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(JEMCA/JSA)

**Testing methods for water quality by flow  
analysis—Part 3: Total nitrogen**

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## Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by Japan Environmental Measurement and Chemical Analysis (JEMCA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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JIS K 0170 series consists of the following 9 parts under the general title

*“Testing methods for water quality by flow analysis”:*

*Part 1: Ammonium nitrogen*

*Part 2: Nitrite nitrogen and nitrate nitrogen*

*Part 3: Total nitrogen*

*Part 4: Orthophosphate and total phosphorus*

*Part 5: Phenol index*

*Part 6: Fluoride*

*Part 7: Chromium (VI)*

*Part 8: Anionic surfactants*

*Part 9: Cyanide compounds*

# Testing methods for water quality by flow analysis—

## Part 3: Total nitrogen

### 1 Scope

This Japanese Industrial Standard specifies the method of determination of nitrogen compounds contained in industrial water, industrial wastewater, etc. as total nitrogen by using the flow analysis according to absorption spectrophotometry. The method is also applicable to surface water, ground water, seepage water, etc.

It does not apply to samples with much suspended matter.

**WARNING** The reagents shall be handled with utmost attention, ensuring compliance with relevant laws, ordinances, regulations and the like.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS K 0050 *General rules for chemical analysis*
- JIS K 0094 *Sampling methods for industrial water and industrial wastewater*
- JIS K 0101 *Testing methods for industrial water*
- JIS K 0102 *Testing methods for industrial wastewater*
- JIS K 0115 *General rules for molecular absorptiometric analysis*
- JIS K 0126 *General rules for flow analysis*
- JIS K 0211 *Technical terms for analytical chemistry (General part)*
- JIS K 0215 *Technical terms for analytical chemistry (Analytical instrument part)*
- JIS K 0557 *Water used for industrial water and wastewater analysis*
- JIS K 8019 *Sodium nitrite (Reagent)*
- JIS K 8102 *Ethanol (95) (Reagent)*
- JIS K 8116 *Ammonium chloride (Reagent)*
- JIS K 8161 *Dichloromethane (Reagent)*
- JIS K 8180 *Hydrochloric acid (Reagent)*
- JIS K 8197 *N-1-Naphthylethylenediamine dihydrochloride (Reagent)*
- JIS K 8253 *Potassium peroxodisulfate (Reagent)*
- JIS K 8548 *Potassium nitrate (Reagent)*
- JIS K 8731 *Urea (Reagent)*

JIS K 8826 *Sodium hydroxide for nitrogen compounds analysis (Reagent)*

JIS K 8951 *Sulfuric acid (Reagent)*

JIS K 8983 *Copper (II) sulfate pentahydrate (Reagent)*

JIS K 9066 *Sulfanilamide (Reagent)*

JIS R 3503 *Glass apparatus for chemical analysis*

JIS R 3505 *Volumetric glassware*

### 3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in JIS K 0101, JIS K 0102, JIS K 0115, JIS K 0126, JIS K 0211 and JIS K 0215 and the following apply.

#### 3.1 total nitrogen

expression of nitrogen compounds as the concentration of nitrogen based on determination of nitrite ion by ultraviolet detection or cadmium column reduction absorption spectrophotometry after the pretreatment according to the procedure in clause 7 in which organic matter, etc. in the sample is oxidation-decomposed

### 4 Common matters

#### 4.1 General

The general matters common to chemical analyses shall be in accordance with JIS K 0050. The general requirements relating to the flow analysis shall be in accordance with JIS K 0126.

#### 4.2 Water

The water used in this Standard shall be the water of A3 or A4 specified in JIS K 0557.

#### 4.3 Reagents

The reagents to be used shall be those specified in Japanese Industrial Standards and shall not be such that they impair the measurement. In the case of using reagents not specified in Japanese Industrial Standards, those reagents shall not be such that they impair the measurement. The reagent blank shall be periodically checked.

NOTE: The concentration indicated in parentheses at the rear of the designation of a reagent solution, except when it is a reference solution, is an approximate concentration.

#### 4.4 Glassware

The glassware to be used, unless otherwise specified, shall be in accordance with JIS R 3503 and JIS R 3505.

### 5 Sample

#### 5.1 Sampling