



**ISO 6142-2**

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

Part 2:  
**Gravimetric method for Class II  
mixtures**

*Analyse des gaz — Préparation des mélanges de gaz pour  
étalonnage —*

*Partie 2: Méthode gravimétrique pour les mélanges de Classe II*

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

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The revision of ISO 6142 was initiated to provide better guidance to the users of this document especially with respect to quality assurance measures and laboratory accreditation. In preparing the revision, it was decided to accommodate two types of calibration gas mixtures with different levels of quality assurance and with different levels of measurement uncertainty. The difference in the two classes can be summarized as follows.

Class I type calibration gas mixtures are prepared according to ISO 6142-1. The mixtures are individually verified. Provided rigorous and comprehensive quality assurance and quality control procedures are adopted during the preparation and verification of these mixtures, measurement uncertainties can be achieved that are substantially smaller than by any other preparation method.

Class II calibration gas mixtures may be prepared individually or in batches and certified with an associate generic measurement uncertainty.

Individually prepared Class II calibration gas mixtures are produced in a similar manner to Class I calibration gas mixtures, but these mixtures are not individually verified. Verification of individually prepared Class II calibration gas mixtures is based on periodic verification checks.

Class II type calibration gas mixtures, which are produced in batches, extend the principles of gravimetric preparation described in ISO 6142-1.

For mixtures containing identical components and nominally identical amount-of-substance fractions, Class II type calibration gas mixtures will usually have amount-of-substance fractions with larger measurement uncertainties than their Class I counterparts.

This document was developed to be in agreement with ISO 6142-1.