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

**AMENDMENT 1**

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

AMENDEMENT 1



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## Foreword

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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*.

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# 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

After the first paragraph, add the following paragraph:

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

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,  $G_a$ .”

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