DIN EN ISO 7393-2:2019-03 (E)

Water quality - Determination of free chlorine and total chlorine - Part 2: Colorimet ric method using N,N-dialkyl-1,4-phenylenediamine, for routine control purposes (ISO 7393-2:2017)

Contents

Page

European foreword 4

Foreword 5

1 Scope 6

2 Normative references 6

3 Terms and definitions 7

4 Principle 7
4.1 Determination of free chlorine 7
4.2 Determination of total chlorine 8

5 Interferences 8
5.1 General 8
5.2 Interference by other chlorine compounds 8
5.3 Interference by compounds other than chlorine compounds 8
5.4 Interference due to the presence of oxidized manganese 8
5.5 Interference due to turbid and coloured samples 9

6 Reagents 9

7 Apparatus 11

8 Sampling 12

9 Procedure 12
9.1 Test sample 12
9.2 Test portions 12
9.3 Calibration 12
9.4 Determination of free chlorine 12
9.5 Determination of total chlorine 13

10 Calculation 14
10.1 Calculation of the free chlorine concentration 14
10.2 Calculation of the total chlorine concentration 14
10.3 Conversion of amount of substance concentration to mass concentration 14

11 Expression of results 14

12 Test report 14

Annex A (informative) Separate determinations of combined chlorine of the monochloramine type, combined chlorine of the dichloramine type and of combined chlorine in the form of nitrogen trichloride 16

A.1 Applicability 16
A.2 Principle 16

A.3 Reagents ... 16
A.4 Apparatus ... 16
A.5 Procedure ... 16
A.5.1 Test sample ... 16
A.5.2 Test portions ... 16
A.5.3 Calibration ... 17
A.5.4 Determination of free chlorine and combined chlorine of the monochloramine type ... 17
A.5.5 Determination of free chlorine, combined chlorine of the monochloramine type and one half of the nitrogen trichloride ... 17
A.6 Expression of results ... 17
A.6.1 Method of calculation ... 17
A.6.2 Conversion of amount of substance concentration to mass concentration ... 18

Annex B (informative) Performance data ... 19

B.1 Performance data for the method described in the main part of this document ... 19
B.2 Performance data for the method described in Annex C ... 21

Annex C (informative) Disposable planar reagent-filled cuvettes using a mesofluidic channel pump/colorimeter ... 22

C.1 General ... 22
C.2 Principle ... 22
C.2.1 Determination of free chlorine ... 22
C.2.2 Determination of total chlorine ... 22
C.3 Reagents ... 22
C.4 Apparatus ... 22
C.5 Procedure ... 22
C.5.1 Test sample ... 22
C.5.2 Calibration verification and adjustment ... 23
C.5.3 Determination of free chlorine ... 23
C.5.4 Determination of total chlorine ... 23
C.6 Calculation ... 23
C.7 Results of a validation trial ... 23

Bibliography ... 24