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

GB/T 13255.1-2009

Replacing GB/T 13255.1-1991

**Test methods of caprolactam for industrial use -- Part 1:
Determination of colourity of 50% aqueous caprolactam
solution -- Spectrometric method**

工业用己内酰胺试验方法 第1部分：50%水溶液色度的测定 分光光度法
(English Translation)

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Foreword

GB/T 13255 "Industrial caprolactam test method" is divided into eight sections.

--- Part 1. Determination of a 50% aqueous solution of chromaticity spectrophotometry
Determination of crystallizing point. --- Part 2

--- Part 3. Determination of permanganate absorption spectrophotometry value

--- Part 4. After distillation of volatile alkali content of titration Absorbance was measured at
a wavelength of 290nm. --- Part 5

--- Part 6. Determination of acidity or alkalinity

--- Part 7. Determination of iron content

--- Part 8. Determination of cyclohexanone oxime content this section GB/T 13255 Part 1.

The partial modification of international standards ISO 8112. 1984 "Industrial caprolactam
--- 50% aqueous solution of caprolactam measured chromaticity to Hazen units (platinum -
cobalt color number) --- spectrophotometry. " this section according to ISO 8112. 1984
re-drafted. The standard lists the reg number in Appendix A and ISO 8112. 1984 reg
Control list numbered.

Taking into account China's national conditions, the use of this part of the ISO 8112. 1984
when made some editorial changes, this part of the ISO 8112.

The main technical differences in 1984 is as follows.

--- Analysis of water level defined by the "distilled water or equivalent purity" was changed

to "GB/T 6682-2008 in three sizes Water "(ISO 8112. 1984 version of Chapter 5; Chapter 4 of this section);

--- Measured with a spectrophotometer simplifies the basic requirements (ISO 8112. 1984 version of Chapter 6; Chapter 5 of this section).

This Part replaces GB/T 13255.1-1991 "Determination of 50% aqueous caprolactam industry chromaticity spectrophotometry." this section compared with the GB/T 13255.1-1991 The main changes are as follows.

--- Will analyze the water level defined as "third grade water GB/T 6682 stipulated" (1991 edition, Chapter 4, Excerpts Chapter 4);

--- Added "Report" (see Chapter 8).

Appendix A of this section is an informative annex.

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

This part of the National Standardization Technical Committee on Organic Chemistry Club (SAC/TC63/SC2) centralized.

This section drafted by. China Petroleum & Chemical Corporation Baling Company, China Petroleum & Chemical Corporation Beijing Chemical Engineering Institute Study hospital.

1 Scope

GB/T 13255 provisions of this part of the color with 50% aqueous caprolactam by spectrophotometry industry.

2 Normative references

The following documents contain provisions which, through reference GB/T 13255 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

Laboratory use specifications and test methods (. 1987 neq ISO 3696) GB/T 6682-1992 Analysis GB/T 8170 repair value expressed about the rules and limit values and judgment

3 PRINCIPLE OF THE METHOD

50% measured by a spectrophotometer absorbance at 390nm caprolactam in aqueous solution at a wavelength of the absorbance change by a constant 150 Hazen units --- counted as platinum - cobalt color number color.

4 Reagents

Unless otherwise indicated in the analysis using only comply with GB/T 6682-1992 specified in the third grade water.

5 Instruments

Spectrophotometer. Accuracy $\pm 0.004A$. With 5cm absorption cell.

6.1 Determination

Weigh 50.0g laboratory samples, accurate to 0.1g, placed in 250mL beaker, add 50mL water and stir to dissolve, and stand until the air Bubble disappears, the solution was injected into a cuvette, adding water to absorb another pool at 390nm wavelength, using water as a reference, with a spectrophotometer Measuring absorbance.

6.2 Absorbance corrected absorption cell

The water instead of sample solution was injected into the absorption cell, measured at 390nm wavelength absorption cell absorbance difference between the two, namely the absorption cell absorbance the correction value.

7 Results Calculation

Chroma X_0 (Hazen unit --- platinum - cobalt color number) according to equation (1).

$X_0 = 150 \times (A_1 - A_0)$ (1) where.

--- The A_1 sample absorbance of the solution;