



MALAYSIAN STANDARD

MS 1972:2007

TEST METHOD FOR DENSITY OF SMOKE FROM THE BURNING OR DECOMPOSITION OF PLASTICS

ICS: 83.080.01

Descriptors: plastics, burning, decomposition, plastics, smoke, smoke density, smoke development

FOR SALE WITHIN MALAYSIA ONLY

This Malaysian Standard is identical to ASTM D 2843-99 (Reapproved 2004), Standard test method for density of smoke from the burning or decomposition of plastics. Copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428, USA. Reprinted by permission of ASTM International (except for the page listing the Malaysian Standard Exceptions)

© Copyright 2007

DEPARTMENT OF STANDARDS MALAYSIA

DEVELOPMENT OF MALAYSIAN STANDARDS

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

The main function of the Department 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 are developed through consensus by committees which comprise of balanced representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject in hand. These standards where appropriate 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.

The Department of Standards appoints **SIRIM Berhad** as the agent to develop Malaysian Standards. The Department also appoints SIRIM Berhad as the agent for distribution and sale of Malaysian Standards.

For further information on Malaysian Standards, please contact:

Department of Standards Malaysia

Century Square, Level 1 & 2
Blok 2300, Jalan Usahawan
63000 Cyberjaya
Selangor D.E.
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
P.O. Box 7035, Section 2
40911 Shah Alam
Selangor D.E.

Tel: 60 3 5544 6000
Fax: 60 3 5510 8095

<http://www.sirim.my>

CONTENTS

	Page
Committee representation.....	ii
Foreword.....	iii
1 Scope.....	1
2 Referenced documents.....	1
3 Terminology.....	2
4 Summary of test method.....	2
5 Significance and use.....	2
6 Apparatus.....	2
7 Test specimen.....	3
8 Conditioning.....	4
9 Standard procedure.....	4
10 Special procedure.....	4
11 Optional procedures.....	4
12 Treatment of data.....	5
13 Report.....	5
14 Precision and bias (Standard procedure).....	5
15 Precision and bias (Special procedure).....	6
16 Keywords.....	6
Tables	
1 Smoke density rating (SDR).....	11
2 Precision data for special procedure.....	11
Figures	
1 Schematic diagram of smoke chamber.....	7
2 Light absorption versus time.....	8
3 Exploded view of burner.....	8
4 Smoke density test chamber photometer.....	9
5 Auxiliary burner.....	10

Committee representation

The Plastics and Plastics Products Industry Standards Committee (ISC J) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Department of Standards Malaysia
Federation of Malaysian Manufacturers
Institut Kimia Malaysia
Jabatan Kerja Raya
Lembaga Getah Malaysia
Malaysian Association of Standards Users
Malaysian Petrochemical Association
Malaysian Plastics Manufacturers Association
Ministry of Domestic Trade and Consumer Affairs
Ministry of Health
Ministry of International Trade and Industry Malaysia
Plastics and Rubber Institute of Malaysia
SIRIM Berhad (Advanced Polymer and Composites Programme)
SIRIM QAS International Sdn Bhd (Product Certification Section)
The Institution of Engineers, Malaysia
Universiti Kebangsaan Malaysia
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on General Methods of Test for Plastics which recommends adoption of the ASTM Standard consists of representatives from the following organisations:

Federation of Malaysian Manufacturers (Khind Ind Sdn Bhd)
Hicom Teck See Manufacturing (M) Sdn Bhd
IKRAM Research Sdn Bhd
Institut Kimia Malaysia
Polypropylene (M) Sdn Bhd
SIRIM Berhad (Advanced Polymer and Composites Programme)
SIRIM Berhad (Secretariat)
Universiti Kebangsaan Malaysia
Universiti Teknologi Malaysia
Universiti Teknologi MARA

FOREWORD

The adoption of the ASTM Standard as a Malaysian Standard was recommended by the Technical Committee on General Methods of Test for Plastics under the authority of the Plastics and Plastics Products Industry Standards Committee.

This Malaysian Standard is identical to ASTM D 2843-99 (Reapproved 2004), *Standard test method for density of smoke from the burning or decomposition of plastics*, published by the ASTM International, with the exceptions as listed below.

MALAYSIAN STANDARD EXCEPTIONS

- a) in the sub-clauses 8.1 and 8.2, the temperature and relative humidity have been changed from “23 ± 3 °C (73.4 ± 3.6 °F) and 50 % ± 10 %” to “27 °C ± 2 °C and 65 % ± 5 %”, respectively; and
- b) Reference to ASTM Standards should be replaced by equivalent Malaysian Standards as follows:

Referenced ASTM Standards

ASTM D 618, *Practice for conditioning plastics for testing*

ASTM D 883, *Terminology relating to plastics*

Corresponding Malaysian Standards

MS ISO 291, *Plastics – Standard atmospheres for conditioning and testing*

MS 1440, *Glossary of terms for plastics*

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.