

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

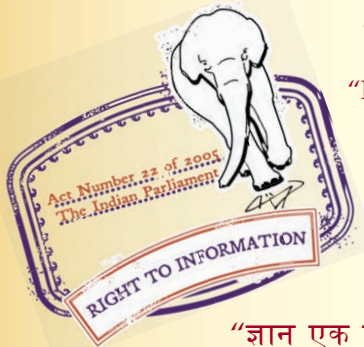
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 3025-23 (1986): Methods of sampling and test (physical and chemical) for water and wastewater, Part 23: Alkalinity [CHD 32: Environmental Protection and Waste Management]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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AMENDMENT NO. 1 SEPTEMBER 2000
TO
IS 3025 (PART 23) : 1986 METHODS OF SAMPLING
AND TEST (PHYSICAL AND CHEMICAL) FOR WATER
AND WASTEWATER
PART 23 ALKALINITY
(First Revision)

(Page 1, clause 2, line 3) — Substitute 'pH 4.5' for 'pH 3.7'.

(CHD 12)

AMENDMENT NO. 2 APRIL 2006
TO
IS 3025 (PART 23) : 1986 METHODS OF SAMPLING
AND TEST (PHYSICAL AND CHEMICAL) FOR WATER
AND WASTEWATER
PART 23 ALKALINITY
(First Revision)

(Page 2, clause 9) — Insert the following at the end:

Calculate caustic alkalinity in the sample as shown in Table 1.

Table 1 Calculation of Caustic Alkalinity from Total Alkalinity (*T*) and Alkalinity for Phenolphthalein (*P*)

Sl No. (1)	Values of <i>P</i> and <i>T</i> (2)	Caustic alkalinity (3)
i)	$P = 0$	0
ii)	$P < \frac{1}{2} T$	0
iii)	$P = \frac{1}{2} T$	0
iv)	$P > \frac{1}{2} T$	$2P - T$
v)	$P = T$	T

Calculate Excess alkalinity as given below and express the result to the nearest 5 mg/l:

$$\begin{aligned} \text{Excess alkalinity} &= 1.06 [\text{Total alkalinity (as CaCO}_3\text{, mg/l)} - \\ \text{(as Na}_2\text{CO}_3\text{), mg/l}] &= \text{Total hardness (as CaCO}_3\text{, mg/l)} \end{aligned}$$

Total hardness shall be determined as per IS 3025 (Part 21) : 1983 Methods of sampling and test (physical and chemical) for water and wastewater : Part 21 Total hardness (*first revision*).

(CHD 32)

8. Procedure

8.1 Indicator Method — Pipette 20 ml or a suitable aliquot of sample into 100-ml beaker. If the pH of the sample is over 8.3, then add 2 to 3 drops of phenolphthalein indicator and titrate with standard sulphuric acid solution till the pink colour observed by indicator just disappears (equivalence of pH 8.3). Record the volume of standard sulphuric acid solution used. Add 2 to 3 drops of mixed indicator to the solution in which the phenolphthalein alkalinity has been determined. Titrate with the standard acid to light pink colour (equivalence of pH 3.7). Record the volume of standard acid used after phenolphthalein alkalinity.

8.2 Potentiometer Method — Pipette 20 ml or a suitable aliquot of sample into a 100-ml beaker and titrate with standard sulphuric acid to pH 8.3 and then to pH 3.7, using a potentiometer. No indicator is required.

9. Calculation — Calculate alkalinity in the sample as follows:

$$\text{Phenolphthalein alkalinity (as mg/l of CaCO}_3) = \frac{A \times N \times 50000}{V}$$

$$\text{Total alkalinity (as mg/l CaCO}_3) = \frac{(A+B) \times N \times 50000}{V}$$

where

A = ml of standard sulphuric acid used to titrate to pH 8.3,

B = ml of standard sulphuric acid used to titrate from pH 8.3 to pH 3.7,

N = normality of acid used, and

V = volume in ml of sample taken for test.

EXPLANATORY NOTE

Alkalinity of water or wastewater is its quantitative capacity to react with a strong acid to a designated pH. Alkalinity is significant in many uses and treatments of natural and wastewaters. Alkalinity measurements are used in the interpretation and control of water and wastewater treatment processes.

This method supersedes 13 and 14 of IS:3025-1964 'Methods of sampling and test (physical and chemical) for water used in industry.'