NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 37498-2019

Rubber, raw natural - Determination of the gel content of technically specified rubber (TSR)

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1 Scope

This Standard stipulates the method for the determination of gel content of technically specified rubber (TSR).

This Standard is applicable to the determination of gel content of technically specified rubber (TSR).

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 2941 Rubber - General Procedures for Preparing and Conditioning Test Pieces for Physical Test Methods (GB/T 2941-2006, ISO 23529:2004, IDT)

GB/T 8081-2018 Rubber, Raw Natural - Guidelines for the Specification of Technically Specified Rubber (TSR) (GB/T 8081-2018, ISO 2000:2014, MOD)

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Technically Specified Rubber; TSR

Technically specified rubber refers to natural rubber (generally, processed into blocks)

obtained through Brazilian trefoil trees; its performance complies with corresponding technical grading indicators.

8 Test Procedures

8.1 Sample Quantity In accordance with the stipulations in Chapter 7 in GB/T 8081-2018, select two samples.

8.2 Test Procedures

8.2.1 Take a sample from laboratory samples that are not plasticized, in accordance with the proportion of dissolving 0.1 g of gel in every 30 mL of toluene solvent, calculate the mass of the sample.

NOTE: when the volume of the centrifugal tube is 50 mL, the dosage shall be 30 mL of toluene solvent (see 8.2.3), sampling size shall be 0.1 g.

8.2.2 Use clean scissors to cut the sample into around 1 mm3 of fragments. Weigh the sample that is cut into pieces (m0), accurate to 0.1 mg. Then, place it in a clean centrifugal tube (6.2). This centrifugal tube shall be pre-heated up at 100 °C for 1 h.

Then, store it in a dryer.

8.2.3 Add the toluene solvent into the centrifugal tube (6.2); the dosage of the toluene solvent shall be 60% of the total volume of the centrifugal tube that is planned to be used. Screw tight the centrifugal tube; use hands to shake it for several seconds. Then, at (25 +/- 2) °C, keep away from the light, place it still for 16 h ~ 20 h. During that period, do not stir it.

8.2.4 Afterwards, shake the centrifugal tube for 60 s, so that the jelly-like precipitation at the bottom can disperse.

In order to prevent damage to the centrifugal tube due to long-term contact with the solvent, a conical flask or test tube which has a plug (6.6) may also be adopted: comply with the conditions in 8.2.1 ~ 8.2.3, dissolve the sample, then, transfer the sample into centrifugal tube (6.2). Use toluene solvent that is not used to rinse the conical flask to test tube, so as to guarantee that all the precipitation is completely transferred to the centrifugal tube.

Before placing all the centrifugal tubes into the centrifuge, fill them up with toluene solvent that is not used, so as to guarantee that the volume of solution in all the centrifugal tubes is the same.

NOTE: generally speaking, fill centrifugal tube up with solution, so as to minimize the static air at the top of the centrifugal tube generated by negative pressure during the centrifugation process.

Screw tight the the screw cap of the centrifugal tube; place the centrifugal tube into the

m0---the mass of the sample (8.2.2), expressed in (g);

m1---the mass of empty weighing container (8.2.7), expressed in (g);

m2---the mass of dry precipitation and weighing container (8.2.10), expressed in (g).

The test result shall be expressed in the average value of the gel content of two samples.

10 Precision Please refer to Appendix A.

11 Test Report Test report shall include the following content:

a) Serial No. of this Standard;

b) All the details that are needed for sample identification;

c) Test method;

d) Laboratory temperature;

e) The diameter of centrifuge; the temperature, speed and time of centrifugation;

f) Details of any operation that is not stipulated in this Standard;

g) Test result;

h) Sample quantity;

i) Test result of each sample;

j) Average value of test results;

k) Any abnormal phenomena during the test process;

l) Date of test.