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

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Potassium cyanide for industrial use

工业氰化钾

(English Translation)

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Table of Contents

Foreword	
1 Scope	
2 Normative references	
3 Formula and relative molecular mass	
4 Requirements	
5 Test methods	
5.1 Security Warnings	
5.2 General Provisions	
5.3 Appearance of discrimination	
5.4 Determination of potassium content	
5.5 Determination of potassium content	
5.6 Determination of potassium carbonate	
5.7 Determination of potassium content	
5.8 Determination of chloride content	
5.9 Determination of Moisture	
5.10 Determination of water-insoluble matter content	
6 Inspection rules	

Foreword

All the technical contents of this standard is mandatory.

This standard is to modify the use of Russian Standard GammaOCT8465. 1979 (1988) "Industrial potassium cyanide technical conditions." Taking into account China's national conditions, in the use of Russian Standard GammaOCT8465. 1979 (1988), the present standard do some modifications. For technical Differences have been incorporated into the body and they are involved in terms of the margin of a single vertical line identification. Is given in Appendix A and Appendix B List of the technical differences, structural differences and the reasons for the reference.

This standard Annex A, Annex B and Annex C is informative appendix.

The standard proposed by China Petroleum and Chemical Industry Association.

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

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Industrial potassium cyanide

1 Scope

This standard specifies requirements for industrial potassium cyanide, test methods, inspection rules, marking, labeling, packaging, transportation, storage, and security requirements.

This standard applies to industrial solid potassium cyanide and potassium cyanide solution industry. The products are mainly used in chemical, electroplating, metallurgy and mineral processing industries.

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 Research on whether to use the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB 190-2009 dangerous goods packaging logo GB/T 191-2008 Packaging - Pictorial signs (ISO 780:1997, MOD) GB/T 6678 General Principles for Sampling Chemical Products GB/T 6680 General rules for sampling liquid chemical products GB/T 6682-2008 analytical laboratory use specifications and test methods (ISO 3696. 1987, MOD) GB/T 8170 repair value expressed about the rules and limit values and judgment GB 19268-2003 Packaging solid cyanide Preparation of standard titration solution of HG/T 3696.1 inorganic chemical products, chemical analysis Preparation of HG/T 3696.2 inorganic chemical products, chemical analysis of impurity standard solution Preparations of HG/T 3696.3 inorganic chemical products, chemical analysis

3 Formula and relative molecular mass

Molecular formula. KCN Molecular Weight. 65.12 (according to 2007 international relative atomic mass)

4 Requirements

4.1

Appearance. industrial solid potassium should be white flake, lumpy or crystalline particles; industrial potassium cyanide solution should be colorless or light yellow transparent solution.

4.2

Industrial potassium cyanide should meet the requirements of Table 1.

Table 1 Requirements

project

index

solid

Premium grade First grade Solution Potassium cyanide (KCN), w /% $\geq$ 99.0 98.5 30.0
 Potassium hydroxide (KOH), w /% $\leq$ 0.3 0.4 1.6 Potassium carbonate (K₂CO₃), w /% $\leq$ 0.3 0.5 1.6 Potassium (HCOOK), w /% $\leq$ 0.9 - Chloride (Cl dollars), w /% $\leq$ 0.1 0.2
 -Water, w /% $\leq$ 0.3 0.5 -Water-insoluble, w /% $\leq$ 0.05 0.05 -

5.1 Security Warnings

Potassium cyanide is virulent, in the sampling and analysis operations should be strictly in accordance with the standard safety requirements. See Appendix analysis of waste C methods for processing. Analysis of the acid, alkali and other corrosive agents, users should be careful to avoid splashing on the skin. As splashed skin on skin, wash immediately with plenty of water, severe cases should be treated immediately.

5.2 General Provisions

The standard reagents and water, did not indicate when additional requirements are specified analytical reagent refers to 6682-2008 and GB/T 's Three water.

Standard titration solution used in the tests, the impurity standard solution, preparations and products, did not indicate when the other requirements, according HG/T 3696.1, the provisions prepared HG/T 3696.2 and HG/T 3696.3 of.

5.3 Appearance of discrimination

Under natural light conditions, with visual discrimination method.

5.4.1.1 Method summary

Ammonia medium, silver ions form a complex with cyanide ion, potassium iodide and excess silver ions form a yellow precipitate, indicating the endpoint of the titration.

Potassium content is calculated according to consumption and the concentration of the standard silver nitrate titration solution.

5.4.1.2 Reagents

5.4.1.2.1

ammonia solution. 23;

5.4.1.2.2

standard silver nitrate titration solution. $c(\text{AgNO}_3)$ about 0.05mol/L;

5.4.1.2.3

potassium iodide solution indicates. 50g/L;

5.4.1.2.4

carbon dioxide-free water.

5.4.1.3 Preparation of test solution

Weigh 3g ~ 3.5g or 9g ~ 10g solid sample liquid sample, accurate to 0.0002g, dissolved carbon dioxide-free water. then Transferred to 500mL volumetric flask, diluted with carbon dioxide-free water to the mark. This solution was used as test solution A, containing potassium cyanide for the amount determined potassium content, potassium content, potassium content and chloride content.

5.4.1.4 Analysis step

Pipette with a pipette 25mL of test solution A, placed in a conical flask, add 75mL water, 1mL 1mL aqueous ammonia solution and potassium iodide solution Solution, titration with standard silver nitrate titration Lawrence turbidity of the end.

5.4.1.5 Calculation Results

Potassium content of potassium cyanide (KCN) mass fraction w_1 and its value is expressed in%, according to equation (1).

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

$m (25/500) \times 100$

Where.

Numerical V --- volume of the standard silver nitrate titration solution consumed in titration, in milliliters (mL);

C --- accurate standard silver nitrate titration solution concentration value in units of moles per liter (mol/L);