

ICS 83.060
CCS G 40

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

SN/T 5269-2019

**Neoprene composite rubber? Determination of raw rubber
content? Thermogravimetric analysis**

氯丁橡胶复合橡胶 生橡胶含量的测定 热重分析法

(English Translation)

Issued on: January 1, 1970

Implemented on: July 1, 2020

Issued by: General Administration of Customs

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed and managed by the General Administration of Customs of the People's Republic of China.

Drafting organizations of this standard. Qingdao Customs of the People's Republic of China, Yiweiyi Rubber Research Institute Co., Ltd., China Inspection and Quarantine Science Technology Research Institute.

1 Scope

This standard specifies the method for determining the content of raw rubber in neoprene compound rubber using a thermogravimetric analyzer.

This standard applies to the determination of raw rubber content in neoprene compound rubber.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this

document.

GB/T 6379.2 Accuracy of measurement methods and results (accuracy and precision) Part 2: Determine the repeatability of standard measurement methods Basic methods of sex and reproducibility ISO 1407 Determination of rubber solvent extractables

3 Method summary

According to the preset heating program, the weighed sample is pyrolyzed in a nitrogen atmosphere, and the total organic content is obtained according to the mass change.

The raw rubber content of the sample is calculated based on the total organic content minus the amount of extracts, and then substituted into the calibration curve for calibration calculation.

4 Reagents and materials

Nitrogen. The purity is greater than 99.999%.

5 Apparatus and equipment

5.1

Thermogravimetric analyzer. Equipped with thermogravimetric balance, temperature program controller, and auxiliary components of micro-business thermogravimetric method.

5.2

Analytical balance. accurate to 0.1 mg.

6.1 Determination of solvent extract

According to the requirements of ISO 1407, extract the composite rubber sample and calculate the amount of solvent extraction.

6.2 Thermogravimetric analysis of the sample

6.2.1

Turn on the thermogravimetric analyzer, set the heating furnace to 50 °C, and stabilize the baseline.

6.2.2

Weigh 10 mg (accurate to 0.1 mg) of the cut gel sample and place it into the sample pan of the thermogravimetric balance.

6.2.3

In a nitrogen atmosphere, raise the furnace temperature to 300 °C at a rate of 10 °C/min.

6.2.4

Keep the temperature at 300 °C for 5 min.

6.2.5

Raise the furnace temperature to 650 °C at a rate of 20 °C/min.

6.2.6

End at 650 °C for 20 min. For a typical thermogravimetric curve, see Appendix A, Figure A.1.

6.3 Establishment of calibration curve

Select representative chloroprene rubber and prepare compound rubbers with different raw rubber content according to the formula used. The typical formula is shown in the attached file.

Record B in Table B.1. Take the total organic matter measured by the thermogravimetric analyzer minus the solvent extract content (6.1) as the abscissa, the actual raw rubber the content is the ordinate, and a standard curve is established to calibrate the raw rubber content of the sample. For a typical calibration curve, see Appendix B, Table B.2.

7 Result calculation

The mass fraction of raw rubber in the sample is calculated according to formula (1).

8 Precision

Appendix A

(Informative appendix)