

ICS 71.060.50

CCS G 12



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

GB 28655-2012

[GB/T 28655-2012] Ammonium bifluoride for industrial use

Issued on: September 3, 2012

Implemented on: June 1, 2013

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

Table of Contents

Foreword

1 Scope

2 Normative references

4 Requirements

4.1 Appearance. white crystal.

4.2 ammonium hydrogen industry should meet the requirements of Table 1.

5 Test methods

5.1 Safety Tips

5.2 General Provisions

5.3 Visual inspection

5.4 Determination of the content of ammonium bifluoride

5.5 Determination of the content of ammonium fluorosilicate

5.6 Determination of loss on drying

5.8 Determination of the sulfate content

6 Inspection Rules

7 signs, labels

8 packaging, transport and storage

8.2 net weight 25kg, or according to user requirements negotiated net content.

9 Security

Foreword

8.1,8.3,8.4,8.5 this standard Chapter 7, Chapter 8, Chapter 9 is mandatory, the rest are recommended.

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

The standard proposed by China Petroleum and Chemical Industry Federation.

This standard by the National Standardization Technical Committee chemical inorganic chemicals branch (SAC/TC63/SC1).

This standard was drafted. Fluoride Chemicals Co., Ltd., Fujian Shaowu Yong Fei Chemical Co., Ltd., Zhejiang Chemical Co., fluorescent

The company, Zhejiang three US Chemical Co., Ltd., Zhejiang Ying Peng Chemical Co., Ltd., CNOOC Tianjin Chemical Research & Design Institute.

1 Scope

This standard specifies the requirements of industrial ammonium hydrogen fluoride, test methods, inspection rules, marking, labeling, packaging, transportation, storage, and security.

This standard applies to industrial hydrofluoric acid and ammonia in a liquid phase under the reaction conditions and obtained, primarily as oil extraction solution blocking agent, fine ceramic

Industrial ammonium bifluoride porcelain filling additives, surface treatment of metals, glass products like etchant.

2 Normative references

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

Pieces. For undated references, the latest edition (including any amendments) applies to this document.

GB 190-2009 dangerous goods packaging logo

GB/T 191-2008 Packaging Pictorial signs

GB/T 6678 General Principles for Sampling Chemical Products

GB/T 6682-2008 specifications and test methods for water analysis laboratory

GB/T 8170 rounding off means about rules and determining limiting values

Preparation HG/T 3696.1 Inorganic chemicals for chemical analysis of standard titration solution

Preparation HG/T 3696.2 Inorganic chemicals solution used for chemical analysis of standard impurities

Preparations with HG/T 3696.3 Inorganic chemicals Chemical Analysis

Molecular formula and molecular weight 3

Molecular formula. NH_4HF_2

Molecular weight. 57.04 (according to 2007 international relative atomic mass)

4.2 ammonium hydrogen industry should meet the requirements of Table 1.

Table 1

project

index

Premium grade First grade Qualified

Ammonium bifluoride (of NH_4HF_2) (dry basis) w /% $\geq$ 98.0 97.0 96.0

Ammonium fluorosilicate $[(\text{NH}_4)_2\text{SiF}_6]$ w /% $\leq$ 0.5 1.5 3.0

Loss on drying w /% $\leq$ 1.5 3.0 4.0

Residue on ignition w /% $\leq$ 0.1 0.2 -

Sulfate (in terms of SO_4) w /% $\leq$ 0.1 0.1 -

5.1 Safety Tips

Ammonium bifluoride in this test method the sample taken toxic, deliquescent in the air and the solution is strongly acidic, during operation

Try not to be in direct contact with the skin. Reagents used is corrosive, the operator should be careful to avoid contact with the skin, such as

Contact with the skin immediately wash with water, severe cases should seek medical care immediately.

5.2 General Provisions

This standard reagents and water, in the absence of other requirements specified, refer to three predetermined analytical reagents and GB/T 6682-2008 of

Water, used in the test standard titration solution, impurity standard solution, formulations and products, in the absence of other requirements specified, are by HG/T 3696.1,

HG/T 3696.2, preparing a predetermined HG/T 3696.3 is.

5.3 Visual inspection

Determined by visual appearance in natural light.

5.4.1 Method summary

Under the temperature of 0 degrees C, was added a saturated solution of potassium nitrate, in a sample to eliminate the interference of ammonium fluorosilicate, bromine thymol blue - neutral red is

Indicator, titrated with standard sodium hydroxide solution.

5.4.2.3 Bromothymol Blue - neutral red mixed indicator solution.

Weigh 0.1g 0.1g of bromothymol blue and neutral red, was dissolved in ethanol 200mL95%.

5.4.3 Analysis of step

Weigh about 0.8g sample by 5.6 after drying, the nearest 0.0002g, with a small amount of cold water to transfer the sample to a pre-filled with 20mL

Polyethylene beaker, 50g of potassium nitrate and a saturated solution of crushed ice, and stirred to dissolve the sample. Add 5 drops of bromothymol blue - mixing neutral red

Indicator solution, dark green end point titration with standard sodium hydroxide solution to titrate. After the titration solution is mixed with ice water to maintain a state immediately used

Determination of the content of ammonium fluoride.

5.4.4 calculation results

Ammonium fluoride ammonium hydrogen fluoride content (of NH_4HF_2) w_1 mass fraction basis, calculated according to formula (1).

$w_1 =$

$(V/1000) \text{ cM}$

$m \times 100\%$

(1)

Where.

Sodium hydroxide standard titration solution volume V --- titration test solution consumed value in milliliters (mL);

Accurate value of the concentration of the solution of sodium hydroxide standard titration --- C , in units of moles per liter (mol/L);

Value m --- mass of the sample in grams (G);

--- numerical molar mass M ammonium bifluoride (NH_4HF_2), in units of grams per mole (g/mol) ($M = 57.04$).

Parallel to the arithmetic average of the measurement results of the measurement result, the absolute difference determination results parallel to not more than 0.3%.

5.5.1 Method summary

After determination of the content of ammonium fluoride was subjected to suction filtration in the cold state. At 80 degrees C, fluorine potassium silicate precipitate was dissolved, to Phenolphthalein as an indicator, titration is titrated with standard sodium hydroxide solution.