



MALAYSIAN STANDARD

MS 2546:2013

Methyl bromide fumigation - Requirements

ICS: 65.100

Descriptors: methyl bromide, fumigation, requirement

© Copyright 2013

DEPARTMENT OF STANDARDS MALAYSIA

DEVELOPMENT OF MALAYSIAN STANDARDS

The **Department of Standards Malaysia (STANDARDS MALAYSIA)** is the national standards and accreditation body of Malaysia.

The main function of STANDARDS MALAYSIA is to foster and promote standards, standardisation and accreditation as a means of advancing the national economy, promoting industrial efficiency and development, benefiting the health and safety of the public, protecting the consumers, facilitating domestic and international trade and furthering international cooperation in relation to standards and standardisation.

Malaysian Standards (MS) are developed through consensus by committees which comprise balanced representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject at hand. To the greatest extent possible, Malaysian Standards are aligned to or are adoption of international standards. Approval of a standard as a Malaysian Standard is governed by the Standards of Malaysia Act 1996 [Act 549]. Malaysian Standards are reviewed periodically. The use of Malaysian Standards is voluntary except in so far as they are made mandatory by regulatory authorities by means of regulations, local by-laws or any other similar ways.

For the purposes of Malaysian Standards, the following definitions apply:

Revision: A process where existing Malaysian Standard is reviewed and updated which resulted in the publication of a new edition of the Malaysian Standard.

Confirmed MS: A Malaysian Standard that has been reviewed by the responsible committee and confirmed that its contents are current.

Amendment: A process where a provision(s) of existing Malaysian Standard is altered. The changes are indicated in an amendment page which is incorporated into the existing Malaysian Standard. Amendments can be of technical and/or editorial nature.

Technical corrigendum: A corrected reprint of the current edition which is issued to correct either a technical error or ambiguity in a Malaysian Standard inadvertently introduced either in drafting or in printing and which could lead to incorrect or unsafe application of the publication.

NOTE: Technical corrigenda are not to correct errors which can be assumed to have no consequences in the application of the MS, for example minor printing errors.

STANDARDS MALAYSIA has appointed **SIRIM Berhad** as the agent to develop, distribute and sell Malaysian Standards.

For further information on Malaysian Standards, please contact:

Department of Standards Malaysia
Ministry of Science, Technology and Innovation
Level 1 & 2, Block 2300, Century Square
Jalan Usahawan
63000 Cyberjaya
Selangor Darul Ehsan
MALAYSIA

Tel: 60 3 8318 0002
Fax: 60 3 8319 3131
<http://www.standardsmalaysia.gov.my>
E-mail: central@standardsmalaysia.gov.my

OR **SIRIM Berhad**
(Company No. 367474 - V)
1, Persiaran Dato' Menteri
Section 2, P. O. Box 7035
40700 Shah Alam
Selangor Darul Ehsan
MALAYSIA

Tel: 60 3 5544 6000
Fax: 60 3 5510 8095
<http://www.sirim.my>
E-mail: msonline@sirim.my

Contents

	Page
Committee representation	iii
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General and safety requirements	4
5 Type of fumigation enclosures	6
6 Fumigation considerations	7
7 Preparing for fumigation enclosures	11
8 Calculating fumigant dosage	14
9 Gas introduction and distribution	15
10 Monitoring fumigant concentrations	16
11 Completing the fumigation	19
Annex A Methyl bromide as an ozone depleting gas	20
Annex B Pressure testing enclosures for gas-tightness	21
Annex C Commodities for which problems may occur when fumigated with methyl bromide	24
Annex D Example of a fumigation certificate	25
Annex E Monitor tube placement for container fumigation	26
Annex F Arrangements of gas supply pipes for single and multiple manifold systems to ensure balanced distribution of fumigant gas into the fumigation enclosure	28
Annex G Vapourisers for methyl bromide	31
Annex H Calculating the volume of differently shaped fumigation enclosures	34

Contents *(continued)*

	Page
Annex J Monitoring Ready Reckoner for methyl bromide	35
Annex K Examples of 'top-up' calculations.....	36
Annex L Example of a record of fumigation	39
Bibliography	40

Committee representation

The Industry Standards Committee on Chemicals and Materials (ISC B) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Agriculture
Department of Chemistry, Malaysia
Department of Standards Malaysia
Malaysian Association of Standards Users
Malaysian Ceramic Industry Group
Malaysian Institute of Chemistry
Malaysian Paint Manufacturers Association
Malaysian Pulp and Paper Manufacturer's Association
Minerals and Geoscience Department Malaysia
Ministry of International Trade and Industry
Science and Technology Research Institute for Defence
SIRIM Berhad (Secretariat)
Universiti Malaya
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Pesticides and Agrochemicals which developed this Malaysian Standard consists of representatives from the following organisations:

Ancom Crop Care Sdn Bhd
Department of Agriculture
Department of Chemistry, Malaysia
Department of Environment
Malaysian Agricultural Research and Development Institute
Malaysian Association of Standards Users
Malaysian CropLife and Public Health Association
Malaysian Palm Oil Board
Malaysian Rubber Board
Nufarm Technologies (M) Sdn Bhd
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
Universiti Putra Malaysia

Co-opted members:

Department of Agriculture
Ministry of Health Malaysia
Pest Control Association of Malaysia
Universiti Teknologi MARA