

---

---

**Gas analysis — Preparation of  
calibration gas mixtures —**

**Part 1:  
Gravimetric method for Class I  
mixtures**

**AMENDMENT 1: Corrections to formulae  
in Annex E and Annex G**

*Analyse des gaz — Préparation des mélanges de gaz pour  
étalonnage*  
*Partie 1: Méthode gravimétrique pour les mélanges de Classe I*  
*AMENDEMENT 1: Correction des formules à l'Annexe E et à l'Annexe G*



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

<https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020>



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical committee ISO/TC 158, *Analysis of gases*.

A list of all parts in the ISO 6142 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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

[ISO 6142-1:2015/Amd 1:2020](https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020)

<https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020>

# Gas analysis — Preparation of calibration gas mixtures —

## Part 1: Gravimetric method for Class I mixtures

### AMENDMENT 1: Corrections to formulae in Annex E and Annex G

Annex E, Formulae (E.3) and (E.4)

Replace Formula (E.3) with the following:

$$M_i = \sum_{z=1}^Z v_{z,i} A_z$$

Replace Formula (E.4) with the following:

$$u^2(M_i) = \sum_{z=1}^Z v_{z,i}^2 u^2(A_z)$$

iTech STANDARD PREVIEW  
(standards.itech.ai)  
ISO 6142-1:2015/Amd 1:2020  
<https://standards.itech.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020>

Annex G, Formulae (G.1), (G.2), (G.3), (G.4), (G.5), (G.6) and (G.7)

Replace Formula (G.1) with the following:

$$\frac{\partial y_k}{\partial m_j} = \frac{1}{n_\Omega} \frac{x_{k,j}}{M_j} - \frac{n_k}{n_\Omega^2} \frac{1}{M_j}$$

Replace Formula (G.2) with the following:

$$\frac{\partial y_k}{\partial M_i} = -\frac{1}{n_\Omega} \sum_{j=1}^r \frac{x_{k,j} m_j}{M_j^2} x_{ij} + \frac{n_k}{n_\Omega^2} \sum_{j=1}^r \frac{m_j}{M_j^2} x_{i,j}$$

Replace Formula (G.3) with the following:

$$\frac{\partial y_k}{\partial x_{i,j}} = -\frac{1}{n_\Omega} \frac{x_{k,j} m_j}{M_j^2} M_i + \frac{n_k}{n_\Omega^2} \frac{m_j}{M_j^2} M_i \quad (\text{for } i \neq k)$$

Replace Formula (G.4) with the following:

$$\frac{\partial y_k}{\partial x_{k,j}} = \frac{1}{n_\Omega} \left( -\frac{x_{k,j} m_j}{M_j^2} M_k + \frac{m_j}{M_j} \right) + \frac{n_k}{n_\Omega^2} \frac{m_j}{M_j^2} M_i$$

Replace Formula (G.5) with the following:

$$n_k = \sum_{j=1}^r \frac{x_{k,j} m_j}{M_j}$$

Replace Formula (G.6) with the following:

$$n_\Omega = \sum_{j=1}^r \frac{m_j}{M_j}$$

Replace Formula (G.7) with the following:

$$M_j = \sum_{i=1}^q x_{i,j} M_i$$

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

<https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020>

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

[ISO 6142-1:2015/Amd 1:2020](https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020)

<https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020>

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

ISO 6142-1:2015/Amd 1:2020  
<https://standards.iteh.ai/catalog/standards/sist/0bf8073b-8006-41f4-b7d0-4bd30be7c0d7/iso-6142-1-2015-amd-1-2020>