyzer" to the main text (see 8.3.1) to comply with the requirements for standard compilation;

--- Unify the unit of water content of nitrogen and unify it to 0.554×10^{-6} in accordance with the provisions of Appendix A of GB/T 5832.2-2016 (volume fraction) (see 7.2.6, 9.2.3) to increase the consistency between the standard and the Chinese standard;

--- Adjust the informative Appendix B of ISO 15512:2019 to a normative appendix (see Appendix C) to meet the requirements for standard preparation;

--- Adjust the informative Appendix C of ISO 15512:2019 to a normative appendix (see Appendix D) to meet the requirements for standard preparation.

The following editorial changes were made to this document.

--- The informative reference GB/T 1034 replaces ISO 62 (see introduction) to adapt to my country's technical conditions;

--- The informative reference GB/T 1631.1 replaces ISO 1632.1 (see C.2) to adapt to my country's technical conditions;

--- The informative reference GB/T 1631.3 replaces ISO 1632.3 (see C.2) to adapt to my country's technical conditions;

--- The informative reference GB/T 1631.4 replaces ISO 1632.4 (see C.2) to adapt to my country's technical conditions;

--- The informative reference GB/T 1631.5 replaces ISO 1632.5 (see C.2) to adapt to my country's technical conditions;

--- The informative reference GB/T 12006.1 replaces ISO 370 (see C.2) to adapt to my country's technical conditions.

Introduction

Moisture content is an important parameter for processing materials. Too high moisture content will affect the processing performance of the material.

This document describes six moisture content test methods.

---Method A is anhydrous methanol extraction method. Anhydrous methanol is used to extract water from the sample, and then the extract is subjected to Karl Fischer Titration.

---Method B1 is a tube furnace evaporation method. The water contained in the sample is evaporated and transported to the titration cell by dry air or nitrogen, and then the collected water was then coulometrically determined using a Karl Fischer titrator.

---Method B2 is the sample bottle evaporation method. The water contained in the sample is evaporated and transported to the titration cell by dry air or nitrogen, and then the collected water was then subjected to Karl Fischer titration using a Karl Fischer titrator.

---Method C is a pressure measurement method. The evaporation of water in the vacuum system causes an increase in pressure, and the water content of the sample is calculated by the pressure increase.

The evaporation temperature is not specified in this document, and for the pressure method a temperature of 200°C is generally used. However, for some condensation materials this temperature may cause condensation reaction and produce water.

---Method D is to use phosphorus pentoxide (P₂O₅) coulometric method. The water contained in the sample is evaporated and then transported through dry air or nitrogen.

It is sent to a phosphorus pentoxide electrolytic cell, and then the collected water is subjected to thermocoulometric determination.

---Method E is the calcium hydride test method. The sample is heated under vacuum to evaporate the water in the sample. The evaporated water reacts with calcium hydride Hydrogen (H₂) and calcium hydroxide are generated. Hydrogen (H₂) increases the pressure of the vacuum system, and the sample content is calculated by the pressure increase value.

The volatile components that do not react with calcium hydride condense into liquid in the