

ICS 71.060.50  
CCS G 12



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

**GB 6549-2011**

Replacing GB 6549-1996

---

**Potassium chloride**

氯化钾

**(English Translation)**

**Issued on: July 20, 2011**

**Implemented on: June 1, 2012**

---

**Issued by: Standardization Administration of China**

## Table of Contents

Foreword

1 Scope

2 Normative references

3 Product Categories

4 Requirements

5 Test methods

5.1 Determination of potassium oxide content of potassium tetraphenylborate gravimetric method

5.2 Determination of Moisture

5.3 Determination of calcium and magnesium content

5.4 Sodium chloride content - Flame emission spectrophotometric method

### Foreword

The standard Chapter 4, 4.1, 4.2 Table 1 hydroxide and water projects, Chapter 6, Chapter 7, 7.1 and 7.2 are mandatory, which it was recommended.

This standard replaces GB 6549-1996 "potassium chloride." this standard compared with GB 6549-1996 The main changes are as follows.

--- Standard scope changed to "applicable to the various types of potassium and potassium salt brine produced in various industrial and agricultural processes chloride Potassium products ";

--- Simplifies product categories are divided into class I and class II industrial potassium chloride with potassium chloride agriculture;

--- Modified potassium indicators Class II agricultural quality products from the previous version of the standard  $\geq 54\%$   $\geq 55.0\%$  modified to use;

--- Revised moisture index, with three levels of class I industrial water  $\leq 2\%$  from the previous version of the standard,  $\leq 4\%$ ,  $\leq 6\%$ , revised to all  $\leq 2.0\%$ ; II class agricultural three grades from the previous version of the standard all  $\leq 6\%$ , revised to  $\leq 2.0\%$ ,  $\leq 4.0\%$ ,  $\leq 6.0\%$ ;

--- Modify the determination of potassium content, eliminating the step of adding formaldehyde; sodium tetraphenylborate precipitating agent by the addition of 65g/L 10mL changed to 30g/L 12mL; potassium tetraphenylborate precipitated detergent from saturated solution of potassium tetraphenylborate changed to 1g/L tetracene Sodium boron solution.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard is under the jurisdiction of Chemical Industry Standardization Technical Committee chemical mine.

This standard was drafted. even in the blue sea and Design Institute, Sinochem Fertilizer Co., Ltd., SDIC Xinjiang Lop Nur Potash Co., Ltd., China Agricultural Industry production company, Haixi Aviation tripotassium Silicon Co., Ltd., Qinghai Hanhai Group Limited, Qinghai Oriental quality potassium chloride industry Pilot plant, Qinghai Potash Corp. Hamachi, Qaidam Mineral Chemical Co., Ltd.

## 1 Scope

This standard specifies the potassium chloride product classifications, requirements, test methods, inspection rules, packaging, labeling, transportation and storage.

This standard applies to all types of potassium from the potassium salt and brine in various agricultural and industrial production process with potassium chloride products.

## 2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 6678-2003 General Principles for Sampling Chemical Products GB/T 6679-2003 General rules for sampling solid chemical products GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 8170 repair value expressed about the rules and limit values and judgment GB 8569 solid chemical fertilizers Packaging GB/T 9723 Chemicals flame atomic absorption spectrometry General GB 18382 fertilizer identify the content and requirements (GB 18382-2001, neqISO 7409. 1984) HG/T 2843 fertilizer products for chemical analysis commonly used standard titration solution, standard solution, reagent solution and indicator solution

## 3 Product Categories

Potassium chloride product use is divided into two categories.

Class I for industrial use potassium chloride, used in chemical industry, production of a variety of potash, but also for the preparation of fertilizer or used directly as fertilizer Administration.

II class agricultural potassium chloride, for the preparation of directly as fertilizer or fertilizer application.

## 4 Requirements

### 4.1

appearance of white, gray, reddish, light brown powder, granular or crystalline.

### 4.2

KCl industrial and agricultural products should comply with the technical requirements in Table 1.

Table 1 technical requirements of industrial and agricultural use potassium chloride

project

index

I Class II Class

Premium grade First grade Qualified Excellence in goods First grade Qualified Potassium oxide (K<sub>2</sub>O) mass fraction /%  $\geq$  62.0 60.0 58.0 60.0 57.0 55.0 Water (H<sub>2</sub>O) mass fraction /%  $\leq$  2.0 2.0 2.0 2.0 4.0 6.0 Combined amount of calcium and magnesium (Ca Mg) mass fraction /%  $\leq$  0.3 0.5 1.2 - - -Sodium chloride (NaCl) mass fraction /%  $\leq$  1.2 2.0 4.0 - - -the mass fraction of water insoluble /%  $\leq$  0.1 0.3 0.5 - - -

**Note 1:** In addition to water, the mass fraction of the components are on a dry basis.

**Note 2:** I class combined amount of calcium and magnesium, sodium chloride and water insoluble mass fraction of KCl recommended as an industrial index, agricultural unlimited.

## 5 Test methods

This standard reagents and water in the absence of other specified requirements, refer to analytical reagent and in line with GB/T 6682 in the three water regulation grid. The solution in the absence of marked preparation method, according to HG/T 2843 regulations formulated.

### 5.1.1 Method summary

After the sample was dissolved in water, heating under alkaline conditions to eliminate interference in a sample of ammonium ions, added disodium edetate eliminate interference points Analysis of the results of other cations. Potassium and sodium tetraphenylborate reaction of potassium tetraphenylborate precipitate was filtered, dried and weighed.

### 5.1.2 Reagents and solutions

#### **5.1.2.1**

sodium hydroxide solution. 200g/L.

#### **5.1.2.2**

disodium ethylenediaminetetraacetate (EDTA) solution. 40g/L.

#### **5.1.2.3**

sodium tetrphenylborate solution. 30g/L. Weigh 30g of sodium tetrphenylborate [NaB(C<sub>6</sub>H<sub>5</sub>)<sub>4</sub>], was dissolved in 980mL of water, add 4mL hydrogen Sodium hydroxide solution, 20mL magnesium chloride solution (100g/LMgCl<sub>2</sub> · 6H<sub>2</sub>O), stirred for 15min, filtered before use.

#### **5.1.2.4**

sodium tetrphenylborate washing solution. 1g/L. Filtrate with 30g/L of sodium tetrphenylborate solution formulated by 130.

#### **5.1.2.5**

phenolphthalein indicator solution. 5g/L. 0.5g phenolphthalein dissolved in 100mL of ethanol.

### **5.1.3 Instruments**

#### **5.1.3.1**

Glass filter crucible. the 4th, 25mL or 30mL.

#### **5.1.3.2**

oven. adjustable at 120 °C ± 2 °C.

#### **5.1.4.1 Preparation of test solution**

Weigh about 5g sample, to the nearest 0.001g, placed in 250mL beaker, add 100mL of water, stirring constantly heated micro-boiling 5min, removed, cooled to room temperature and transferred to 500mL volumetric flask, dilute to the mark, shake. This is the solution A.

Dry solution was filtered A, a small amount of initial filtrate was discarded, the filtrate Pipette 25.0mL in 250mL volumetric flask, dilute to the mark, shake uniform. This is the solution B.

#### **5.1.4.2 Determination**

Pipette 50.0mL of solution B in 250mL beaker, 10mLEDTA solution, 2 to 3 drops of phenolphthalein indicator solution, with stirring Sodium hydroxide solution was added dropwise to an excess of red appeared and 1mL. Heating boil 5min, a solution remains red, volume remains 50mL about.