

ICS 71.100.20
CCS G 86



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 35530-2017

**Gas mixtures -- Gravimetric preparation -- Mastering
correlations in composition**

混合气体 称量制备 组分相关性控制

(English Translation)

Issued on: December 29, 2017

Implemented on: July 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

Table of Contents

Foreword
1 Scope
2 Normative references
3 Symbols and abbreviations of terms

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method identical with ISO/T S29041.2008 "mixed gas Weighing Preparation of component-related control." the documents of our country that are consistent with the corresponding international documents that are normative references in this standard are as follows.

Preparation of gas mixtures for gas analysis and calibration - Weighing method (ISO 6142:2001, IDT).

This standard compared with ISO/T S29041.2008 (E), made the following editorial changes.

--- Corrigendum will be included in the text of the contents, that is, in Table 8 will be "not consider the relevance of the U (value)" to "do not consider the relevance of u (value)".

--- Fixed an error in ISO/T S29041.2008, Formula (A.9) will be " x_{pi} "To" G pi ", " x_{pj} "To" G pj ".

This standard proposed by the China Petroleum and Chemical Industry Federation.

This standard by the National Gas Standardization Technical Committee (SAC/TC206) centralized.

This standard was drafted. Southwest Chemical Research and Design Institute Co., Ltd., China Institute of Metrology, Sichuan University, Guangdong Huate Gas Unit Co., Ltd., Shanghai Hua love chromatography Technology Co., Ltd.

1 Scope

This standard on the ISO 6142 weighing gas mixture prepared by the inherent factors and the impact of data processing were discussed Theory and explanation.

All calculations in this standard are based on the preparation of synthetic natural gas with the target composition of nitrogen 1.4% (mole fraction), carbon dioxide 1.8% by mole,

ethane 9.4% by mole, propane 3.4% by mole, n-butane 1% by mole, methane 83% (Mole fraction).

In this case, all matters relating to the viability of the gas mixture, the selection of preparation procedures and the weighing procedure and sequence are related to ISO 6142 in the same rules. The same applies to the relevant estimates of the sources of basic uncertainty and to the purity tables for each preparation gas.

All calculations in this standard use the calculation principles, tools, and algorithms described in Appendix A. In order to simplify the space used in the calculation Matrix transformation, matrix inversion, matrix calculations and other procedural steps are not specific to each use to expand the description.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 6142 Gas Analysis Calibration Preparation of mixed gas Weighing method
(Gasanalysis-Preparationofcalibration gasmixtures-Gravimetricmethod)

3 Symbols and abbreviations of terms

CV_i gas component *i* calorific value, *i* = 1, *n* CV mixed gas calorific value *G* describes the system of model equations for the measured variables *J* Jacobian matrix *m* quality mg The mass of the gas component in a gas cylinder of a gas mixture obtained by weighing *m_m* The mass of the mixed gas cylinder and the reference cylinder is poor after the corresponding filling procedure is completed *m_x* Corresponds to the corrected mass (corrected value) of the mixed gas cylinder and the reference cylinder after the filling step is completed *M_i* Molar mass of gas component *i*, *i* = 1, *n* *M* The molar mass of the mixed gas *Q* transfer matrix *U* (*x*) Expansion of the numerical uncertainty of *x* *u* (*x*) The standard uncertainty of the value *x* *u₂* (*p_i*, *p_j*) variance of the value *p_i* (*i* = *j*) or *p_i* and *p_j* covariance (*i* != *j*) *u_B* buoyancy correction (see note) *u_{exp}* cylinder inflation correction *u_m* balance indication of the uncertainty (cumulative estimate)