

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

SN/T 5165-2019

Determination of the content of nitrocellulose wetting agents

进出口危险化学品 硝化棉润湿剂含量的测定

(English Translation)

Issued on: October 25, 2019

Implemented on: May 1, 2020

Issued by: General Administration of Customs

Table of Contents

Foreword
Introduction
1 Scope
2 Normative references
3 Instrument
5 Calculation of results
5.1 Calculation
5.2 Allowance
6 Safety instructions

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009 "Guidelines for Standardization Work Part 1. Structure and Compilation of Standards".

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

This standard was drafted. Nanning Customs, People's Republic of China.

Introduction

Nitrocellulose, also known as nitrocellulose, cotton collodion, etc., belongs to the category of nitrates. It is the product of cellulose and nitrate reaction. Nitrocellulose it is obtained by reacting refined cotton with concentrated nitric acid and concentrated sulfate. Nitrocellulose is highly flammable and explosive.

Depending on the degree of chemical transformation, nitrocellulose with a nitrogen content of more than 12.6% is extremely dangerous. It will burn when exposed to fire and can accelerate its decomposition when the temperature exceeds 40 ° C.

And spontaneous combustion. Although the nitrogen content is less than 12.6%, nitrocellulose is relatively stable, but when heated or stored for a long time, it gradually decomposes and releases acid, reducing the ignition point.

There is also the possibility of spontaneous combustion. The wetting agent added to the nitrocellulose can effectively prevent the nitrocellulose from decomposing and reduce its danger. Generally, the nitrocellulose is used Ethanol, isopropanol, n-butanol or water as wetting agent, the content is $\geq 25\%$.

SN/T 5165-2019

Import and export of dangerous chemicals Determination of nitrocellulose wetting agent content Warning --- The personnel using this standard should have relevant inspection or testing work experience. This standard does not indicate all possible safety problem. It is the responsibility of the user to adopt appropriate safety and health measures and to ensure compliance with the conditions stipulated by relevant national regulations.

1 Scope

This standard specifies the determination method of nitrocellulose (nitrogen content $\leq 12.6\%$) wetting agent content.

This standard applies to the determination of nitrocellulose (nitrogen content $\leq 12.6\%$) wetting agent content.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

file. For undated references, the latest version (including all amendments) applies to this document.

GB/T 3723 General safety rules for sampling of industrial chemical products GB/T 6679 General rules for sampling solid chemicals GB/T 8170 Numerical rounding rules and expression and judgment of limit values GJB337 Method for determination of nitrogen content of nitrocellulose (interferometer method)

3 Instrument

3.1

Vacuum drying oven. temperature control accuracy $\pm 5^{\circ}\text{C}$.

3.2

Analytical balance. The accuracy is 0.0001g.

3.3

Weighing bottle with ground bottle cap. 80mm in diameter and 30mm in height.

3.4

Drying tower. Filled with anhydrous calcium chloride.

4 Measurement procedure

4.1 Use a sample bag with a seal prepared in advance according to GB/T 3723 and GB/T

6679 to take a sample. After sampling, seal the seal.

Dead, stored in a cool, dry place, away from heat sources.

4.2 Place the weighing bottle (3.3) dried to constant weight in the analytical balance (3.2), open the bottle cap, and weigh 5g of the sample, accurate to 0.001g, quickly cap the bottle.

Note 1: After repeated measurement, if the weight difference between two weighing values is less than 0.0003g, it is regarded as constant weight.

4.3 Put the weighing bottle (3.3) with the sample into the vacuum drying box (3.1), open the bottle cap, lock the lock on the oven door, and select any of the conditions in Table 1 to dry under vacuum. When the vacuum reaches -0.01MPa, release the lock on the oven door.

Note 2: The purpose of releasing the lock on the oven door during the drying process is to allow the oven door to pop open to release pressure when an explosion occurs. If an explosion-proof oven is used, this step Steps can be omitted.

4.4 After drying, wait for the oven to cool to room temperature. Connect the vent valve of the vacuum drying oven (3.1) to the drying tower (3.4) and release the vacuum.

4.5 Take out the weighing bottle (3.3) and immediately close the bottle cap, weigh and calculate.

4.6 After the measurement is completed, the sample should be immediately filled with water to completely immerse it, sealed and protected from light and treated in accordance with relevant regulations.

SN/T 5165-2019

Table 1 Vacuum drying conditions

Condition	temperature °C	Degree of vacuum MPa	time
1	40	-0.1	4
2	60	-0.1	2
3	60	-0.055	3
4	80	-0.05	2

5.1 Calculation

The content of wetting agent in nitrocellulose is calculated as mass fraction W , and the value is expressed as%, calculated according to formula (1).

In the formula.

The results obtained are rounded down to the third decimal place according to the rounding rules of GB/T 8170. Take the arithmetic mean of two parallel determination results as the measurement results.

5.2 Allowance

The allowable difference between the two single analysis values obtained under repeatable conditions is 0.5%.

6 Safety instructions

6.1

Nitrogenated cotton samples whose nitrogen content cannot be determined shall be determined in accordance with GJB337. If the nitrogen content of the sample is $> 12.6\%$, it should not be used this standard determines its wetting agent content.

6.2

During the experiment, the lock on the oven door should always be released.

6.3

The nitrocellulose sample shall not be dropped in the oven.

SN/T 5165-2019