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# International Standard



# 8112

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## Caprolactam for industrial use — Determination of colour of 50 % aqueous caprolactam solution, expressed in Hazen units (platinum-cobalt scale) — Spectrometric method

*Caprolactame à usage industriel — Détermination de la coloration d'une solution aqueuse à 50 % de caprolactame, exprimée en unités Hazen (échelle platine-cobalt) — Méthode spectrométrique*

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**Descriptors:** industrial products, caprolactams, tests, determination, colour, spectrophotometric analysis.

## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8112 was prepared by Technical Committee ISO/TC 47, *Chemistry*.

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# Caprolactam for industrial use — Determination of colour of 50 % aqueous caprolactam solution, expressed in Hazen units (platinum-cobalt scale) — Spectrometric method

## 1 Scope and field of application

This International Standard specifies a spectrometric method of determining the colour, expressed in Hazen units, of a 50 % aqueous caprolactam solution as a measure of coloured impurities content of the sample.

## 2 Reference

ISO 2211, *Liquid chemical products — Measurement of colour in Hazen units (platinum-cobalt scale)*.

## 3 Definition

**colour expressed in Hazen units (Pt/Co scale)**: The number which indicates the amount of platinum, in milligrams per litre, in the standard solution the absorbance of which, measured at a wavelength of 390 nm, is equal to that of the 50 % aqueous solution of caprolactam measured at the same conditions.

## 4 Principle

Spectrometric measurement of the absorbance of a 50 % aqueous caprolactam solution at a wavelength of 390 nm and optical path length of 50 mm, expressed in Hazen units by multiplying the absorbance measured by a constant factor equal to 150.

This factor is derived from measurements of absorbance of diluted standard solutions of platinum-cobalt scale (see ISO 2211, clause 6).

## 5 Reagents

During the analysis, use only distilled water or water of equivalent purity.

## 6 Apparatus

Ordinary laboratory apparatus and

**6.1 Spectrometer, single-beam, or**

**6.2 Spectrometer, double-beam, or**

**6.3 Photometer**, fitted with filters having maximum transmission at about 390 nm.

**6.4 Two cells**, of optical path length 50 mm.

## 7 Procedure

**7.1** Weigh  $50 \pm 0,1$  g of caprolactam, place in a 250 ml conical flask and dissolve in 50 ml of water. Allow the solution to stand till the air bubbles disappear.

**7.2** Fill the two cells (6.4) with water. Adjust the spectrometer (6.1 or 6.2) or the photometer (6.3) for measuring absorption difference at a wavelength of 390 nm, if necessary. If a single-beam spectrometer is used, measure the possible difference in absorbance of the cells and correct the result obtained by the procedure specified in 7.3.