

ICS 13.060  
CCS C 51



**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 5750.10-2006**

---

**Standard examination methods for drinking Water --  
Disinfection by-products parameters  
(English Translation)**

**Issued on: December 29, 2006**

**Implemented on: July 1, 2007**

---

**Issued by: Ministry of Health of the People's Republic of China**

## Table of Contents

|                                     |    |
|-------------------------------------|----|
| 1 Trichloromethane..                | 6  |
| 2 Tribromomethane..                 | 6  |
| 3 Dichloro-bromomethane..           | 6  |
| 4 Chlorodibromomethane.             | 6  |
| 5 Dichloromethane..                 | 6  |
| 6 Formaldehyde..                    | 11 |
| 7 Acetaldehyde.                     | 15 |
| 8 Trichloroacetaldehyde.            | 21 |
| 9 Dichloroacetic acid.              | 26 |
| 10 Trichloroacetic acid..           | 31 |
| 11 Cyanogen chloride..              | 31 |
| 12 2,4,6-trichlorophenol..          | 33 |
| 13 Chlorite..                       | 44 |
| 14 Bromate.                         | 56 |
| Appendix A (Normative) References.. | 65 |

## Foreword

GB/T 5750 "Standard Test Method for Drinking Water" is divided into the following parts.

- General principles;
- Collection and preservation of water samples;
- Water analysis quality control;
- Organoleptic and physical parameters;
- Nonmetal parameters;
- Metal parameters;
- Aggregate organic parameters;
- Organic parameters;
- Pesticides parameters;
- Disinfection by-products parameters;

- Disinfectants parameter;
- Microbiological parameters;
- Radiological parameters.

This standard replaces chloroform in the part II of GB/T 5750-1985 "Standard examination methods for drinking water".

As compared with GB/T 5750-1985, the main changes are as follows.

- ADJUST the structure in accordance with GB/T 1.1-2000 "Directives for standardization - Part 1.Rules for the structure and drafting of standards" and GB/T 20001.4-2001 "Rules for drafting standards - Part 4.Methods of chemical analysis";
- REVISE the quantity and measurement unit in accordance with the requirements of national standards;
- CHANGE the equivalent concentration into the molar concentration (the redox part still retains the equivalent concentration);
- CHANGE the mass concentration indication symbol C into rho, CHANGE the Standard examination methods for drinking water - Disinfection by-product parameters

## **1 Trichloromethane**

Same as the test method for carbon tetrachloride in Chapter 1 of GB/T 5750.8-2006.

## **2 Tribromomethane**

Same as the test method for carbon tetrachloride in Chapter 1 of GB/T 5750.8-2006.

## **3 Dichloro-bromomethane**

Same as the test method for carbon tetrachloride in Chapter 1 of GB/T 5750.8-2006.

## 4 Chlorodibromomethane

Same as the test method for carbon tetrachloride in Chapter 1 of GB/T 5750.8-2006.

### 5.1.1 Scope

This standard specifies the use of headspace gas chromatography for the determination of dichloromethane, 1,1-dichloroethane and 1,2-dichloroethane in drinking water and its source water.

This method applies to the determination of dichloromethane, 1,1-dichloroethane and 1,2-dichloroethane in drinking water and its source water.

The minimum detection mass concentration of this method. dichloromethane 9 µg/L, 1,1-dichloroethane 8 µg/L, 1,2-dichloroethane 13 µg/L.

Under the operating conditions of this method, other halogenated hydrocarbons do not interfere.

### 5.1.2 Principle

In a closed headspace bottle, volatile halogenated hydrocarbon molecules escape from the liquid phase into the gas in the headspace. At a certain temperature, the molecules of the halogenated hydrocarbon reach a dynamic equilibrium between the gas and liquid phases, at this time the concentration of the halogenated hydrocarbon in the gas phase is proportional to its concentration in the liquid phase. By measuring the concentration of the halogenated hydrocarbon in the gas phase, it can calculate the mass concentration of the halogenated hydrocarbon in the water sample.

**5.1.3.1.3 Combustion supporting gas. Oil-free compressed air, which is purified** by a purge tube containing 0.5 nm molecular sieves.

**5.1.3.2.2 Chromatographic standards (chromatographically pure).**

dichloromethane, 1,1-dichloroethane, 1,2-dichloroethane.

**5.1.3.3.2 The solvent used for the coating fixative solution. chloroform + butanol (1 + 1).**

**5.1.6.1.5 Attenuation. ADJUST the recorder attenuation in accordance with the content of the measured component in the sample.**

#### **5.1.6.2.2 Standard samples**

A. Number of uses. Each time the sample is analyzed, USE the new standard use solution to draw the standard curve or USE the response factor to make calculation.

B. Preparation of standard samples. TAKE three 10 mL volumetric flasks, ADD a few milliliters of distilled water, accurately WEIGH it, respectively ADD one drop of dichloromethane, 1,1-dichloroethane, and 1,2-dichloroethane.

Accurately WEIGH it, the mass increased is the mass of dichloromethane, 1,1-dichloroethane, and 1,2-dichloroethane. USE pure water to make the volume reach to the mark. After calculating the content, respectively TAKE appropriate amount of this solution, DILUTE it to  $\rho$  (dichloromethane) = 5  $\mu\text{g/mL}$ ,  $\rho$  (1,1-dichloroethane) = 7.5  $\mu\text{g/mL}$ ,  $\rho$  (1, 2-dichloroethane) = 7.5  $\mu\text{g/mL}$ , PREPARE it before use.

C. Conditions for use of standard solutions in gas chromatography.

a The standard solution injection volume is the same as the specimen injection volume. When measured by the single standard method, the standard solution response value shall be close to the specimen response value.

b When the relative standard deviation is less than 10% within the working range, the instrument is considered to be in a stable state.

c Standard samples and specimen are injected for analysis as far as possible at the same time.

Under selected chromatographic conditions, formaldehyde, propionaldehyde,