ΑΑΔΕ
Independent Authority
for Public Revenue (IAPR)

SERVING PUBLIC INTEREST
AND SOCIETY AT LARGE

METROLOGY SERVICES

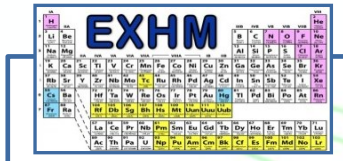
COVERED BY THE

GENERAL CHEMICAL STATE LABORATORY

Alimpaki E., Giannikopoulou P., Kakoulidis I.,
Karanikolopoulos G., Ntantou A., Schizas I.,
Skotidaki E., Stathoudaki E., Sxoina V., Tzeferakos G.

on behalf of the
Chemical Metrology Service

General Chemical State Laboratory, Athens





Εργαστήριο ΧΗμικής Μετρολογίας

Laboratory for Chemical Metrology



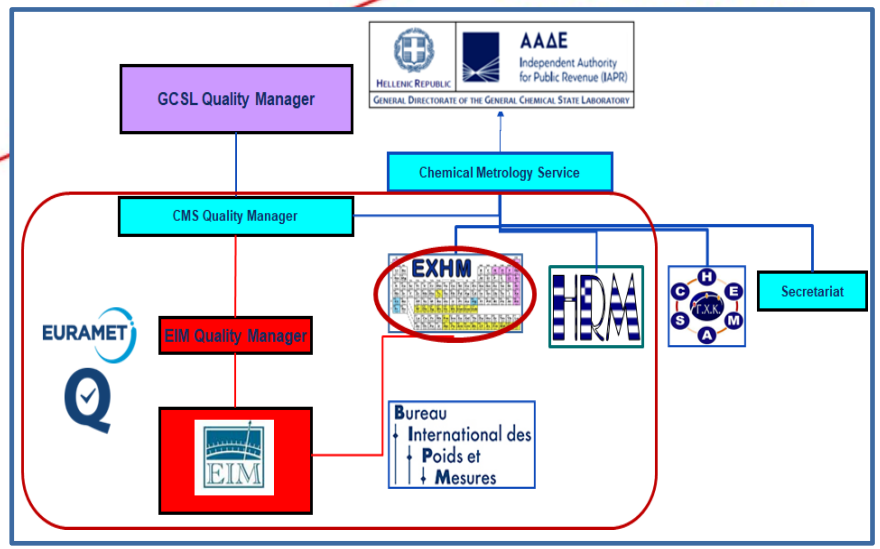
Hellenic Metrology Institute

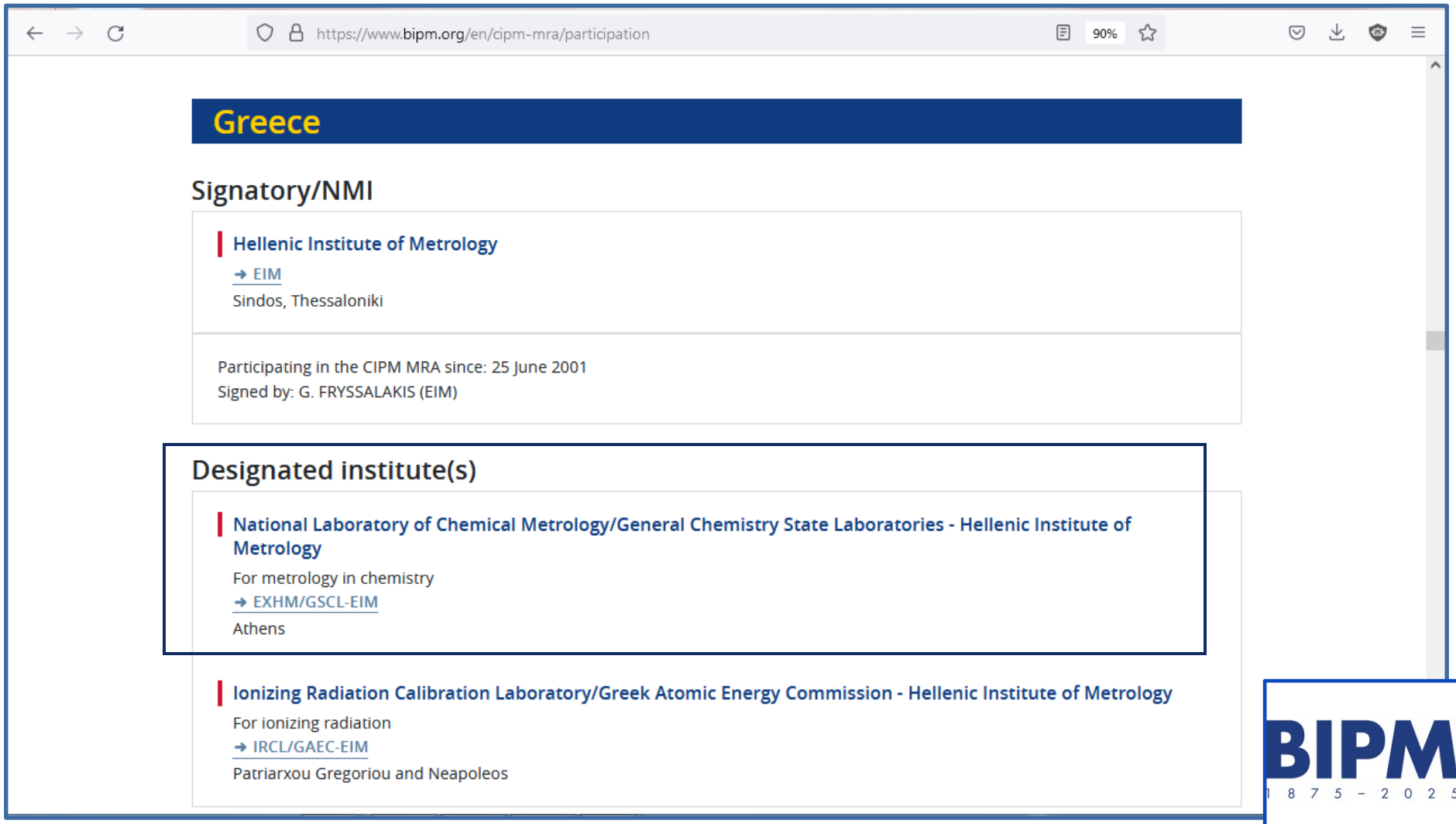
E.I.M. – Thessaloniki, 1994

General Chemical State Laboratory

G.C.S.L. – Athens, 1929

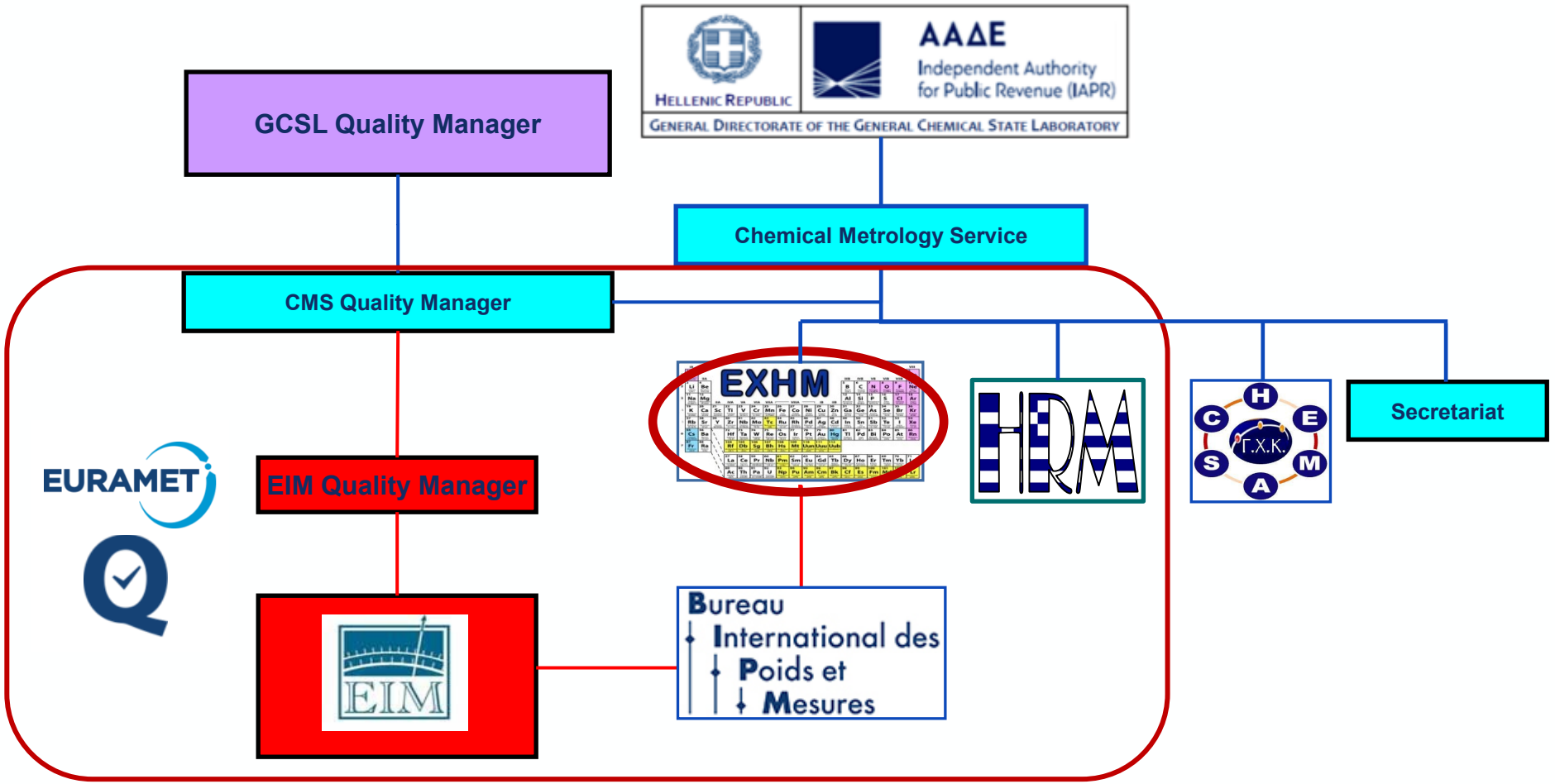






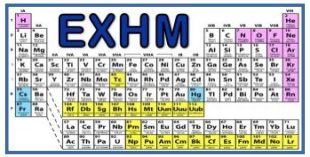
BIPM CELEBRATING 150 1875 – 2025

Chemical Metrology Service – the newest GCSL service – Organogram



Chemical Metrology Service – Quality Management System

E.XH.M.



ISO/IEC 17025:2017

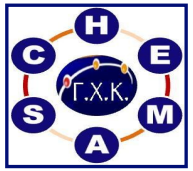
- testing under flexible scope:
- determination of organic compounds and elements with mass spectrometric techniques with emphasis on isotopic dilution
- calibration:
- purity of organic calibrators

ISO 17034 (sic)

- design and production of certified reference materials

  (primary calibrators, calibration solutions, matrix materials for contaminants)

S.CHE.M.A.



ISO/IEC 17043:2023

- proficiency testing schemes on:

  alcohol & alcoholic drinks

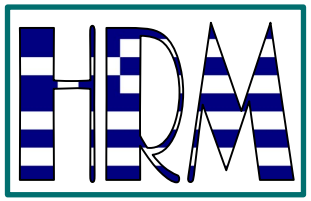
  environmental samples

  foodstuffs

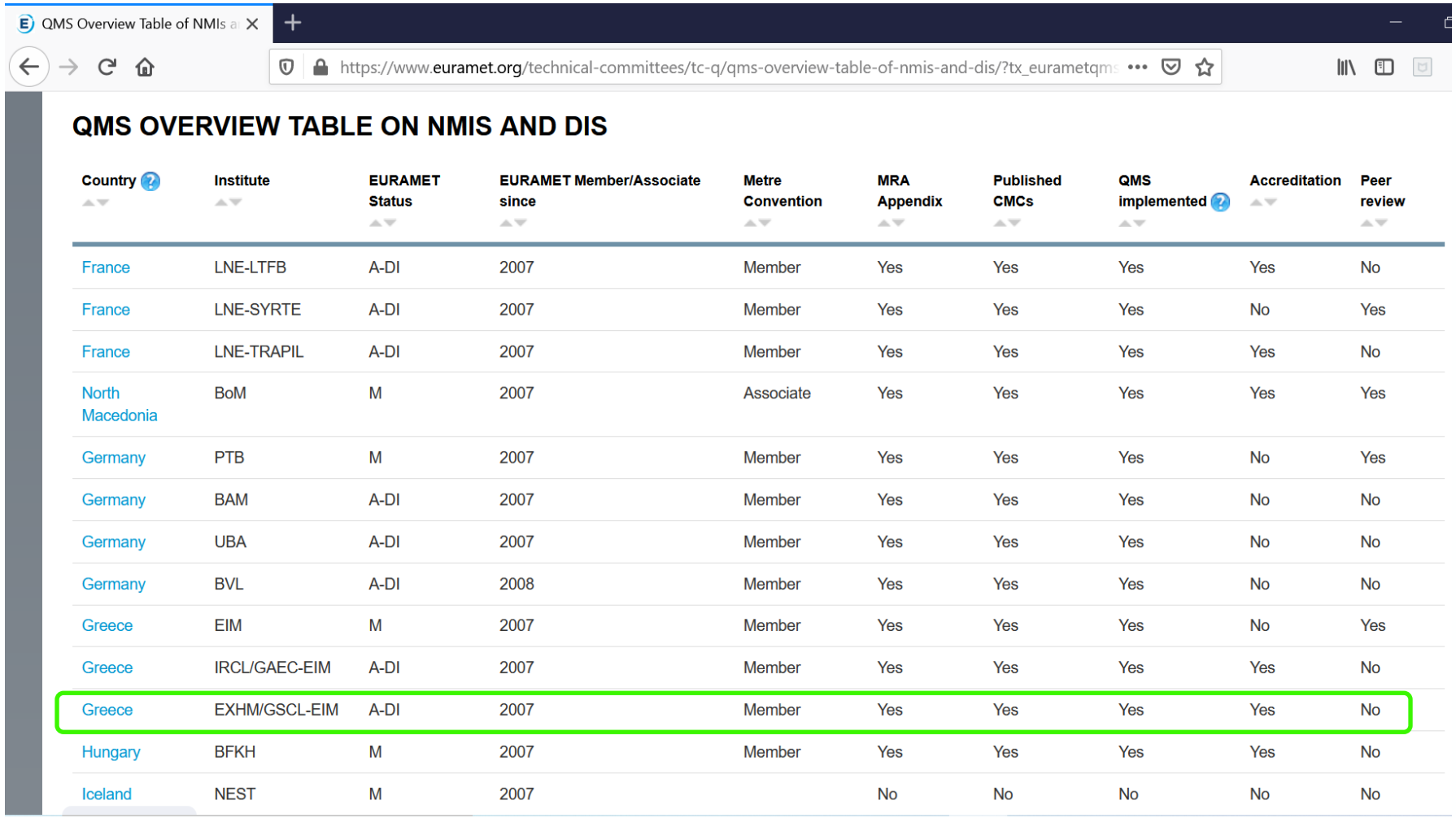
  fuels

  industrial products

  tobacco



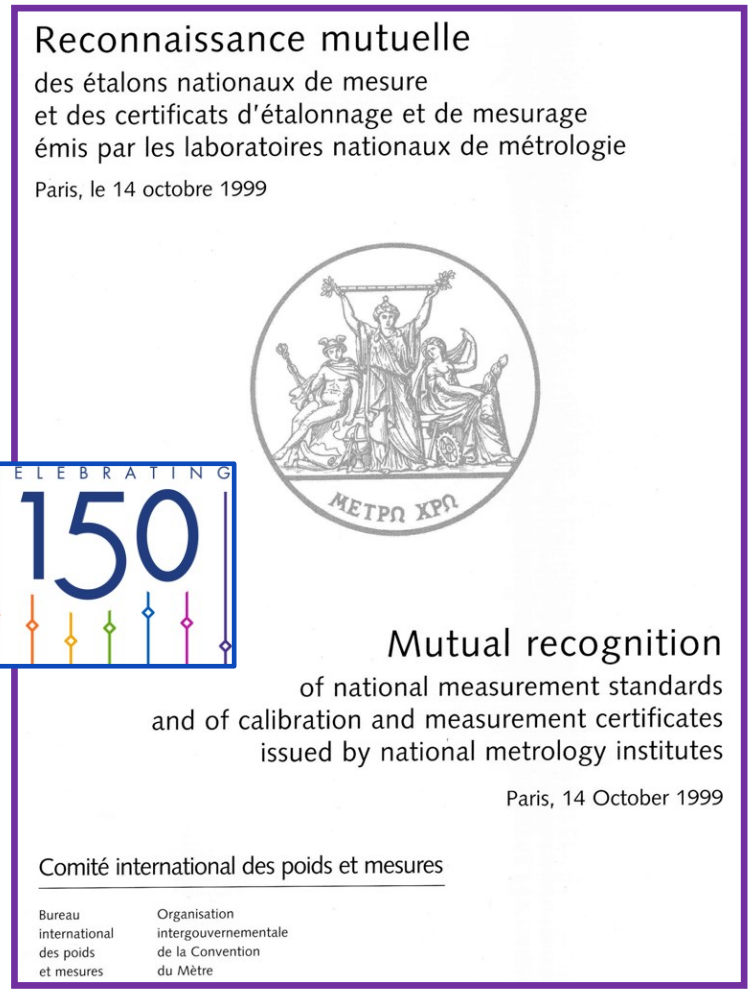
EURAMET TC-Q



QMS OVERVIEW TABLE ON NMIS AND DIS

Country	Institute	EURAMET Status	EURAMET Member/Associate since	Metre Convention	MRA Appendix	Published CMCs	QMS implemented	Accreditation	Peer review
France	LNE-LTFB	A-DI	2007	Member	Yes	Yes	Yes	Yes	No
France	LNE-SYRTE	A-DI	2007	Member	Yes	Yes	Yes	No	Yes
France	LNE-TRAPIL	A-DI	2007	Member	Yes	Yes	Yes	Yes	No
North Macedonia	BoM	M	2007	Associate	Yes	Yes	Yes	Yes	Yes
Germany	PTB	M	2007	Member	Yes	Yes	Yes	No	Yes
Germany	BAM	A-DI	2007	Member	Yes	Yes	Yes	No	No
Germany	UBA	A-DI	2007	Member	Yes	Yes	Yes	No	No
Germany	BVL	A-DI	2008	Member	Yes	Yes	Yes	No	No
Greece	EIM	M	2007	Member	Yes	Yes	Yes	No	Yes
Greece	IRCL/GAEC-EIM	A-DI	2007	Member	Yes	Yes	Yes	Yes	No
Greece	EXHM/GSCL-EIM	A-DI	2007	Member	Yes	Yes	Yes	Yes	No
Hungary	BFKH	M	2007	Member	Yes	Yes	Yes	Yes	No
Iceland	NEST	M	2007		No	No	No	No	No

MRA – Mutual Recognition Arrangement


Reconnaissance mutuelle

des étalons nationaux de mesure
et des certificats d'étalonnage et de mesurage
émis par les laboratoires nationaux de métrologie

Paris, le 14 octobre 1999

ΜΕΤΡΩ ΧΡΩ

Mutual recognition

of national measurement standards
and of calibration and measurement certificates
issued by national metrology institutes

Paris, 14 October 1999

Comité international des poids et mesures

Bureau international des poids et mesures

Organisation intergouvernementale de la Convention du Mètre

BIPM CELEBRATING 150 1875 – 2025

purpose

- to define the degree of equivalence between the measurement standards maintained by metrology institutes
- ensure the equivalence of the calibration certificates issued and the reference materials produced by metrology institutes
- the provision of a sound technical base for the development of agreements that support commercial and regulation policies between governments, organizations and/or social groups

CIPM MRA

Bureau International des Poids et Mesures

Authorization for use of the CIPM MRA Logo

I, Dr Martin J.T. Milton, Director of the International Bureau of Weights and Measures (BIPM), on behalf of the International Committee for Weights and Measures (CIPM), hereby authorize the National Laboratory for Chemical Metrology, Athens (Greece), to display the CIPM MRA Logo in their calibration and measurement certificates covered by Calibration Measurement Capabilities (CMCs) published in the BIPM key comparison database (KCDB).

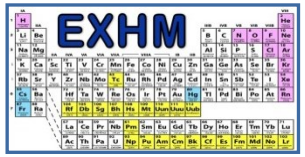
This authorization for use of the CIPM MRA Logo is given on condition that the National Laboratory for Chemical Metrology (EXHM/GCSL-EIM) fully applies the conditions detailed in the policy CIPM MRA-P 11, Appendix A and could be revoked upon breach of any of the provisions set out in the afore-mentioned policy. As said in CIPM MRA-P 11, the authorization is granted as a non-exclusive right and remains valid as long as the institute fulfils all the conditions of the CIPM MRA as evidenced by the continued publications of its CMCs in the KCDB.

Bureau International des Poids et Mesures

CIPM MRA

ΑΑΔΕ
Independent Authority for Public Revenue (IAPR)

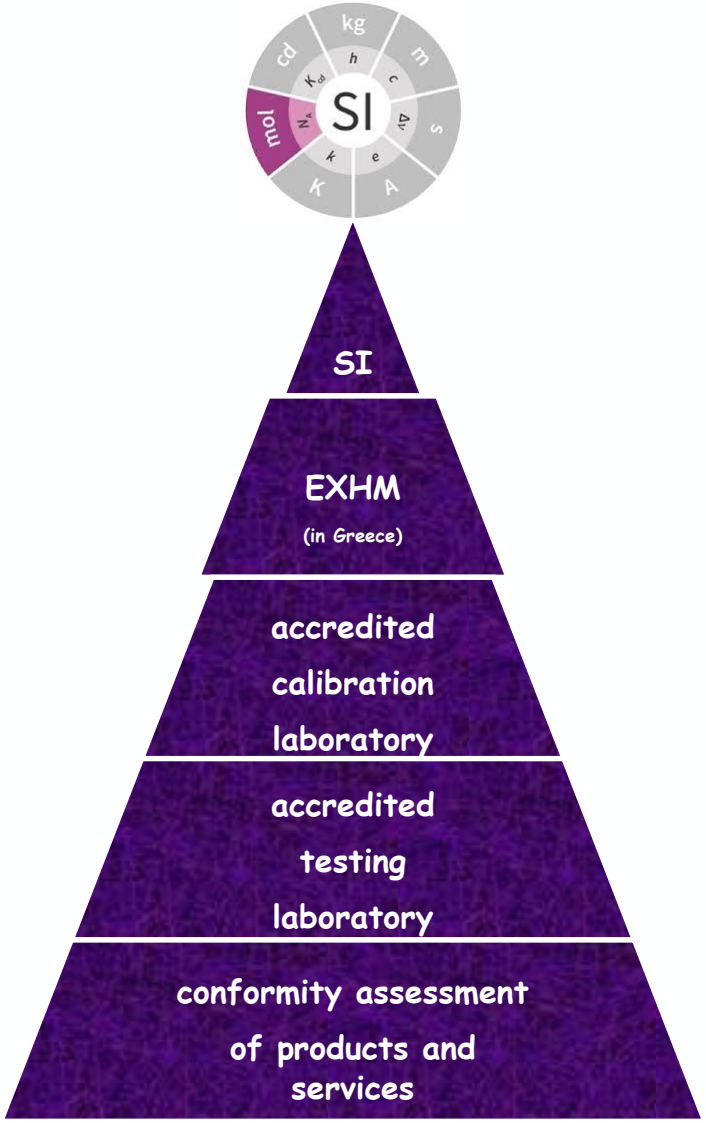
Dr Martin J.T. Milton
Director of the BIPM
8 April 2025



traceability to
International System of Units – (SI)



mole
amount of substance

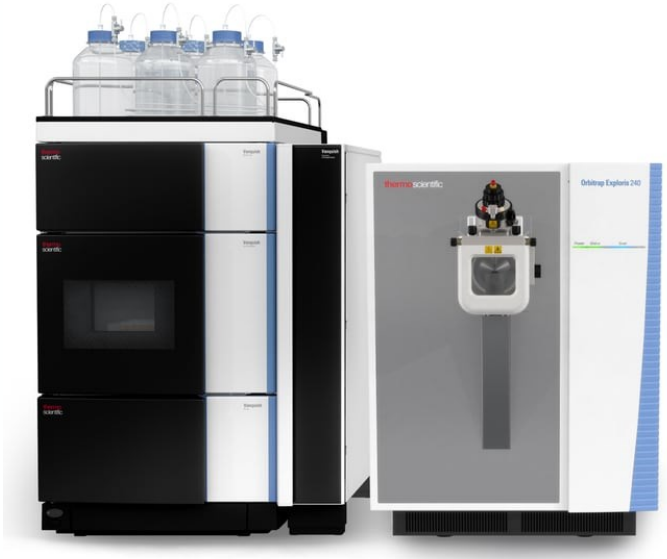


mass & NMR spectrometry - measuring systems

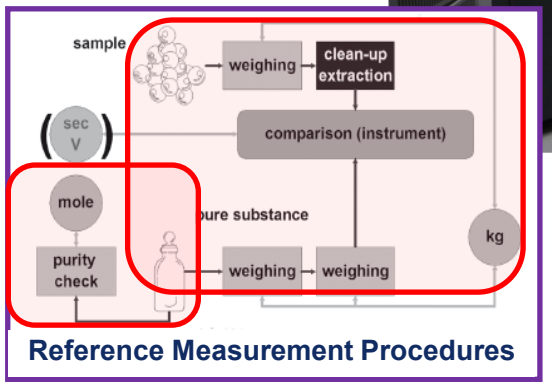


ICP-HRMS

GCxGC-HRMS Orbitrap



UPLC-HRMS Orbitrap 240



Reference Measurement Procedures





Mass comparator

qNMR



Key comparisons

NMIs:

primary measurement systems

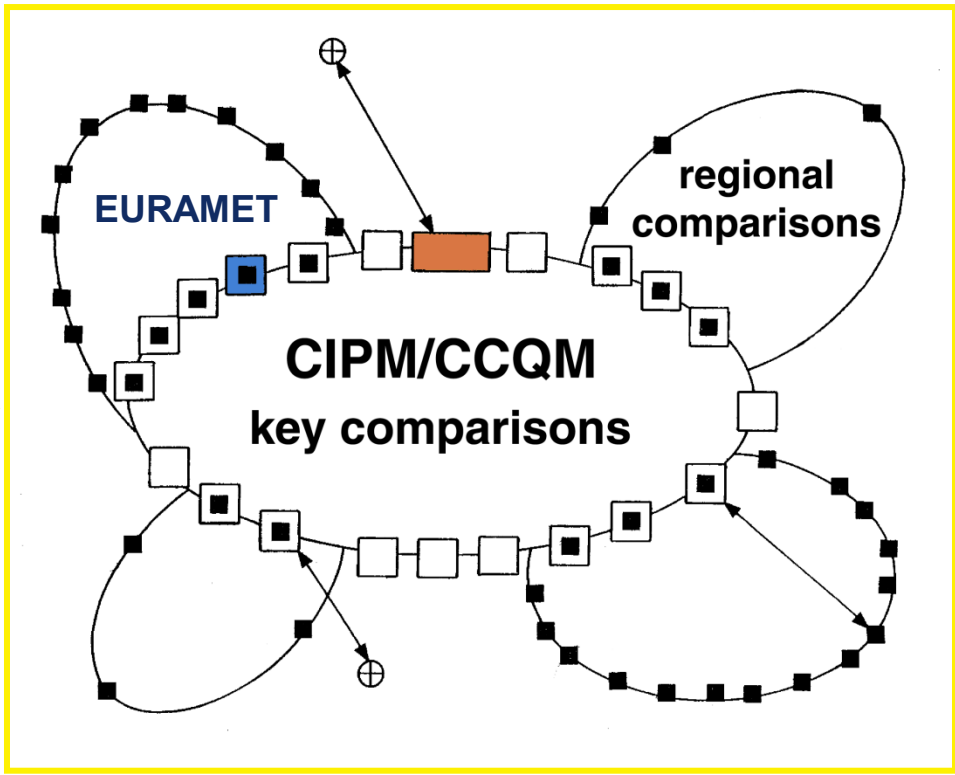
and devices

primary reference materials

accredited calibration laboratories, reference laboratories

certified reference materials (CRMs)

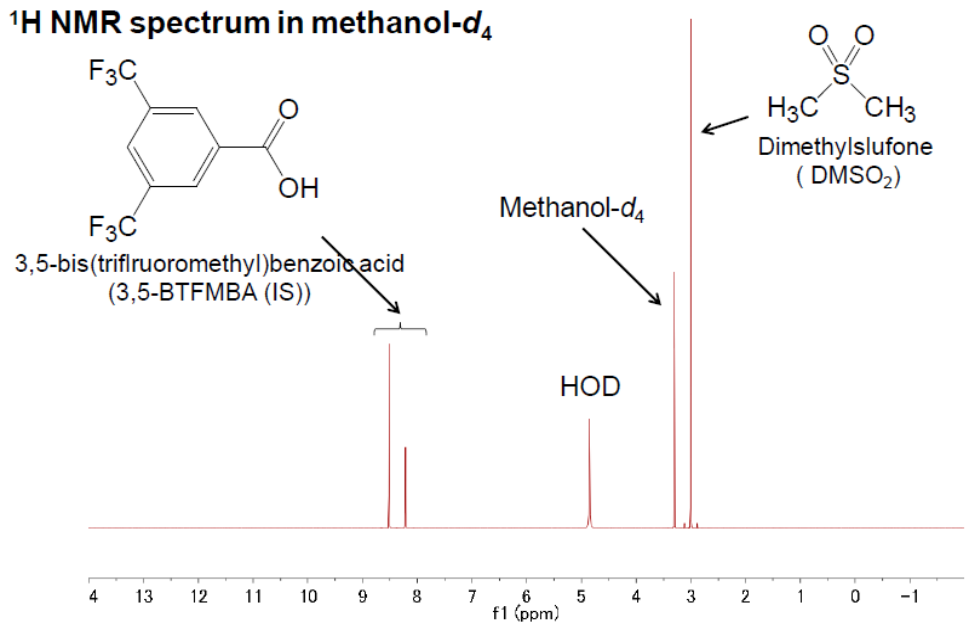
chemical testing laboratories, which have to demonstrate their traceability (ISO 17025, ISO 15189)

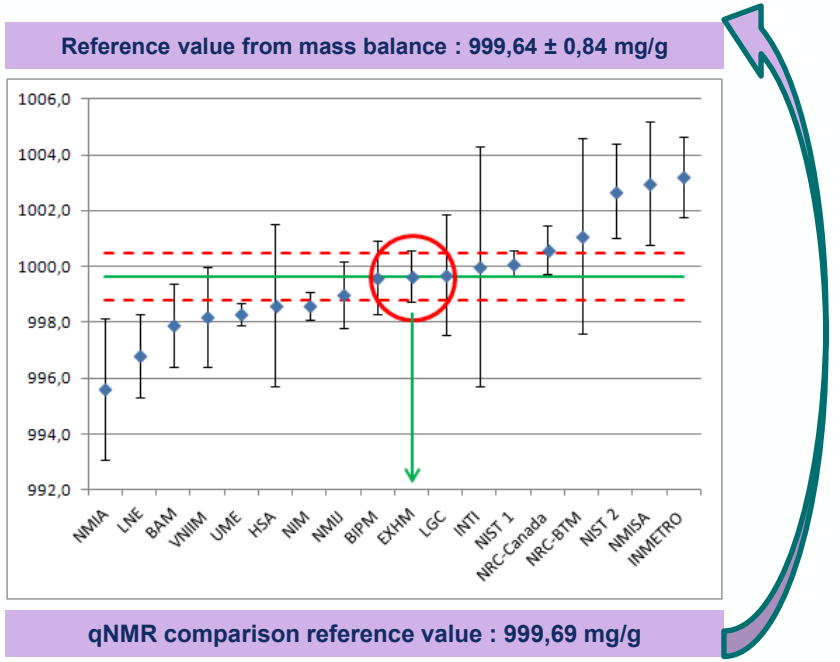


BIPM

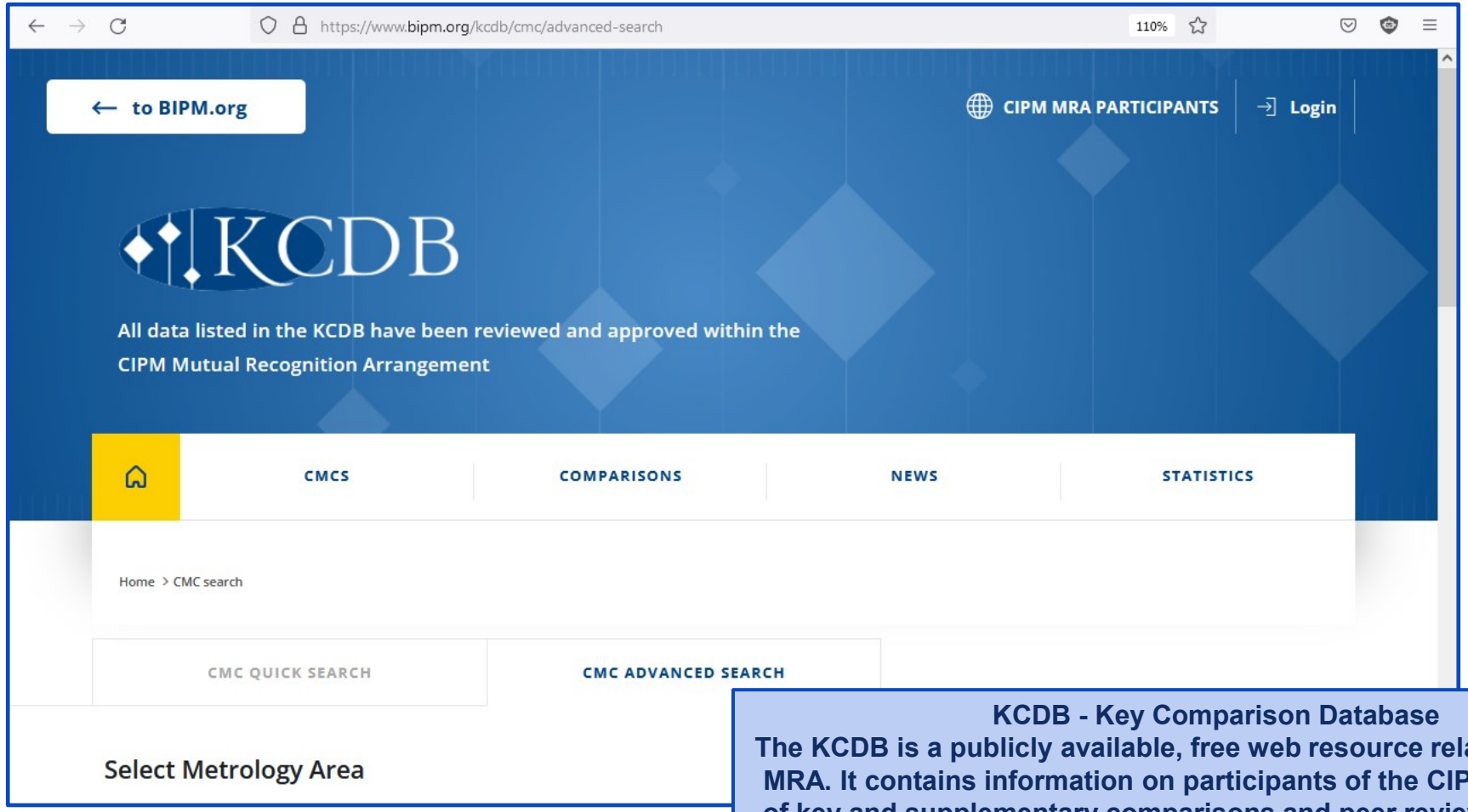
EXHM

International comparison on qNMR → CCQM-P150 (NMIJ, LGC, NMIA)





BIPM - KCDB



KCDB - Key Comparison Database
The KCDB is a publicly available, free web resource related to the CIPM MRA. It contains information on participants of the CIPM MRA, results of key and supplementary comparisons and peer reviewed Calibration and Measurement Capabilities (CMCs) (https://www.bipm.org/kcdb).

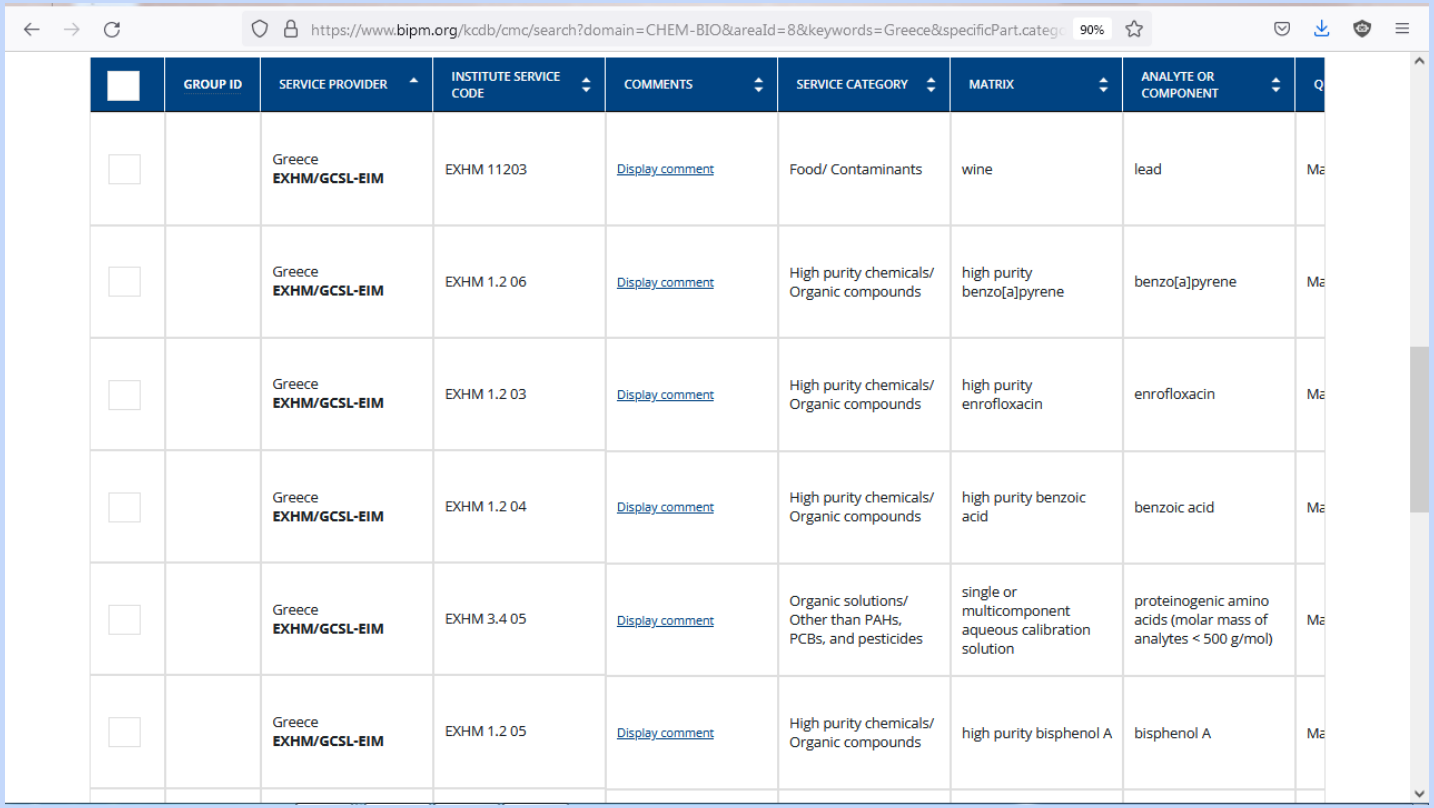
calibration and measurement capabilities (CMCs)

55 CMCs

high purity chemicals

calibration solutions

contaminants in water and food



https://www.bipm.org/kcdb/cmc/search?domain=CHEM-BIO&areaId=8&keywords=Greece&specificPart.categ 90%

GROUP ID	SERVICE PROVIDER	INSTITUTE SERVICE CODE	COMMENTS	SERVICE CATEGORY	MATRIX	ANALYTE OR COMPONENT	Q
	Greece **EXHM/GCSL-EIM**	EXHM 11203	Display comment	Food/ Contaminants	wine	lead	Ma
	Greece **EXHM/GCSL-EIM**	EXHM 1.2 06	Display comment	High purity chemicals/ Organic compounds	high purity benzo[a]pyrene	benzo[a]pyrene	Ma
	Greece **EXHM/GCSL-EIM**	EXHM 1.2 03	Display comment	High purity chemicals/ Organic compounds	high purity enrofloxacin	enrofloxacin	Ma
	Greece **EXHM/GCSL-EIM**	EXHM 1.2 04	Display comment	High purity chemicals/ Organic compounds	high purity benzoic acid	benzoic acid	Ma
	Greece **EXHM/GCSL-EIM**	EXHM 3.4 05	Display comment	Organic solutions/ Other than PAHs, PCBs, and pesticides	single or multicomponent aqueous calibration solution	proteinogenic amino acids (molar mass of analytes < 500 g/mol)	Ma
	Greece **EXHM/GCSL-EIM**	EXHM 1.2 05	Display comment	High purity chemicals/ Organic compounds	high purity bisphenol A	bisphenol A	Ma

reference materials

alcohol mass fraction
in wine & spirit drinks

phthalate calibration solutions

sulfur (S) in fuels

mycotoxin solutions

reference standards
for the calibration
of UV-Vis
spectrophotometers



CHEMICAL METROLOGY LABORATORY (EXHM/GCSL-EIM)
GENERAL CHEMICAL STATE LABORATORY - HELLENIC METROLOGY INSTITUTE
CHEMICAL METROLOGY SERVICE, 16 TSOCHA STREET, 115 21 ATHENS, GREECE
tel: +30 210 6479136-8 email: metrology.gcsl@aade.gr

CERTIFICATE OF ANALYSIS

CERTIFIED REFERENCE MATERIAL
HRM®34 05 S10_units 079, 090

Certified reference material, sulfur in diesel		
Measurand	Certified value [1]	Uncertainty [2]
	mg/kg	
sulfur	9.86	0.94

1) The certified value is determined by a laboratory intercomparison between nine (9) competent laboratories, accredited to ISO/ IEC 17025. At the same time, each laboratory analyzed dibenzothiophene standard solutions prepared gravimetrically. Dibenzothiophene purity was determined by EXHM. The certified value is traceable to the SI.
2) Estimated expanded uncertainty *U* with a coverage factor of $k = 2$, corresponding to a level of confidence of about 95%, as defined in JCGM 100:2008 (the Guide to the expression of uncertainty in measurement). Uncertainty contributions arising from characterization as well as from material homogeneity and stability have been taken into account.

The density (15 °C) of the certified reference material HRM®34 05 S10 was measured according to ISO 12185 and ASTM D 4052.
Density value and the corresponding estimated expanded uncertainty U (k = 2), are informative:
Density (15 °C): 833.6 kg/m³
Expanded uncertainty U (k = 2): 0.10 kg/m³.

The certified properties will be valid until 30/05/2025.
Validity may be extended as further evidence of stability becomes available.

NOTE
Hellenic Reference Material HRM® 34 05 S10 was produced and certified under the responsibility of the Chemical Metrology Service of Greece (EXHM/ GCSL-EIM) according to the principles laid down in the technical guidelines outlined in the Quality Manual, in accordance with the requirements of ISO 17034. It is accepted as an HRM®.

Athens, 13/11/2024

The Head of Service

ILIAS KAKOULIDIS
13/11/2024 15:59
Dr Ilias Kakoulidis

ΑΑΔΕ
Independent Authority
for Public Revenue (IAPR)

reference materials – metrological characterization

CERTIFICATE OF ANALYSIS

HRM ®

CERTIFIED REFERENCE MATERIAL

HRM OCS.001®-U

Certified reference material, trans-zearalenone in acetonitrile		
Measurand	Certified value [1)]	Uncertainty [2)]
	mg/kg	
trans-zearalenone	15.021	0.321

1) The certified value is determined by EXHM.The determination was performed gravimetrically and was verified with LC/DAD/FLD. Trans-zearalenone (ZEA) purity was determined by EXHM. The certified value is traceable to the SI.

2) Estimated expanded uncertainty *U* with a coverage factor of *k* = 2, corresponding to a level of confidence of about 95%, as defined in JCGM 100:2008 (the Guide to the expression of uncertainty in measurement). Uncertainty contributions arising from characterization as well as from material homogeneity and stability have been taken into account.

HRM ®

CERTIFIED REFERENCE MATERIAL

OCS.002®-U

Certified reference material, aflatoxin B1 in acetonitrile		
Measurand	Certified value [1)]	Uncertainty [2)]
	mg/kg	
Aflatoxin B1	10.052	0.287

1) The certified value is determined by EXHM.The determination was performed gravimetrically and was verified with LC/DAD/FLD. Aflatoxin B1 (AFB1) purity was determined by EXHM. The certified value is traceable to the SI.

2) Estimated expanded uncertainty *U* with a coverage factor of *k* = 2, corresponding to a level of confidence of about 95%, as defined in JCGM 100:2008 (the Guide to the expression of uncertainty in measurement). Uncertainty contributions arising from characterization as well as from material homogeneity and stability have been taken into account.

EXHM

CHEMICAL METROLOGY LABORATORY (EXHM/GCSL-EIM)
GENERAL CHEMICAL STATE LABORATORY - HELLENIC METROLOGY INSTITUTE
CHEMICAL METROLOGY SERVICE, 16 TSOCHA STREET, 115 21 ATHENS, GREECE
tel: +30 210 6479136-8 email: metrology.gcsl@aade.gr

EIM

CERTIFICATE OF ANALYSIS

HRM ®

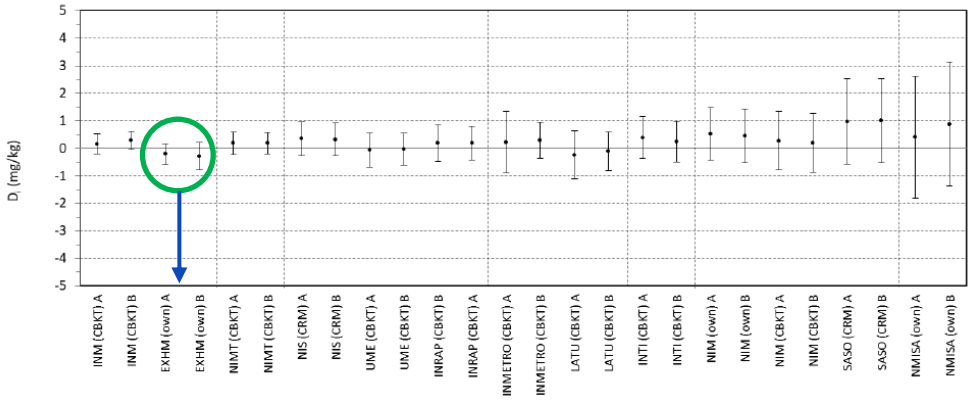
CERTIFIED REFERENCE MATERIAL

EXHM OCS.003®-U

Certified reference material, patulin in acetonitrile with 0.1 % formic acid		
Measurand	Certified value [1]	Uncertainty [2]
	mg/kg	
Patulin	10.00	0.31

1 The certified value is determined by EXHM.The determination was performed gravimetrically and was verified with LC/DAD/FLD against an independently prepared reference batch of patulin calibrant. Patulin purity was determined by EXHM. The certified value is traceable to the SI.

2 Estimated expanded uncertainty *U* with a coverage factor of *k* = 2, corresponding to a level of confidence of about 95%, as defined in JCGM 100:2008 (the Guide to the expression of uncertainty in measurement). Uncertainty contributions arising from characterization as well as from material homogeneity and stability have been taken into account.





HRM

AAΔE
Independent Authority
for Public Revenue (IAPR)

actively involved in European Metrology Networks (EMNs)

the EMNs analyse the European and global metrology needs and address these needs in a coordinated manner.

EMN members will then formulate common metrology strategies including aspects such as research, infrastructure, knowledge transfer and services.

The members will be committed to contributing to the EMN, helping to establish sustainable structures that are strategically planned from the outset.

By providing a single point of contact for information, underpinning regulation and standardisation, promoting best practice and establishing a comprehensive, longer-term infrastructure,

the EMNs aim to create and disseminate knowledge, gain international leadership and recognition, and build collaboration across the measurement science community



SAFE AND SUSTAINABLE FOOD



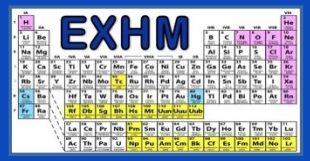
POLLUTION MONITORING



TRACE LAB MED

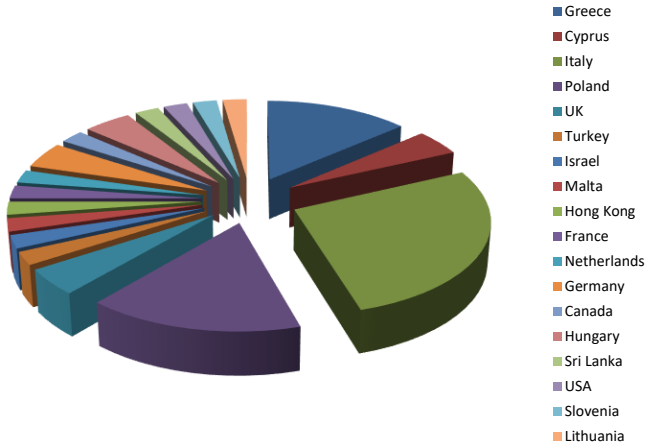
METROLOGY PARTNERSHIP | EURAMET

EUROPEAN METROLOGY NETWORKS



Proficiency testing

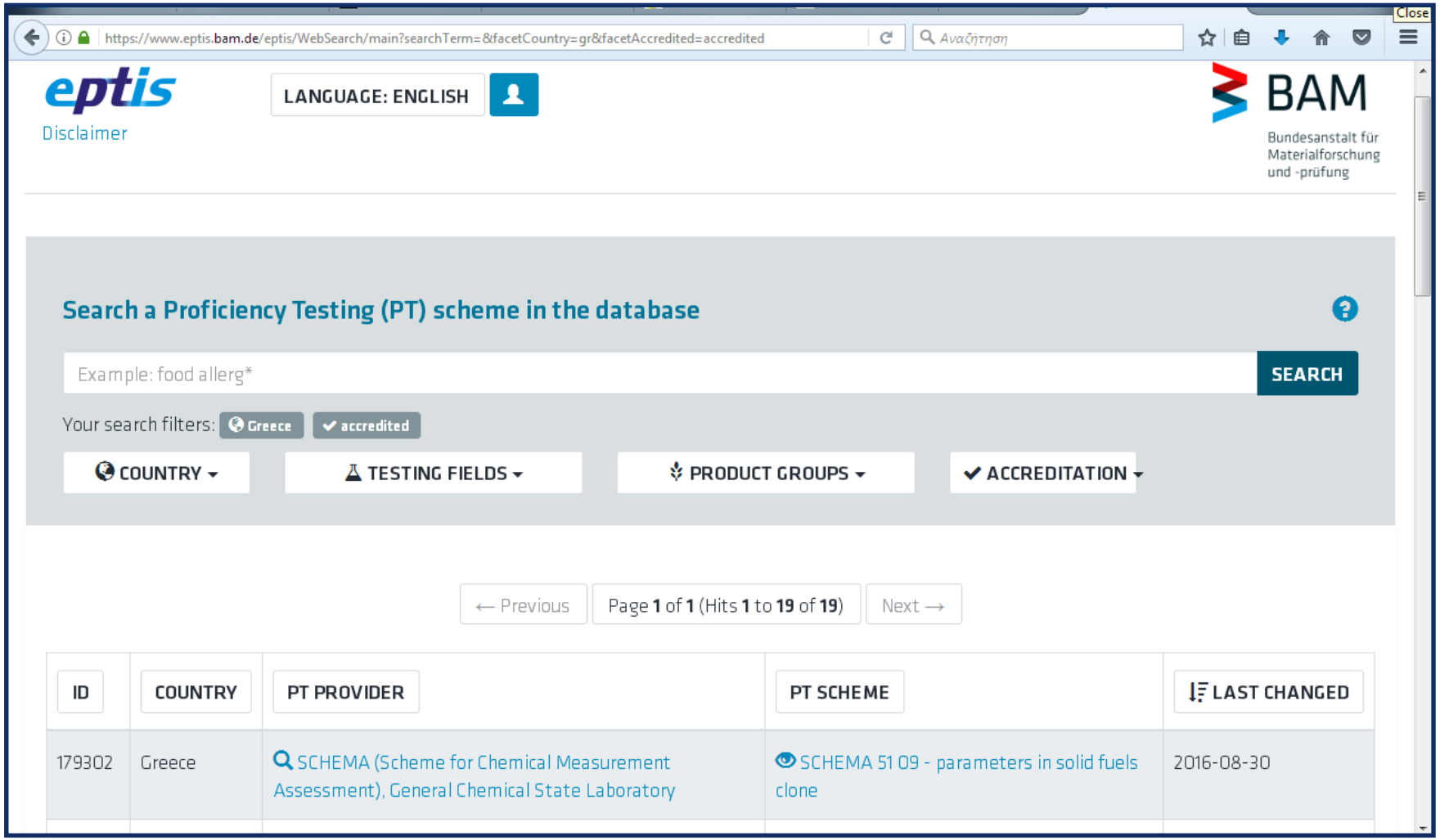
- among the services provided by the Chemical Metrology Service (GCSL) is the organization of interlaboratory proficiency testing schemes, under the **SCHEMA** logo (**S**cheme for **CHE**mical **M**easurement **A**ssessment).
- more than 18 PTs per year in environmental, industrial and agro-food fields
- included in the EPTIS database (www.eptis.bam.de)



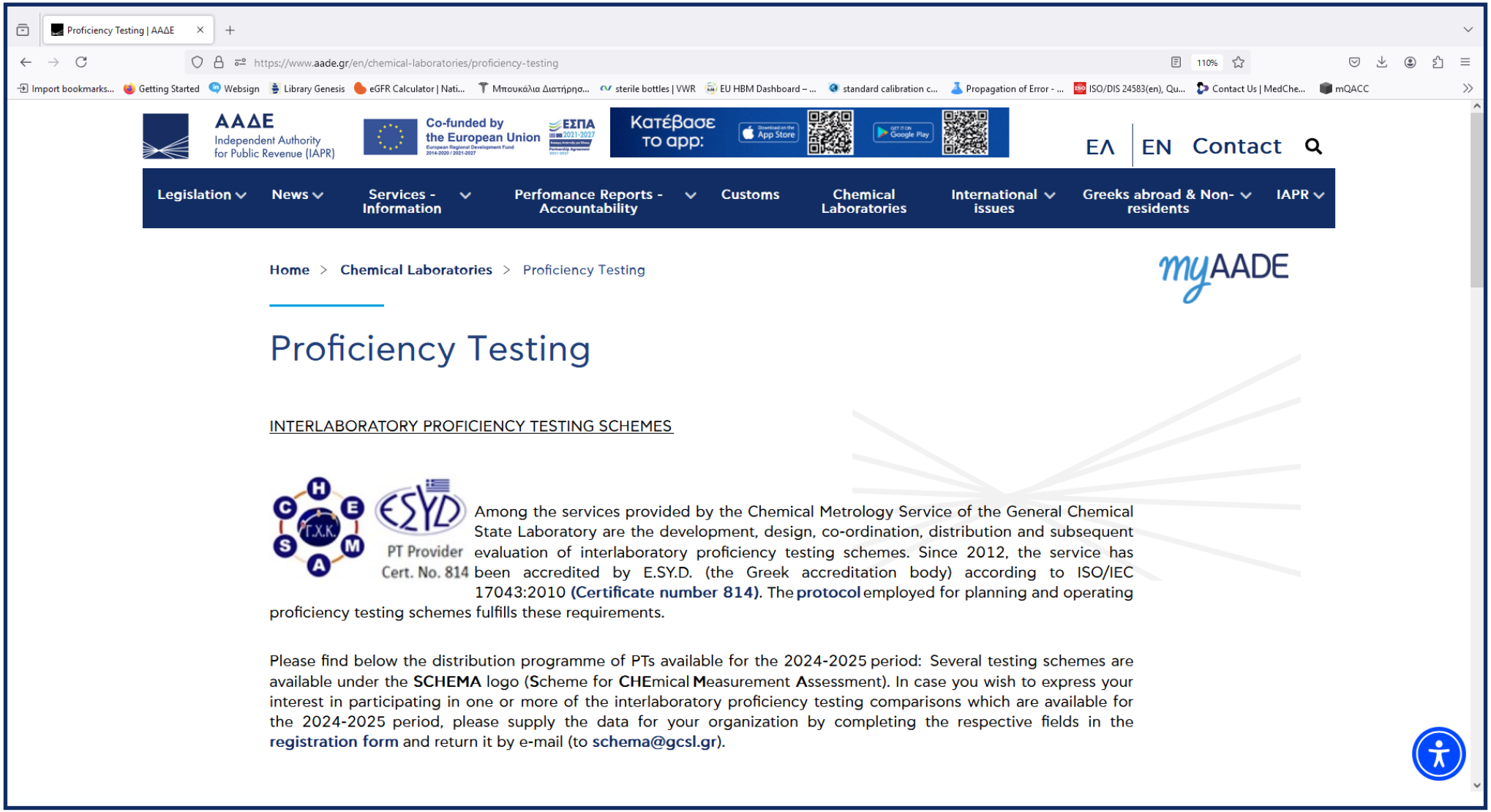
in SCHEMA PTs 30 rounds for the migration of Cd & Pb from ceramic FCMs, more than 50 laboratories participate.

the number of participating laboratories increases in each campaign,
in 2025 more than 500 from 40 countries worldwide participated.

PT providers – EPTIS database



IAPR site


Proficiency Testing | ΑΑΔΕ
https://www.aade.gr/en/chemical-laboratories/proficiency-testing
ΑΑΔΕ
Independent Authority for Public Revenue (IAPR)
Co-funded by the European Union
Κατέβασε το app:
ΕΛ EN Contact
Legislation News Services - Information Perfomance Reports - Accountability Customs Chemical Laboratories International issues Greeks abroad & Non-residents IAPR
Home > Chemical Laboratories > Proficiency Testing
myAADE
Proficiency Testing
INTERLABORATORY PROFICIENCY TESTING SCHEMES
PT Provider Cert. No. 814
Among the services provided by the Chemical Metrology Service of the General Chemical State Laboratory are the development, design, co-ordination, distribution and subsequent evaluation of interlaboratory proficiency testing schemes. Since 2012, the service has been accredited by E.SY.D. (the Greek accreditation body) according to ISO/IEC 17043:2010 (Certificate number 814). The protocol employed for planning and operating proficiency testing schemes fulfills these requirements.
Please find below the distribution programme of PTs available for the 2024-2025 period: Several testing schemes are available under the SCHEMA logo (Scheme for CHEmical Measurement Assessment). In case you wish to express your interest in participating in one or more of the interlaboratory proficiency testing comparisons which are available for the 2024-2025 period, please supply the data for your organization by completing the respective fields in the registration form and return it by e-mail (to schema@gcsl.gr).

Proficiency testing

yearly programme
with 18 comparisons
in a variety of substrates

alcohol, spirit drinks, wine
liquid fuels & lubricants
solid fuels & RDF
cigarettes & e-liquids

foodstuffs
FCM (ceramics)
environmental samples

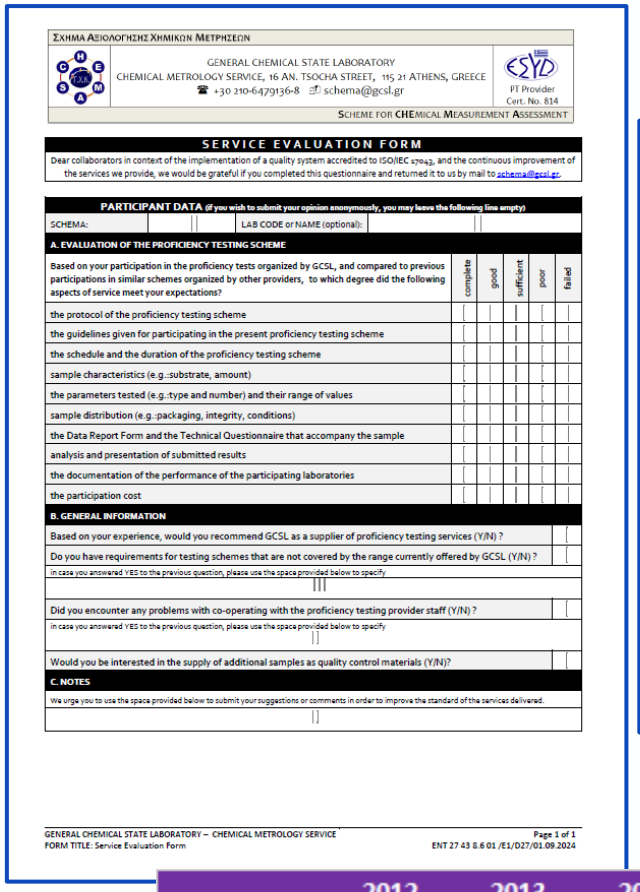
INTERLABORATORY PT SCHEMA PROGRAMME: PERIOD 2025-2026

Use this form to express your intention to participate in one or more of the available interlaboratory PT comparisons for the 2025-2026 period.
Select the PT schemes by clicking "**YES**" in the **REGISTER** box, enter the data for your organization and return the form by e-mail to: schema@gcsl.gr

CODE	SUBSTRATE	PARAMETERS	COST (€)	SAMPLE DISPATCH	RESULTS DEADLINE	REPORT RELEASE	REGISTER
12 15	spirit drink	alcoholic strength, density, volatile congeners, phthalate esters, sugars, flavoring substances (pulegone*, thujone* α- & β-)	150	11/11/2025	12/12/2025	15/1/2026	
90 15	olive oil	K232, K268 or K270, ΔK, ΔECN42, peroxide value, acidity, FAMEs, FAEEs, waxes, stigmastadienes, sterols, diols, moisture and volatile matter, water (KF)	120	18/11/2025	19/12/2025	22/1/2026	
50 24	diesel fuel	density, flash point, sulfur, water, FAME, CFPP, TAN, pour point, C, H, N, kinematic & Stabinger viscosity, cetane index, cloud point, distillation characteristics, calorific value, carbon residue 10% distillation, copper strip corrosion, lubricity (HFRR, 60°C)	150	25/11/2025	9/1/2026	5/2/2026	
24 15	waste water	pH, TDS, TSS, BOD, COD, Cr (VI), total N, total P, TOC, heavy metals (Al, As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Zn)	130	2/12/2025	9/1/2026	12/2/2026	
51 25	solid fuel (lignite)	moisture, ash, volatile matter, calorific value, content (C, H, N, S)	120	9/12/2025	16/1/2026	19/2/2026	
21 19	potable water	pH, conductivity, hardness, total N, total P, SRP, TDS, TOC, Cr (VI) anions: F^-, Cl^-, Br^-, CN^-, HCO_3^-, NO_2^-, NO_3^-, SO_4^{2-} cations: Na^+, K^+, NH_4^+, Ca^{2+}, Mg^{2+}	100	20/1/2026	20/2/2026	27/3/2026	
70 15	honey	moisture, conductivity, sugars, HMF, diastase, proline, pH, acidity, non-soluble matter, colour, pollen & honeydew* analysis	120	27/1/2026	27/2/2026	2/4/2026	
21 20	surface water	pH, conductivity, hardness, total N, total P, soluble reactive P, TDS, TOC, *anions*: F^-, Cl^-, Br^-, HCO_3^-, NO_2^-, NO_3^-, SO_4^{2-}, *cations*: Na^+, K^+, NH_4^+, Ca^{2+}, Mg^{2+}	100	17/2/2026	20/3/2026	23/4/2026	
13 16	red wine	alcoholic strength, density, pH, sugars acidity (volatile & total), SO_2 (free & total)	150	10/3/2026	17/4/2026	21/5/2026	
91 13	edible olive oil	sensory evaluation	120	17/3/2026	24/4/2026	28/5/2026	
22 16	potable water	heavy metals and other elements (Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Hg, Li, Mn, Mo, Ni, Pb, Sb, Se, Si, Sn, Sr, Tl, U, V, Zn)	100	31/3/2026	8/5/2026	11/6/2026	
50 25	distillate marine fuel oil	density, kinematic viscosity, Stabinger viscosity, sulfur, flash point, TAN/TBN, C, H, N, CFPP, carbon residue 10% distillation, cetane index, water, cloud point, pour point, lubricity (HFRR, 60°C), markers: Accutrace Plus, Tracerco FT36*, calorific value	150	12/5/2026	12/6/2026	9/7/2026	
30 17	food contact ceramics	Pb and Cd migration	180	26/5/2026	26/6/2026	30/7/2026	
15 06	beer	alcoholic strength, plato, density, pH, apparent and real extract, apparent degree of fermentation	150	9/6/2026	10/7/2026	6/8/2026	
64 02	bakery products	protein, fat, sugars, fibre, ash, moisture, energy, nutrients (Ca, K, Mg, Na, Cl, I, P), acrylamide, coumarin	120	23/6/2026	24/7/2026	27/8/2026	
52 04	lubricants engine oil	density (15 °C), flash point(PMCC & COC), TAN/TBN, kinematic & Stabinger*, viscosity 40/100°C, viscosity index, apparent viscosity by CCS, color (CU), pour point, sulfur, water, metals (Ca,Mg,Mo,Zn,P), wear metals (Al, Ag, Cr, Cu, Fe, Mg, Mo, Na, Ni, Pb, Si, Sn, Ti, B, Zn)	120	14/7/2026	21/8/2026	24/9/2026	
62 14	contaminants in food - fish	metals (Al, As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Se, Sn, Zn), histamine	120	1/9/2026	2/10/2026	5/11/2026	
60 09	dairy products cheese	milk adulteration, moisture, fat, protein, ash, sugars, energy value, calcium, salt	120	20/10/2026	20/11/2026	18/12/2026	

ΑΑΔΕ
Independent Authority for Public Revenue (IAPR)

feedback from the participating laboratories



ΣΧΗΜΑ ΑΞΙΟΛΟΓΗΣΗΣ ΧΗΜΙΚΩΝ ΜΕΤΡΗΣΕΩΝ

GENERAL CHEMICAL STATE LABORATORY
CHEMICAL METROLOGY SERVICE, 16 AN. TSOCHA STREET, 115 21 ATHENS, GREECE
☎ +30 210-6479136-8 schema@gcsl.gr

PT Provider Cert. No. 814

SCHEME FOR CHEMICAL MEASUREMENT ASSESSMENT

SERVICE EVALUATION FORM

Dear collaborators in context of the implementation of a quality system accredited to ISO/IEC 17043, and the continuous improvement of the services we provide, we would be grateful if you completed this questionnaire and returned it to us by mail to schema@gcsl.gr.

PARTICIPANT DATA (if you wish to submit your opinion anonymously, you may leave the following line empty)

SCHEMA: | LAB CODE or NAME (optional):

A. EVALUATION OF THE PROFICIENCY TESTING SCHEME

Based on your participation in the proficiency tests organized by GCSL, and compared to previous participations in similar schemes organized by other providers, to which degree did the following aspects of service meet your expectations?	complete	good	sufficient	poor	failed
the protocol of the proficiency testing scheme					
the guidelines given for participating in the present proficiency testing scheme					
the schedule and the duration of the proficiency testing scheme					
sample characteristics (e.g.:substrate, amount)					
the parameters tested (e.g.:type and number) and their range of values					
sample distribution (e.g.:packaging, integrity, conditions)					
the Data Report Form and the Technical Questionnaire that accompany the sample					
analysis and presentation of submitted results					
the documentation of the performance of the participating laboratories					
the participation cost					

B. GENERAL INFORMATION

Based on your experience, would you recommend GCSL as a supplier of proficiency testing services (Y/N) ?

Do you have requirements for testing schemes that are not covered by the range currently offered by GCSL (Y/N) ?

in case you answered YES to the previous question, please use the space provided below to specify

Did you encounter any problems with co-operating with the proficiency testing provider staff (Y/N) ?

in case you answered YES to the previous question, please use the space provided below to specify

Would you be interested in the supply of additional samples as quality control materials (Y/N)?

C. NOTES

We urge you to use the space provided below to submit your suggestions or comments in order to improve the standard of the services delivered.

GENERAL CHEMICAL STATE LABORATORY – CHEMICAL METROLOGY SERVICE
FORM TITLE: Service Evaluation Form

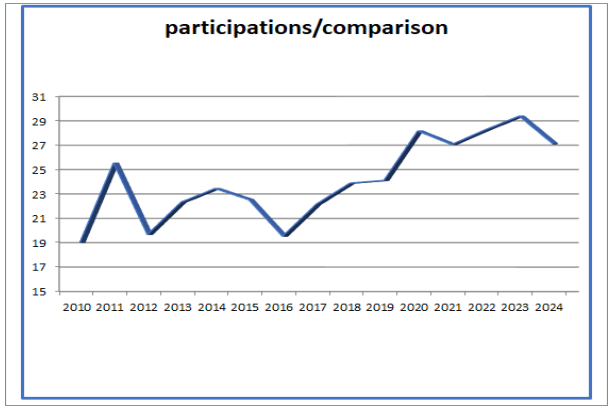
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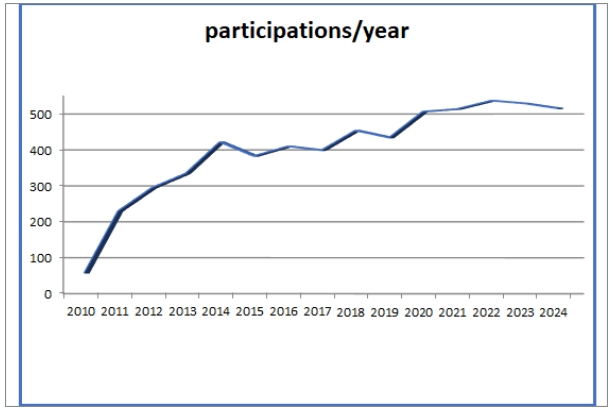
DEGREE OF CUSTOMER SATISFACTION (1=min, 5=max):	TOTAL	GCSL	STATE	PRIVATE	ABROAD	UNKNOWN
completed questionnaires	**108**	27	15	25	33	8
the protocol of the proficiency testing scheme	**4,87**	4,96	4,87	4,76	4,88	4,88
the guidelines given for participating in the present proficiency testing scheme	**4,92**	5,00	4,73	4,96	4,88	5,00
the schedule and the duration of the proficiency testing scheme	**4,86**	5,00	4,73	4,88	4,79	4,88
the frequency of the proficiency testing scheme						
sample characteristics (e.g.:substrate, amount)	**4,67**	4,93	4,47	4,60	4,61	4,63
the parameters tested (e.g.:type and number) and their range of values	**4,75**	4,96	4,67	4,60	4,67	5,00
sample distribution (e.g.:packaging, integrity, conditions)	**4,78**	4,93	4,80	4,84	4,55	5,00
timeliness of delivery against the schedule						
the Data Report Form and the Technical Questionnaire that accompany the sample	**4,81**	4,96	4,80	4,60	4,82	5,00
timeliness of issuing the report against the schedule						
results analysis and presentation in the report	**4,86**	5,00	4,73	4,84	4,79	5,00
the technical comments supplied in the report						
the documentation of the performance of the participating laboratories	**4,84**	4,93	4,80	4,80	4,79	5,00
the participation cost	**4,70**	4,91	4,64	4,58	4,61	4,88
overall score	**4,81**	4,96	4,72	4,75	4,74	4,93
Would you recommend GCSL as a supplier of proficiency testing services (Y/N)	**100**	**100**	**100**	**100**	**100**	**100**
Did you encounter any problems with co-operating with the PT provider staff (Y/N)	**0**	**0**	**0**	**0**	**0**	**0**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
non-GCSL	30	43,1	65,1	66,8	66,8	66,9	61,8	80,9	80,9	78,4	81,3	79,5	80,9
score	4,3	4,65	4,5	4,6	4,65	4,75	4,8	4,8	4,67	4,71	4,73	4,81	4,81
complaints	0	0	0	3	0	1	5	1	0	0	0	1	0

year-to date data for participations

	substrates	code	rounds		participations	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
excise tax	liquid fuels	50 XX	A	12	21,2		18	19		19	18		16	11	18	24	23	24	31	33
			B	9	13,6				14			16		10	15	12	13	13	15	14
	solid fuels	51 XX	A	13	18,8			8	13	13	19	15	15	12	23	16	33	38	18	21
			B	9	13,9					11		12	13	13	12	11	12	19	22	
	lubricating oils	52 XX		3	20,0									26		13				21
	tobacco	55 XX		2	11,5									10			13			
	spirit drinks	12 XX		14	23,8	13	24	16	22	24	23	28	21	23	24	25	29		27	23
	wine	13 XX		14	29,1		23	23	25	36	30	27	26	24	30	30	28	33	37	35
	ethanol	14 XX		2	13,0				9									17		
	beer	15 XX		5	17,2						21	13	16			18		18		
						22,8	28,3	22,4	24,8	24,4	29,0	27,1	26,8	28,4	28,1	29,4	29,4	30,2	28,4	28,5
water	water	21 XX	A	15	57,6	29	27	46	49	55	50	60	60	68	57	72	66	65	67	64
	common analytes		B	2	26,5													31		22
	toxic metals	22 XX		14	37,4		51	32	34	37	29	27	32	39	37	38	45	35	43	44
	contaminants	23 XX		4	12,0		15	9		15		9								
	waste water	24 XX		14	29,9		25	19	22	24	25	26	21	34	31	34	37	41	42	38
	microbiological	25 XX		6	21,2					21		19		22		17	22		26	
						50,9	51,3	35,9	31,3	36,0	27,2	34,4	28,3	35,9	28,8	31,8	33,1	32,0	33,6	32,6
food & feed	allergens	11 XX		1	5,0			5												
	mycotoxins	40 XX		8	10,4		11	10		10		6			11		16		12	7
	dairy	60 XX		8	15,6			14		12	13	13	18			18		15		22
	contaminants	62 XX		11	16,9				13	13	12	10	12	17	11	45	20	15	18	
	residues	63 XX		7	9,4				11	11	7	8	8		12					9
	honey	70 XX		13	29,5			17	23	24	21	24	26	24	31	34	40	42	41	37
	additives	80 XX		8	13,0			12	9		11		14	12	16			15	15	
	animal feed	81 XX		3	13,0							6					14			19
	olive oil	90 XX		13	31,3			21	24	33	29	28	25	34	32	31	32	41	39	38
	OO - sensory analysis	91 XX		11	14,5					15	16	13	13	12	13	15	15	16	16	16
	OO - contaminants	92 XX		5	13,0							14	13		9		13		16	
	FCM (κεραμικά)	30 XX		15	47,3	15	36	44	56	49	54	36	50	54	52	54	43	47	44	43
						26,3	20,4	41,7	40,6	39,6	42,6	38,5	44,9	33,7	43,1	38,9	37,5	35,6	38,0	37,1
	calibrations	100 XX		5	9,2				11		5			9				12		9
total	participations/year					57	230	295	335	422	383	410	399	454	434	507	514	537	529	515
	comparisons/year					3	9	15	15	18	17	21	18	19	18	18	19	19	18	19
	yearly change (%)						303,5	28,3	13,6	26,0	-9,2	7,0	-2,7	13,8	-4,4	16,8	1,4	4,5	-1,5	-2,6
	participations/comparison					19	26	20	22	23	23	20	22	24	24	28	27	28	29	27

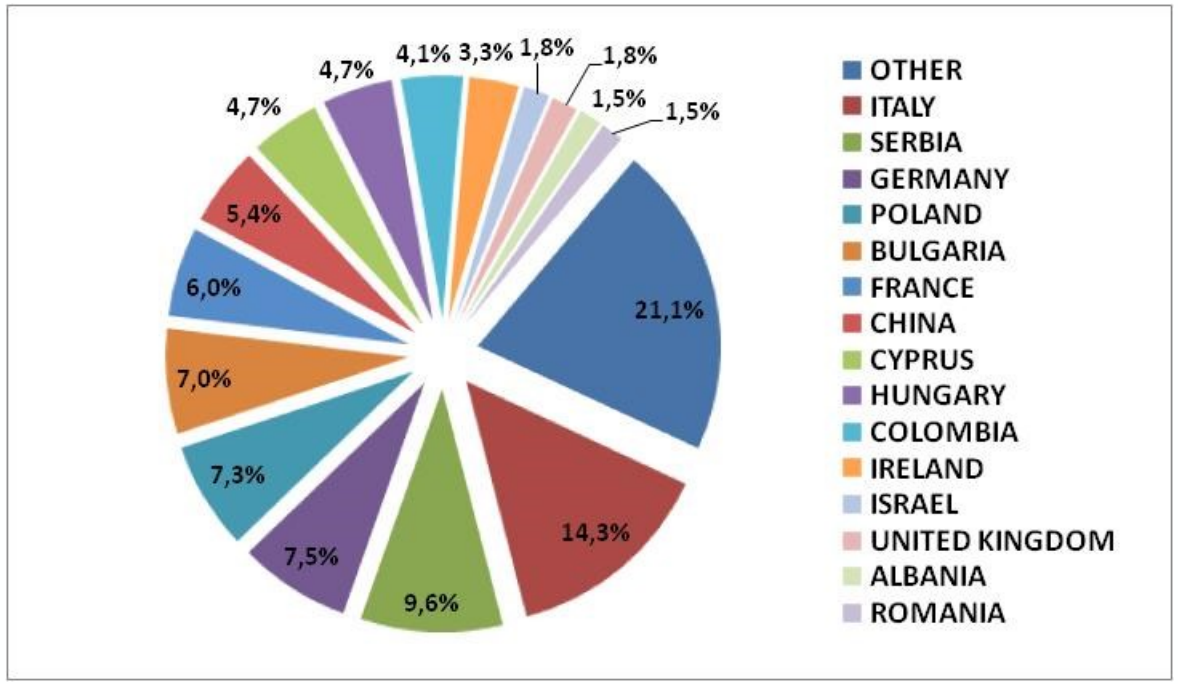




year-to-date participations

6077 participations until today
247 PT rounds have been completed

GCSL laboratories (28.9%)
public (6.9%) & private (40.4)% Greek laboratories
international participation (23.8%) from 63 countries



AUSTRIA	LITHUANIA
AZERBAIJAN	MALTA
BELARUS	MAURITIUS
BELGIUM	MEXICO
BOSNIA &	NETHERLAND
BRAZIL	NORTH MAC
CANADA	PAKISTAN
COSTA RICA	PERU
CROATIA	PHILLIPINES
CUBA	PORTUGAL
CZECH	QATAR
DENMARK	S. KOREA
ECUADOR	SLOVENIA
EGYPT	SOUTH
ESTHONIA	SPAIN
ESTONIA	SRI LANKA
FINLAND	SWITZERLAN
GEORGIA	TANZANIA
GUATEMALA	THAILAND
HONG KONG	TUNISIA
JAPAN	TURKEY
JORDAN	U.S.A.
LATVIA	UAE
LEBANON	URUGUAY

collaborative studies
EXHM MARKER 24

for the determination of the performance characteristics of the analytical methods for the measurement of fuel markers

planning, implementation and sample production Chemical Metrology Service

homogeneity & stability studies implemented by Piraeus and Central Macedonia Chemical Services



EXHM

CHEMICAL METROLOGY LABORATORY (EXHM/ΓΧΚ-ΕΙΜ)
GENERAL CHEMICAL STATE LABORATORY – HELLENIC METROLOGY INSTITUTE
CHEMICAL METROLOGY SERIVCE, 16 AN. TSOHA STREET, 115 21 ATHENS, GREEECE
TEL: +30 210 6479136-8 e-mail: metrology.gcsl@aade.gr

FINAL REPORT

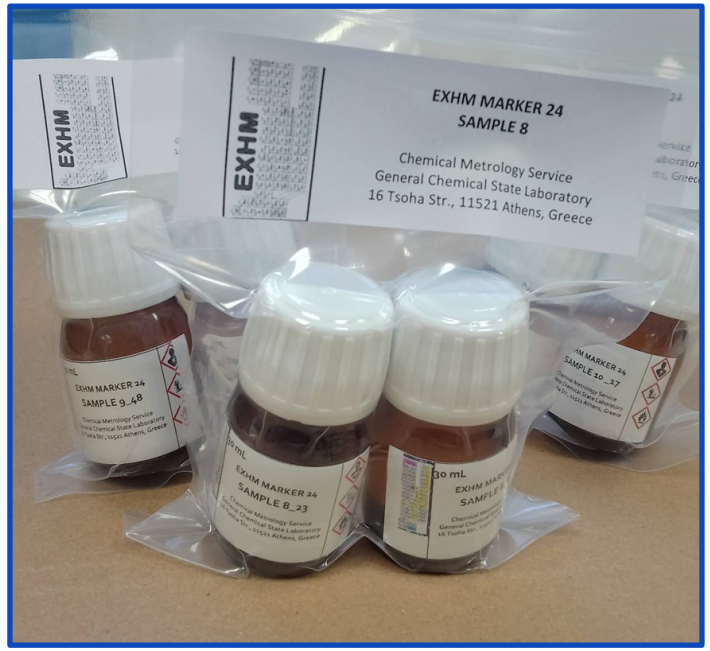
Collaborative study EXHM MARKER 24

Evaluation of the performance characteristics of the analytical methods for the determination of Greek national markers in liquid fuels



Athens, October 2024

development and certification of CRMs for the determination of the national fuel markers and the Euromarker



the General Chemical State Laboratory

is now supporting
the network of the European Customs Laboratories
regarding their needs for

collaborative studies
and
proficiency testing

for the 2025 – 2028 period



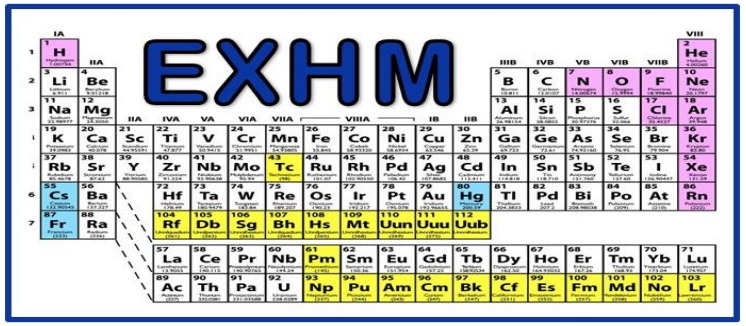


ΑΑΔΕ
Independent Authority for Public Revenue (IAPR)

description of activities



Thank you!



ΑΑΔΕ
Independent Authority for Public Revenue (IAPR)

SERVING PUBLIC INTEREST AND SOCIETY AT LARGE

EUROPEAN METROLOGY NETWORKS

CHEMSA Γ.Χ.Κ.

HRM