



ISO/TC 197
Hydrogen technologies

Email of secretary: jonathan.lafontaine@bnq.qc.ca
Secretariat: SCC (Canada)

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secretariat	NEN (Netherlands Standardization Institute)	
	Vlinderweg 6	P.O. Box 5059
	NL-2623 AX Delft	NL-2600 GB Delft
	Telephone:	+31 15 2 690 338
	Fax:	+31 15 2 690 207
	E-mail:	sui.wan@nen.nl
chairman	Adriaan van der Veen	VSL
		P.O. BOX 654
		NL-2600 AR Delft
	Telephone:	+31 15 2 691 500
	E-mail:	avdveen@vsl.nl

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Secretariat report of ISO/TC 158 "Analysis of gases"

November 2017 – October 2019

Scope

The scope of ISO/TC 158 is adjusted to the needs of the sector and is defined as standardization in the field of gas analysis, including:

- terminology;
- preparation of calibration gas mixtures;
- sampling;
- transfer lines;
- analytical methods including evaluation of characteristics of analyzers.

Excluded are the subjects falling within the scope of other ISO Technical Committee (e.g. ISO/TC 28, ISO/TC 146 and ISO/TC 193) unless specifically requested. The work is pointed towards the use and fabric of calibration gases for a better comparison of different measurements.

Organization

Chairman

Adriaan van der Veen, VSL
Thijsseweg 11, NL- 2629 JA Delft
P.O.Box 654, NL - 2600 AR Delft
Telephone: +31 15 2691733
E-mail: avdveen@vsl.nl

Secretariat

NEN (Secretary Sui Wan)
Vlinderweg 6, NL- 2623 AX Delft
P.O. Box 5059, NL- 2600 GB Delft
Telephone: +31 15 2690338
E-mail: sui.wan@nen.nl

Technical programme manager

Kirsi Silander, ISO/CS
E-mail: SILANDER@iso.org

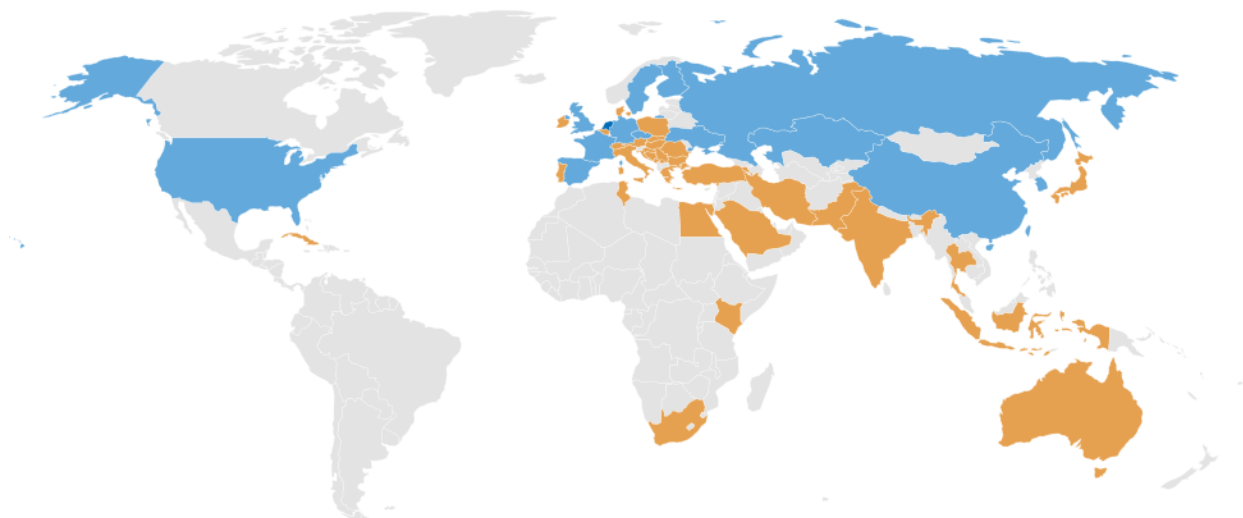
French translations

AFNOR
E-mail: laurie.jardel@afnor.org

Working groups

WG	Title	Convenor	Country
1	Terminology	Werner Weterings	The Netherlands
2	Quality assurance of gas analysis	Adriaan van der Veen	The Netherlands
3	Gravimetric methods	Rob Wessel	The Netherlands
4	Comparison methods and certificates	Vacancy	-----
5	Static and dynamic methods	Vacancy	-----
7	Hydrogen fuel analytical methods	Martine Carré	France

Membership



Type	Members
P-members (14) <i>participating members</i> <i>[blue]</i>	China (SAC) Czech Republic (UNMZ) Finland (SFS) France (AFNOR) Germany (DIN) Greece (NQIS ELOT) Korea, Republic of (KATS) Netherlands, the (NEN) Russian Fed. (GOST R) Spain (AENOR) Sweden (SIS) Ukraine (DTR) United Kingdom (BSI) United States (ANSI)
O-members (33) <i>observing members</i> <i>[orange]</i>	Armenia (SARM) Australia (SA) Austria (ASI) Belgium (NBN) Bosnia-Herzegovina (BAS) Bulgaria (BDS) Croatia (HZN) Cuba (NC) Denmark (DS) Egypt (EOS) Hong Kong (ITCHKSAR) Greece (NQIS ELOT) Hungary (MSZT) India (BIS) Indonesia (BSN) Ireland (NSAI) Italy (UNI) Japan (JISC) Kenya (KEBS) Korea, Rep. of (KATS) Montenegro (ISME) Pakistan (PSQCA) Poland (PKN) Portugal (IPQ) Romania (ASRO) Saudi Arabia (SASO) Serbia (ISS) Slovakia (SUTN) South Africa (SABS) Switzerland (SNV) Thailand (TISI) Tunisia (INNORPI) Turkey (TSE)
L-members (2) ¹ <i>liaison organizations</i>	OIML – International Organization of Legal Metrology (cat. A); liaison officer: Mr A. van der Veen EIGA – European Industrial Gases Association (cat. B); liaison officer: Mr E. Elias
Liaisons within ISO	ISO/TC 28 – Petroleum products and lubricants; liaison officer: Secretariat ISO/TC 146, SC 1 and SC 6 – Air quality; liaison officer: Secretariat ISO/TC 193 – Natural gas; liaison officer: Mr R. Wessel ISO/TC 197 – Hydrogen technologies; liaison officer: Ms M. Carré ISO/REMCO – Reference materials committee; liaison officer: Mr A. van der Veen

¹ Category A: Organizations that make an effective contribution to the work of the technical committee for questions dealt with by this technical committee; Category B: Organizations that have indicated a wish to be kept informed of the work of the technical committee for questions dealt within the technical committee.

Since the last plenary, United States (ANSI) has become a P-member.

Work programme (as of 2019-09-01)

Item	Title	WG	Stage
Preliminary work items			
14912	Gas analysis – Conversion of gas mixture composition data [limit date DIS 2019-11-24, cancel. 2020-05-24]	4	10.99
Active work items			
19230	Gas analysis – Gas analysis – Sampling guidelines [limit date DIS 2019-08-15, cancel. 2020-02-15]	4	30.60
6141/Amendment	Gas analysis – Contents of certificates for calibration gas mixtures [limit date IS 2019-05-24, cancel. 2019-11-24]	4	50.00
6145-1	Gas analysis – Preparation of calibration gas mixtures using dynamic methods – Part 1: General aspects [limit date IS 2019-07-13, cancel. 2020-01-24]	5	60.00

¹ Based on latest ISO/TMB resolutions preliminary work items being on the work programme for over three years are automatically cancelled by ISO. These work items can be reactivated by ISO/TC 158.

A complete list of projects is included in Annex A.

Published standards since last meeting

21087	Gas analysis – Analytical methods for hydrogen fuel – Proton exchange membrane (PEM) fuel cell applications for road vehicles
19229	Gas analysis – Purity analysis and the treatment of purity data
14167	Gas analysis – General quality aspects and metrological traceability of calibration gas mixtures
6145-7	Gas analysis – Preparation of calibration gas mixtures using dynamic methods – Part 7: Thermal mass-flow controllers

Actions from the last meeting

Status of resolutions (by September 2019) taken at the 22nd plenary meeting of ISO/TC 158 'Analysis of gases' in Saint-Denis on 22 November 2017. See N762 for full details.

N°	Resolution	Status
2017/01	Adoption of the agenda	Completed
2017/02	Drafting committee	Completed
2017/03	Report of the secretariat	Completed
2017/04	Review structure working groups	Completed
2017/05	WG 2 report	Completed
2017/06	WG 3 report	Completed
2017/07	Revision ISO 19229	Completed [Published on 2019-7-22]
2017/08	WG 4 report	Completed
2017/09	WG 5 report	Completed
2017/10	JWG7 report	Completed
2017/11	Development ISO 21087	Completed [Published on 2019-6-26]
2017/12	Report internal liaisons	Completed
2017/13	Report external liaisons	Completed
2017/14	Review of existing liaisons	Completed
2017/15	ISO/AMD 6141	Completed [FDIS awaiting]
2017/16	Revision ISO 14912	Completed [DIS awaiting]
2017/17	Revision ISO 14167	Completed [Published on 2018-11-22]
2017/18	SR of ISO 6145-10	Completed
2017/19	SR of ISO 6143	Completed
2017/20	Reappointment convenor WG 4	Completed
2017/21	Update GAS Analysis 2019/2021	Completed
2017/22	ISO developments	Completed
2017/23	ISO meeting platform	Completed

N°	Resolution	Status
2017/24	Use WebEx facilities	Completed
2017/25	Review Business Plan	Open
2017/26	Complimentary standards	Completed
2017/27	Next meeting	Completed
2017/28	Acknowledgements	Completed

Areas of progress or concerns

Since the last plenary meeting four standards have been published (see previous section). At this moment, ISO/TC 158 has three active work items. Most of the above work items are making good progress. On this moment the work programme includes one preliminary work item.

ISO/AWI 6142-2 Preparation of calibration gas mixtures – Part 2: Gravimetric method for Class II mixtures has been cancelled in December 2018. One important reason was that the scope of part 2 was not sufficiently clear. WG 3 will continue to develop a considered draft before a new work item proposal is requested.

Most of the P-members are involved in one or more of the items on the work programme or are represented at working group meetings or plenary meetings.

Availability of resources is an important aspect for developing new standards and maintaining existing standards in the ISO/TC 158 portfolio. Activities are undertaken to increase the participation in the WGs, both from countries already with members as well as from other countries. Along with this, ISO/TC158 hopes to also increase its membership.

Werner Weterings is appointed as the convenor of WG 1. The positions for WG4 and WG 5 convenors are now vacant.

Meetings

Meeting	Place	Date
TC	Saint Denis	December 2011
	Delft	May 2013
	London	November 2014
	Delft	July 2016
	Saint-Denis	November 2017
WG 1	London	November 2012
	Delft	May 2013
	Pullach	July 2014
WG 2	Saint Denis	November 2013
	Pullach	July 2014
	London	November 2014
	Delft	June 2015
	Saint-Denis	December 2015
	Delft	July 2016
	Teddington	December 2016
	Saint-Denis	November 2017
	Berlin	June 2018
	Saint Denis	November 2013
WG 3	Pullach	July 2014
	London	November 2014
	Delft	June 2015
	Saint-Denis	December 2015
	Delft	July 2016
	Teddington	December 2016
	Lidingö	May 2017
	Saint-Denis	November 2017
	Berlin	June 2018
	Delft	November 2018
WG 4	Saint Denis	November 2013
	Pullach	July 2014
	London	November 2014
	Delft	June 2015
	Saint Denis	December 2015
	Delft	July 2016
	Teddington	December 2016
	Lidingö	May 2017
	Saint-Denis	November 2017
	Berlin	June 2018
WG 5	Delft	November 2018
	Saint Denis	November 2013
	Pullach	July 2014
	London	November 2014
	Delft	June 2015
	Saint Denis	December 2015
	Delft	July 2016
	Teddington	December 2016
	Lidingö	May 2017
	Saint-Denis	November 2017
JWG 7	Berlin	June 2018
	Sacramento	April 2016
	Pullach	July 2016
	Amsterdam	December 2016
	Seoul	May 2017
	Torrence	November 2017
Saint Denis	October 2018	

ANNEX A LIST OF ISO/TC 158 STANDARDS

Standard	Title	WG	Date of publication	Project leader	Status	Follow-up	Deadline	Action by Secretariat
ISO 7504	Gas analysis – Vocabulary	WG 1	2015	Heine	Standard published on 2015/05	Systematic review in 2020/4		
ISO 14167	Gas analysis – General quality aspects and metrological traceability of calibration gas mixtures	WG 2	2018	Van der Veen	Published 2018/11 and replaced ISO/TS 14167			
ISO 6142-1	Gas analysis – Preparation of calibration gas mixtures – Part 1: Gravimetric method for Class I mixtures	WG 3	2015	Wessel	Standard published	Systematic review in 2020/7		
ISO/AWI 6142-2	Gas analysis – Preparation of calibration gas mixtures – Part 2: Gravimetric method for Class II mixtures	WG 3		Elias	Cancelled, WG is still working on an improved draft.			
ISO 19229	Gas analysis – Purity analysis and the treatment of purity data	WG 3	2019	Van der Veen	Standard published on 2019/07			
ISO/TS 29041	Gas analysis – Gravimetric preparation – Mastering correlations in composition	WG 3	2008	Bremser	Confirmed after systematic review in 2019/3			
ISO 16664	Gas analysis – Handling and use of calibration gases and gas mixtures – Guidelines	WG 4		Carré	Standard published	Systematic review	2022/04	
ISO 6141	Gas analysis – Contents of certificates for calibration gas mixtures	WG 4	2015	Van der Veen	Standard published on 2015/05	Systematic review	2020/01	
ISO 6141:2015 /Amendment	Contents of certificates for calibration gas mixtures -- Amendment 1	WG4		Van der Veen	Prepare for publication since 2019/5 (Cancellation 2019/11)			

Standard	Title	WG	Date of publication	Project leader	Status	Follow-up	Deadline	Action by Secretariat
ISO 6143	Gas analysis – Comparison methods for determining and checking the composition of calibration gas mixtures	WG 4	2001	Bremser	Confirmed after systematic review	Systematic review	2022-07	
ISO 12963	Gas analysis – Comparison methods for the determination of the composition of gas mixtures based on one- and two-point calibration	WG 4		Bremser	Standard published	Systematic review	2022-04	
ISO 15796	Gas analysis – Investigation and handling of analytical bias	WG 4	2005	Bremser	Standard under review till 2019/9			
ISO/CD 19230	Gas analysis – Sampling guidelines	WG 4			DIS under preparation	Submission of DIS for ballot	2018-08	
ISO 14912	Gas analysis – Conversion of gas mixture composition data	WG 4	2003	Hässelbarth	Standard to be revised			
ISO 14912/Cor 1	Conversion of gas mixture composition data – Technical Corrigendum 1	WG4	2006		Published			
ISO/NP 14912	Gas analysis – Conversion of gas mixture composition data	WG 4		Bremser	CD/DIS under preparation 2019/11			
ISO 6144	Gas analysis – Preparation of calibration gas mixtures – Static volumetric methods	WG 5	2003	Scawin	Confirmed after systematic review	Systematic review	2024-09	
ISO 6145-1	Gas analysis – Preparation of calibration gas mixtures using dynamic methods – Part 1: General aspects	WG 5		Cardella	IS under publication since 2019/8	International standard approx. 2019/10		
ISO 6145-1	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 1: Methods of calibration	WG 5	2003	Scawin	Published			

Standard	Title	WG	Date of publication	Project leader	Status	Follow-up	Deadline	Action by Secretariat
ISO 6145-2	Gas analysis – Preparation of calibration gas mixtures using dynamic methods – Part 2: Piston pumps	WG 5	2014	Schierjott & Van der Veen	Standard under review till 2019/12			
ISO 6145-4	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 4: Continuous injection methods	WG 5	2004	Hopkins	Confirmed after systematic review	Systematic review	2019-10	
ISO 6145-5	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 5: Capillary calibration devices	WG 5	2009	Scawin	Standard under systematic review		2019/12	
ISO 6145-6	Gas analysis – Preparation of calibration gas mixtures using dynamic methods – Part 6: Critical flow orifices	WG 5	2017	Carré	Standard published	Systematic review	2022/07	
ISO 6145-7	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 7: Thermal mass flow controllers	WG 5	2019	Van der Veen	Standard published			
ISO 6145-8	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 8: Diffusion	WG 5	2005		Confirmed after systematic review	Systematic review	2024-09	
ISO 6145-9	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 9: Saturation method	WG 5	2009	Hopkins	Standard under systematic review			
ISO 6145-10	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 10: Permeation method	WG 5	2002	Woods, Davies	Confirmed after systematic review	Systematic review	2022/10	
ISO 6145-11	Gas analysis – Preparation of calibration gas mixtures using dynamic volumetric methods – Part 11: Electrochemical preparation	WG 5	2005	Scawin	Confirmed after systematic review	Systematic review	2024-09	
ISO 21087	Gas analysis – Analytical methods for hydrogen fuel – Proton exchange membrane (PEM) fuel cell applications for road vehicles	JWG7	2019	Carré	Standard published			

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