

ICS 71.040.40

CCS G 10



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

GB/T 8570.7-2010

Replacing GB/T 8570.7-1988

**Determination of liquefied anhydrous ammonia -- Part 7: Iron
content -- O-Phenathroline spectrophotometric method**

液体无水氨的测定方法 第7部分：铁含量 邻菲啰啉分光光度法

(English Translation)

Issued on: September 26, 2010

Implemented on: March 1, 2011

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

Table of Contents

Foreword
1 Scope
2 Normative reference documents
3 Principle
4 Instruments
5 Reagents and materials

Foreword

GB/T 8570 "Determination of liquid anhydrous ammonia method" is divided into seven parts.

- Part 1. Adoption of laboratory samples;
- Part 2. Ammonia content;
- Part 3. Residue content weight method;
- Part 4. Residual content volumetric method;
- Part 5. Moisture Fisher Fischer;
- Part 6. Oil content gravimetric and infrared absorption spectroscopy;
- Part 7. Iron content - phenanthroline spectrophotometric method.

This part is part 7 of GB/T 8570.

This part of the replacement GB/T 8570.7-1988 "Determination of liquid anhydrous ammonia content of o-phenanthroline spectrophotometric method." this part is not equivalent to ISO 6685. 1982.

The main differences between this edition and the previous edition are.

Preparation and calibration of reagent solutions, standard titration solutions, etc. Execution of HG/T 2843 standards;

--- increase the contents of the security warning;

- standardize the standard format according to the new requirements.

This section is proposed by the China Petroleum and Chemical Industry Association.

This section is under the jurisdiction of the National Technical Committee on

Standardization of Fertilizers and Soil Conditioners (SAC/TC105).

This part of the drafting unit. the National Fertilizer Quality Supervision and Inspection Center (Shanghai), the Eastern Airlines Co., Ltd. Security Department.

This part of the main drafters. Feng Zhuo, Wu Juan, Ji Min, Chen Jie.

This part was first published in 1988.

Determination of liquid anhydrous ammonia Part 7. iron content of phenanthroline spectrophotometric method WARNING - Personnel using this standard should have practical experience in formal laboratory work. This standard does not indicate all possible security questions question. It is the responsibility of the user to take appropriate safety and health measures and to ensure compliance with the conditions of the relevant national laws. Liquid anhydrous ammonia high Toxic to the skin, mucous membranes and eyes are corrosive, contact can cause severe burns. Operation should be properly protected.

1 Scope

This part of GB/T 8570 specifies the use of o-phenanthroline spectrophotometric method for the determination of iron in liquid anhydrous ammonia.

This part applies to the determination of iron content of liquid anhydrous ammonia.

2 Normative reference documents

The terms of this document are the terms of this part by reference to this part of GB/T 8570. Any reference to the date of the text , All subsequent amendments (excluding corrigenda) or revisions do not apply to this part, however, encouragement under this section the parties to the agreement study whether the latest version of these documents can be used. For undated references, the latest edition of this document applies section.

GB/T 8570.1 Methods for the determination of liquid anhydrous ammonia - Part 1. Adoption of laboratory samples GB/T 8570.3-2010 Methods for the determination of liquid anhydrous ammonia - Part 3. Residue content gravimetric method HG/T 2843 chemical analysis of chemical fertilizers commonly used standard titration solution, standard solution, reagent solution and indicator solution

3 Principle

After the liquid ammonia sample is evaporated at room temperature, the iron in the residue is evaporated with a hydrochloric acid solution, and the ferric acid is reduced to ferrous iron with ascorbic acid.

When the pH value is 2 ~ 9, the ferrous and o-phenanthroline form orange-red complex, and at the maximum absorption wavelength of 510nm, the spectrophotometer Determine

the absorbance and calculate the iron content.

4 Instruments

4.1

General laboratory equipment;

4.2

sampling devices, see 5.2 in GB/T 8570.3-2010;

4.3

spectrophotometer with 3cm cuvette.

5 Reagents and materials

The following part of the reagents and solutions are corrosive and the operator should be careful to rinse or rinse immediately with water. Way to deal with, if not suited to immediate medical treatment.

The reagents, solutions and water used in this standard shall comply with the requirements of HG/T 2843 when the specifications and formulation methods are not specified.

5.1

sulfuric acid solution, the mass fraction of 10%;

5.2

hydrochloric acid solution, the mass fraction of 10%;

5.3

ammonia solution, the mass fraction of 2.5%;

5.4

acetic acid - sodium acetate buffer solution, the pH value of about 4.5;

5.5

ascorbic acid solution, 20g/L, the solution stored in a brown bottle, the use of about 10d;

5.6

o-phenanthroline solution, 2g/L;