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Caprolactam for industrial use — Determination of absorbance at a wavelength of 290 nm

Caprolactame à usage industriel — Détermination de l'absorbance à la longueur d'onde de 290 nm

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Foreword

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

This second edition cancels and replaces the first edition (ISO 7059:1982), which has been technically revised.

The main changes are as follows:

— the particular reference to hydrogen or deuterium lamps has been removed due to the existence of other equivalent UV light sources;

— the option to use a flow-through cell for the absorption measurement has been added;

— the temperature of measured solution has been taken into account.

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Caprolactam for industrial use — Determination of absorbance at a wavelength of 290 nm

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1 Scope

This document specifies a spectrometric method for the determination of the absorbance at a wavelength of 290 nm of caprolactam for industrial use.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

The absorbance of a solution of 50 % caprolactam in water is measured in a 1 cm path length cell at a wavelength of 290 nm using an ultraviolet spectrometer.

5 Reagents

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

6 Apparatus

Ordinary laboratory apparatus and the following.

6.1 Ultraviolet spectrometer, capable of measuring the absorbance at a wavelength of 290 nm.

6.2 Two quartz cells, with optical path length 1 cm,

Or alternatively

6.3 One flow-through cell (quartz –1 cm) in combination with a pump system.

7 Procedure

7.1 Test portion and preparation of the test solution

Weigh (50,0 ± 0,1) g of the test sample, dissolve it in (50,0 ± 0,1) ml of water, and mix. Allow the solution to cool down to room temperature in case of preparing the solution with liquid (melted) caprolactam or let it warm to room temperature in case of preparing the solution with solid caprolactam.

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