



Ref No. : 0303/5906

CERTIFICATE OF REFERENCE MATERIAL PRODUCER ACCREDITATION

This is to certify that

*National Institute of Metrology, Thailand
3/4-5 Moo 3, Tambon Klong Ha, Amphoe Klong Luang,
Changwat Pathumthani 12120 Thailand*

has successfully undergone assessment according to ISO 17034 : 2016
and under the Bureau of Laboratory Accreditation, Department of Science Service
for the requirements, regulations and criteria for the competence of reference material producers

Accreditation Number RMP - 0004

The scope of accreditation is as annexed hereto

Issue date : 12th June 2026

Expired date : 5th February 2029

Signature : *Chantarat Vorasapanit*
(Mrs. Chantarat Vorasapavit)

Director of Bureau of Laboratory Accreditation

Bureau of Laboratory Accreditation, Department of Science Service,
Ministry of Higher Education, Science, Research and Innovation

Scope of Reference Material Producer Accreditation

Name : National Institute of Metrology, Thailand

Address : 3/4-5 Moo 3, Tambon Klong Ha, Amphoe Klong Luang,
Changwat Pathum Thani 12120 Thailand

Accreditation Number : RMP - 0004

Accreditation standard : ISO 17034 : 2016

Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Reference material / Artifact or Matrix	Properties to be certified (Analyte/ Parameter or etc.)	Range of property value	Expanded uncertainty (Confidence level approximately 95%)	Characterization approach (s) used
Certified reference material					
1	Ethanol-water standard solution	Ethanol in aqueous matrix (Mass fraction)	0.1 mg/g to 950 mg/g	0.1 % to 5 % (Relative expanded uncertainty)	Characterization based on mass or volume of ingredients used in the preparation of the reference material
		Density	800 kg/m ³ to 997 kg/m ³ at 20 °C	0.01 % to 0.1 % (Relative expanded uncertainty)	Characterization of a non-operationally defined measurand using two or more methods of demonstrable accuracy in one or more competent laboratories

Initial Issue Date 6th February 2025

Issue Number 3

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Certified reference material					
2	Ethanol standard	Purity of ethanol (Mass fraction)	900 mg/g to 1 000 mg/g	0.6 % to 1.2 % (Relative expanded uncertainty)	Single reference measurement procedure in a single laboratory
		Density	788 kg/m ³ to 821 kg/m ³ at 20 °C	0.01 % to 0.1 % (Relative expanded uncertainty)	Characterization of a non-operationally defined measurand using two or more methods of demonstrable accuracy in one or more competent laboratories

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Certified reference material					
3	Sucrose standard solution	Concentration of dissolved solids in aqueous matrix (Brix)	5.000 % Brix to 60.000 % Brix	0.010 % Brix to 0.090 % Brix	Characterization based on mass or volume of ingredients used in the preparation of the reference material
		Refractive index	1.34026 to 1.44193 at 20 °C	0.00008 to 0.00020	Single reference measurement procedure in a single laboratory

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Certified reference material					
4	Caffeine standard solution	Caffeine in aqueous matrix (Mass concentration)	0.5 µg/mL to 200 µg/mL	3 % to 6 % (Relative expanded uncertainty)	Characterization based on mass or volume of ingredients used in the preparation of the reference material

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Signature : 
(Mrs. Chantarat Vorasapavit)

Director of Bureau of Laboratory Accreditation

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