IEC 60754-1

Edition 3.0 2019-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION
PUBLICATION GROUPÉE DE SÉCURITÉ

AMENDMENT 1
AMENDEMENT 1

Test on gases evolved during combustion of materials from cables – Part 1: Determination of the halogen acid gas content

Essai sur les gaz émis lors de la combustion des matériaux prélevés sur câbles – Partie 1: Détermination de la quantité de gaz acide halogéné

IEC 60754-1:2011-11/AMD1:2019-11(en-fr)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC
La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC
Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform
La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,…). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished
Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc
Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org
Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary
67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

IEC 60754-1

Edition 3.0 2019-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION
PUBLICATION GROUPÉE DE SÉCURITÉ

AMENDMENT 1
AMENDEMENT 1

Test on gases evolved during combustion of materials from cables – Part 1: Determination of the halogen acid gas content

Essai sur les gaz émis lors de la combustion des matériaux prélevés sur câbles – Partie 1: Détermination de la quantité de gaz acide halogéné

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 13.220.40; 29.020; 29.060.20

ISBN 978-2-8322-7579-5

FOREWORD

This amendment has been prepared by IEC technical committee 20: Electric cables.

The text of this amendment is based on the following documents:

FDIS	Report on voting
20/1882/FDIS	20/1891/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Add at the end of the first paragraph, the following new dashed item:

– *Part 3: Measurement of low level of halogen content by ion chromatography*

5.4 Combustion boats

In the last paragraph, replace the sentence “The combustion boat shall then be weighed to an accuracy of 0,1 mg” *with the following new text:*

The combustion boat shall then be weighed with an analytical balance in mg, rounded to one decimal figure, with an accuracy as described in 5.7.

5.6 Air supply system

Replace the second and third paragraphs, including the NOTE with the following:

The flow rate of air, ρ, shall be 20 m/h × (π/4) x D^2 x 10^{-3} with a tolerance of ±10 %, where D is the internal diameter of the quartz tube.

EXAMPLE

If D = 30 mm, 20 m/h × (π/4) × D^2 x 10^{-3}= 14,1 l/h, and the flow rate can be in the range 12,7 l/h to 15,5 l/h.

If D = 46 mm, 20 m/h × (π/4) × D^2 x 10^{-3}= 33,2 l/h, and the flow rate can be in the range 29,9 l/h to 36,5 l/h.

NOTE The flow rate of air, ρ, is related to the velocity, v, according to the formula

$$\rho = v \times \frac{\pi D^2}{4} \times 10^{-3}$$

where

D is the internal diameter of the tube (mm);

ρ is the flow rate of air (l/h);

v is the speed of air (m/h).

If v = 20 m/h, this becomes, ρ = 15,7 m/h × D^2 x 10^{-3}.

Replace under Method 2 the second sentence with the following:

The air shall be filtered and dried and shall be introduced on the inlet side of the quartz glass tube (see Figure 4).

5.7 Analytical balance

Replace the sentence with the following:

The balance shall have a resolution and an accuracy of ±0,1 mg or better.

5.8 Laboratory glassware

Replace “ISO 1042” *with* “ISO 1042 Class B”.

5.9 Reagents

Delete, in list item d), “nitrobenzene” and the WARNING note.

6.3 Mass of specimen

Replace the first sentence with the following:

Weigh the combustion boat (m_1) as defined in 5.4.

Replace, at the end of the second sentence, the text “which shall be weighed to an accuracy of 0,1 mg,” *with* “which shall be weighed as defined in 5.4.”.

7.4 Washing procedure

Replace, at the end of the last sentence, “made up to 1 000 ml” *with* “made up to the 1 000 ml mark.”.

7.5.1 Blank test

Delete, in list item c), “, nitrobenzene”.

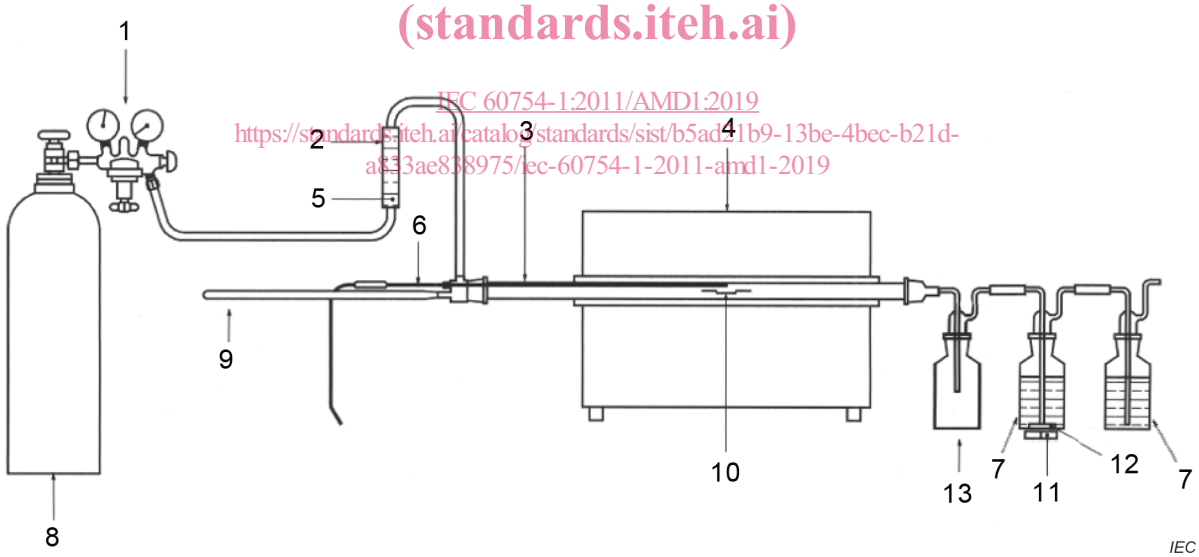
7.5.2 Material test

Delete, in list item c), “, nitrobenzene”.

10 Test report

Figure 3

Replace Figure 3 with the following new Figure 3:



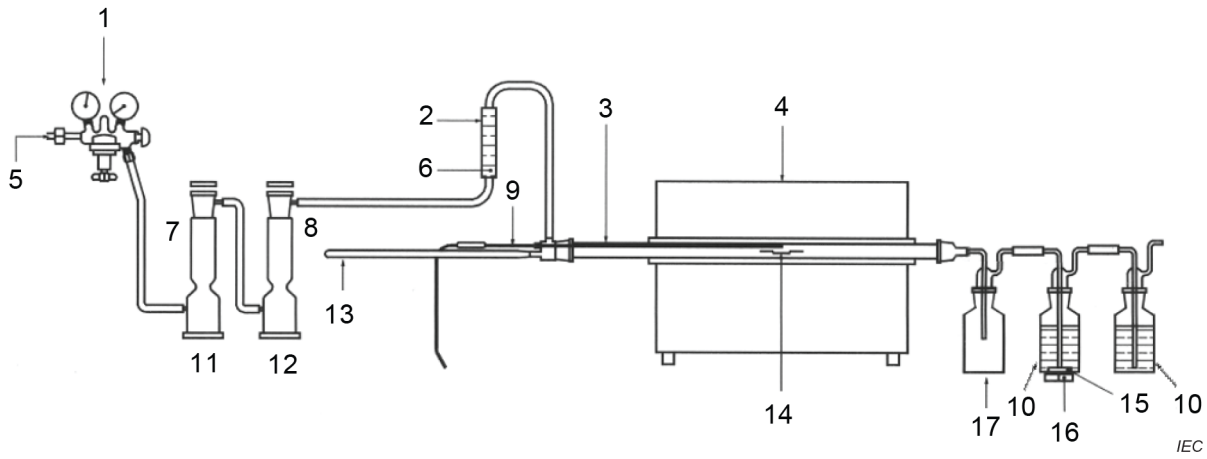
Key

1	Pressure reducing valve	8	Synthetic air
2	Flow meter	9	Device for inserting combustion boat containing test specimen
3	Quartz glass tube	10	Combustion boat containing test specimen
4	Furnace	11	Magnetic stirrer
5	Needle valve	12	Magnetic stirring bar
6	Thermocouple	13	Optional empty bottle to prevent suck-back of water into the quartz glass tube
7	Gas washing bottles		

**Figure 3 – Test apparatus: method 1 –
Use of synthetic or compressed air from a bottle**

Figure 4

Replace Figure 4 with the following new Figure 4:



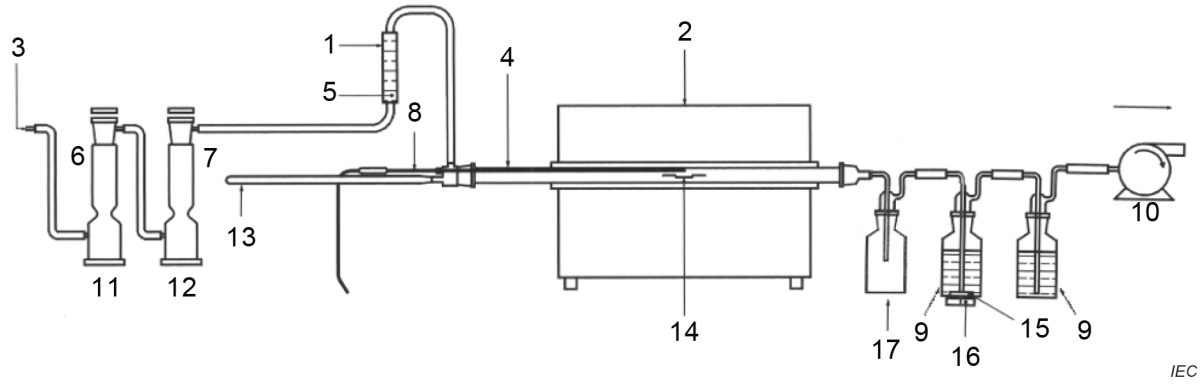
Key

1	Pressure reducing valve	10	Gas washing bottles
2	Flow meter	11	Air filtering
3	Quartz glass tube	12	Air drying
4	Furnace	13	Device for inserting combustion boat containing test specimen
5	Compressed air	14	Combustion boat containing test specimen
6	Needle valve	15	Magnetic stirring bar
7	Activated charcoal	16	Magnetic stirrer
8	Silica gel	17	Optional empty bottle to prevent suck-back of water into the quartz glass tube
9	Thermocouple		

**Figure 4 – Test apparatus: method 2 –
Use of laboratory compressed air supply**

Figure 5

Replace Figure 5 with the following new Figure 5:



Key

1	Flow meter	10	Suction pump
2	Furnace	11	Air filtering
3	Ambient air	12	Air drying
4	Quartz glass tube	13	Device for inserting combustion boat containing test specimen
5	Needle valve	14	Combustion boat containing test specimen
6	Activated charcoal	15	Magnetic stirring bar
7	Silica gel	16	Magnetic stirrer
8	Thermocouple	17	Optional empty bottle to prevent suck-back of water into the quartz glass tube
9	Gas washing bottles		

Figure 5 – Test apparatus: method 3 –
Use of ambient air sucked by means of a suction pump