



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 0125 : 2016

**Testing methods for volatile organic
compounds in industrial water and waste
water**

ICS 13.060.25 ; 13.060.30 ; 13.060.50

Reference number : JIS K 0125 : 2016 (E)

K 0125 : 2016

Date of Establishment: 1987-02-01

Date of Revision: 2016-03-22

Date of Public Notice in Official Gazette: 2016-03-22

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on Chemical Products and
Analytical Methods

JIS K 0125 : 2016, First English edition published in 2017-04

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2017

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized
in any form or by any means, electronic or mechanical, including photocopying and microfilm, without
permission in writing from the publisher.

Printed in Japan

NH/HN

Contents

	Page
1 Scope	1
1.1 Normative references	1
2 Terms and definitions	2
3 General	2
3.1 General requirements	2
3.2 Gas chromatography	3
3.3 Gas chromatography mass spectrometry	3
3.4 Determination range	3
3.5 Repeatability	3
3.6 Test environment	3
3.7 Water	3
3.8 Reagents	4
3.9 Glassware	5
3.10 Calibration curve	5
3.11 Determination of conditions for each process of calibration	5
3.12 Preparatory operation	5
3.13 Expression of test results	5
4 Sample	6
4.1 Sampling	6
4.2 Handling of samples	7
5 Test methods	7
5.1 Purge-and-trap gas chromatography mass spectrometry	7
5.2 Headspace gas chromatography mass spectrometry	18
5.3 Purge-and-trap gas chromatography	31
5.4 Headspace gas chromatography	38
5.5 Solvent extraction-gas chromatography	45
5.6 Activated carbon extraction-gas chromatography mass spectrometry (1,4-dioxane analysis)	48
5.7 Solvent extraction-derivatization-gas chromatography mass spectrometry (formaldehyde analysis)	53
Annex A (normative) Preparation of mixed standard solutions	58
Annex B (normative) Conditions for gas chromatograph mass spectrometer using capillary column with an inside diameter of 0.53 mm or more	68
Annex C (normative) Conditions for gas chromatograph using packed column (A)	69

Annex D (normative)	Conditions for gas chromatograph using packed column (B)	70
Annex E (normative)	Determination of formaldehyde by acetylacetone absorptiometry	71
Annex F (informative)	Determination of chlorinated organic compounds by headspace gas chromatography using a flame ionization detector (FID)	75
Annex G (informative)	List of target substances for respective analytical methods	78

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

Consequently **JIS K 0125:1995** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

Testing methods for volatile organic compounds in industrial water and waste water

1 Scope

This Japanese Industrial Standard specifies the testing methods for the following volatile organic compounds in industrial water and waste water : dichloromethane, dibromochloromethane, tetrachloromethane (carbon tetrachloride), trichloromethane (chloroform), tribromomethane (bromoform), bromodichloromethane, 1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethene (1,1-dichloroethylene), *cis*-1,2-dichloroethene (*cis*-1,2-dichloroethylene), *trans*-1,2-dichloroethene (*trans*-1,2-dichloroethylene), tetrachloroethene (tetrachloroethylene), trichloroethene (trichloroethylene), 1,2-dichloropropane, 1,3-dichloro-1-propene, 1,4-dichlorobenzene (*p*-dichlorobenzene), dimethylbenzene (xylene), benzene, methylbenzene (toluene), chloroethylene (vinyl chloride monomer), 1,4-dioxane and formaldehyde.

NOTE 1 A list of target substances for respective analytical methods specified in this Standard is given in Annex G.

NOTE 2 Compounds indicated above with the common names in attached parentheses are hereafter referred to by their common names.

1.1 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 0114 *General rules for gas chromatography*
- JIS K 0123 *General rules for gas chromatography/mass spectrometry*
- JIS K 0211 *Technical terms for analytical chemistry (General part)*
- JIS K 0215 *Technical terms for analytical chemistry (Analytical instrument part)*
- JIS K 0512 *Hydrogen*
- JIS K 0557 *Water used for industrial water and wastewater analysis*
- JIS K 1107 *Nitrogen*
- JIS K 8027 *Acetylacetone (Reagent)*
- JIS K 8034 *Acetone (Reagent)*