

HG

CHEMICAL INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HG/T 2525-2011

Replacing HG/T 2525-1993

Insoluble sulfur for rubber

橡胶用不溶性硫磺

(English Translation)

Issued on: December 20, 2011

Implemented on: July 1, 2012

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

Table of Contents

FOREWORD	3
1 SCOPE	4
2 NORMATIVE REFERENCES	4
3 REQUIREMENTS	5
4 TEST METHODS	5
5 INSPECTION RULES	17
6 MARKING, PACKAGING, TRANSPORTATION AND STORAGE.....	18
7 SAFETY	18

Foreword

This Standard is drafted according to the rules specified in GB/T 1.1-2009.

This Standard replaces HG/T 2525-1993 - The Insoluble Sulfur for Rubber. Compared with HG/T 2525-1993, the main technical changes are as follows, in addition to editorial changes.

- - DELETE the requirements to models IS 70-20 and IS 60-33, and ADD the requirements to models IS-HS 70-20 and IS-HS 60-33 (see Chapter 3, and Chapter 4 of Edition 1993);
- - MODIFY the testing items' requirements to different types of products (see Chapter 3, Chapter 4 of Edition 1993)
- - MODIFY the indication value of mass fraction of sieve residue (150μm) in insoluble sulfur for rubber (see Chapter 3, Chapter 4 of Edition 1993);
- - ADD the requirements and test methods for the heat stability (105) of insoluble °C sulfur for rubber (see Chapters 3 and 4.6).

1 Scope

This Standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation, storage and safety of insoluble sulfur for rubber.

This Standard is applicable to rubber vulcanizer - Non-oil-filled and oil-filled insoluble sulfur.

2 Normative references

The articles contained in the following documents have become part of this Standard when they are quoted herein. For the dated documents so quoted, all the modifications (Including

all corrections) or revisions made thereafter shall be applicable to this Standard.

For undated document, its newest edition (including all corrigenda) applies to this Standard.

GB 190 Packing symbol of dangerous goods

GB/T 191 Packaging - Pictorial marking for handling of goods

GB/T 601 Chemical reagent - Preparations of standard volumetric solutions

GB/T 603 Chemical reagent - Preparations of reagent solutions for use in test methods

GB/T 6003.1 Test sieves - Technical requirements and testing - Part 1: Test sieves of metal wire cloth

GB/T 6678 General principles for sampling chemical products

GB/T 6679 General rules for sampling solid chemical products

GB/T 6682 Water for analytical laboratory use - Specification and test methods

4.7.1 Principle

EXTRACT the acidic substances of the specimen with the water containing a small amount of ethanol; USE thymol blue bromide as indicator; USE sodium hydroxide standard titration solution to titrate.

4.7.2 Reagents

4.7.2.1

Anhydrous ethanol.

4.7.2.2

Sodium hydroxide standard titration solution.

4.7.2.3

Sodium hydroxide standard titration solution. $c(\text{NaOH}) = 0.02 \text{ mol/L}$

DRAW 20.00 mL of sodium hydroxide standard titration solution (4.7.2.2) INTO 100 mL volumetric flask; DILUTE with water to the mark; SHAKE well. PREPARE this solution whenever needed.

4.7.2.4

Indicating solution of thymol blue bromide. 1 g/L.

4.7.3 Analytical steps

WEIGH approximate 10g of sample with accuracy of 0.01g; PLACE in a 400mL beaker;

ADD 15 mL of anhydrous ethanol (4.7.2.1); STIR well; LET the specimen fully wet; ADD

additional 200mL of water; STIR fully for 2min - 3min; ADD 10 drops of thymol blue bromide indicating liquid (4.7.2.4) after placing it for 5min; USE sodium hydroxide standard titration solution (4.7.2.3) to titrate until the solution becomes blue green. Blank test shall be conducted simultaneously.

4.7.4 Result calculation

The mass fraction of acidity shall be measured by mass fraction w_6 of sulfuric acid (H_2SO_4), the value shall be represented by % and calculated according to Formula (6). Where.

V - The value of the volume of sodium hydroxide standard titration solution (4.7.2.3) consumed in the measurement, the unit is in mL;

V0 - The value of the volume of sodium hydroxide standard titration solution consumed in blank test, the unit is in mL;

C - The exact value of actual concentration of sodium hydroxide standard titration result shall be judged if it complies with this Standard. If there is 1 indicator in the inspection result not meeting the requirement of this Standard, it shall repeat the sampling and take double amount of samples for re-inspection. If there is still 1 or more indicator in the re-inspection result not meeting the requirements of this Standard, the whole batch of products is deemed unqualified.

6 Marking, packaging, transportation and storage

6.1

Distinct and reliable marks shall be available on the packaging bags of insoluble sulfur products for rubbers, which shall include. product name, product model, manufacturer's name, manufacturer's address, trademark, batch number, production date, net content, number of this Standard and the mark "Vulnerable to Rain" as specified in GB/T 191; the packaging bags of insoluble sulfurs for the non-oil-extended rubbers shall also be with the mark "Inflammable Solid" as specified in GB 190.

6.2

The insoluble sulfur for rubber shall be packed by plastic woven bag of liner plastic pouch; and the plastic woven bag shall comply with the requirements of GB/T 8946. The thickness of liner plastic bag shall be between 0.18 mm and 0.25 mm; and the volume shall be larger than external packing. TIE both side of the inner bag; SEW the outer bag with machines after folding; and the needle pitch shall be no greater than 10 mm. The net content of each bag shall be 25 kg or other packing amount confirmed by the user.

6.3

The insoluble sulfur for rubber shall be covered with awnings during transport; it must not be mixed with alkaline materials; it shall pay attention to fire prevention, heat-proof, and moisture proof to avoid product deterioration.

6.4

The insoluble sulfur for rubber shall be stored in dry, ventilated and shady warehouse; the storage space shall be kept fire-proof, heat-proof and moisture-proof; the storage temperature shall not be higher than 45.°C The insoluble sulfur for rubber shall not be placed too close to alkaline substances; and it shall be prevented from pressurized and caking. From the date of production, the storage period shall not exceed one year.

7 Safety

7.1

Insoluble sulfur for rubber is non-toxic and combustible; special fire-fighting equipment shall be set up at stacking places and warehouses; and it's forbidden to use open flame.

7.2

The staff engaged in the production, transportation, storage, and processing of insoluble sulfur for rubber shall use the necessary protective articles during the operation.

Translation References and Original Chinese Documents [1] HG/T 2525-2011 Insoluble sulfur for rubber.