

---

---

**Pipes and fittings made of crosslinked  
polyethylene (PE-X) — Estimation of the  
degree of crosslinking by determination  
of the gel content**

AMENDMENT 1

iTeh STANDARD PREVIEW

(standards.iteh.ai)  
*Tubes et raccords en polyéthylène réticulé (PE-X) — Estimation du  
degré de réticulation par le mesurage du taux de gel*

ISO 10147:2004/Amd 1:2008

AMENDEMENT 1  
<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 10147:2004/Amd 1:2008](https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2008

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO 10147:2004 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, *General properties of pipes, fittings and valves of plastic materials and their accessories – Test methods and basic specifications*.

INTERNATIONAL STANDARD PREVIEW

(standards.iteh.ai)

[ISO 10147:2004/Amd 1:2008](https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 10147:2004/Amd 1:2008](https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>

# Pipes and fittings made of crosslinked polyethylene (PE-X) — Estimation of the degree of crosslinking by determination of the gel content

## AMENDMENT 1

Page 1, 3.1

Delete the existing text, and insert:

**“3.1 Xylene**, an isomeric mixture with a purity  $\geq 98$  % volume fraction and a boiling range of 137 °C to 144 °C, to which a 1 % volume fraction of antioxidant has been added. The antioxidant may be either 2,2-methylene-*bis*(4-methyl-6-*t*-butylphenol) or 3-(3,5-di-*t*-butyl-4-hydroxyphenyl)propionate or a combination of both.”

Page 2, Clause 5

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

After the first paragraph, add the following paragraph.

“Unless otherwise specified in the referring standard, at least two test pieces shall be prepared.”

ISO 10147:2004/Amd 1:2008  
<https://standards.iteh.ai/catalog/standards/sist/55dc4621-8a5b-45ca-bd15-f3448a3bec8f/iso-10147-2004-amd-1-2008>

Page 3, 6.3

Add the following paragraph:

“The solvent can be re-used after distillation with the addition of a further 1 % volume fraction of antioxidant (3.1). In case of dispute, use a new or freshly distilled solution.”

Page 3, 6.5

Delete the existing text, and insert:

**“6.5** Carefully remove the cage and the residue of the test piece from the solution after the time specified in 6.4.

**CAUTION — Take care when removing the cage from the boiling solution (see 3.1)."**

Page 3, 6.7

Delete the existing text, and insert:

**“6.7** Allow to cool to ambient temperature and weigh the residue (mass  $m_3$ ) or the cage, lid and residue (mass  $m_4$ ) to an accuracy of 1 mg.”

*Page 3, Clause 7*

Modify the introductory phrase to read:

“Calculate the individual degree of crosslinking,  $G$ , of the material in the test pieces as the percentage by mass of the insoluble material, using one of the following equations, as appropriate:”

After the last sentence, add the following sentence:

“Calculate the average degree of crosslinking,  $G_a$ , from the individual results.”

*Page 4, Clause 8, item a)*

Delete the existing text, and insert:

“a) a reference to this International Standard and, if applicable, to the standard making reference to this International Standard;”

*Page 4, Clause 8, item c)*

Delete the existing text, and insert:

“c) the degree of crosslinking,  $G$ , for the individual test pieces and the average,  $G_a$ ,”

**ITeH STANDARD PREVIEW**  
**(standards.iteh.ai)**

<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 10147:2004/Amd 1:2008](https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 10147:2004/Amd 1:2008](https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008)  
<https://standards.iteh.ai/catalog/standards/sist/33de4621-8a3b-43ca-bdf3-f3448a3bec8f/iso-10147-2004-amd-1-2008>

---

---

**ICS 23.040.20; 23.040.45**

Price based on 2 pages