Certified Reference Materials

Health Sciences Authority
Chemical Metrology Laboratory

Date of Issue: 29 Apr 2026

High Purity Substances

Preservatives

HRM-1002A Benzoic Acid
HRM-1018A Sorbic Acid
HRM-1003A Methyl Paraben
HRM-1004A n-Butyl Paraben
HRM-1022A n-Propyl Paraben

Artificial Sweeteners

HRM-1009A Sodium Cyclamate
HRM-1010A Saccharin
HRM-1012A Acesulfame Potassium
HRM-1015A Sucralose
HRM-1019A Aspartame

Amino Acids

HRM-1006A L-Valine
HRM-1007A L-Proline
HRM-1008A L-Leucine
HRM-1013A L-Isoleucine
HRM-1014A L-Phenylalanine

Contaminants

HRM-1026A 4-Cumylphenol
HRM-1033A Histamine Dihydrochloride

Pharmaceutical Drugs

HRM-1016A* Carbamazepine
HRM-1027A* Sibutramine Hydrochloride Monohydrate
HRM-1034A* Dexamethasone *New*

Impurity in Organic Compound

HRM-1028A Total non-volatiles in n-butyl paraben (for Thermogravimetric Analysis)

** HRM-1016A, HRM-1027A and HRM-1034A are controlled as poisons under the Poisons Act in Singapore. For purchases made outside of Singapore, an authorisation letter or permit issued by the relevant local authority where the Purchaser is based may be required.*

Food & Beverages

Food Additives

HRM-1021A Preservatives in Soy Sauce
HRM-1025A Artificial Sweeteners in Soft Drink

Organic Contaminants

HRM-1030A Fipronil and Fipronil Sulfone in Chicken Egg Powder

Inorganic Elements & Species

HRM-2003A Arsenic, Cadmium, Calcium & Lead in Mushroom Powder
HRM-2008B Cadmium, Lead, Total Arsenic & Arsenic Species in Apple Juice
HRM-2019A Inorganic Elements in Infant Formula
HRM-2020A Inorganic Elements and Arsenic Species in Cricket Powder

Cosmetics

HRM-2014A Arsenic, Cadmium, Mercury & Lead in Lipstick
HRM-2022A Arsenic, Cadmium, Lead & Mercury in Cosmetic Cream

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Certificate of Analysis

CERTIFIED REFERENCE MATERIAL
HRM-1002A

Benzoic Acid

Batch Number
STY-0035-002

Description
A unit of the certified reference material consists of 5 g of benzoic acid in a screw-capped amber vial. The mass balance approach was adopted to determine the mass fractions (mg/g) of four classes of impurities; namely: structurally-related organic compounds, volatile organic compounds, total non-volatiles and water content, present in the reference material. The mass fraction value of benzoic acid was then obtained by subtracting the mass fraction values of the impurities from 1,000.

The reference material was produced with reference to the requirements set out in ISO/IEC 17025:2017 [1], ISO 17034:2016 [2] and ISO Guide 35:2017 [3].

Certified Mass Fraction Value
A certified value is a value for which a laboratory has the highest confidence in its accuracy. The certified mass fraction value given below is based on the results obtained by the mass balance approach.

Certified Mass Fraction Value: 999.7 ± 3.2 mg/g

The final result is expressed as the certified value ± the expanded uncertainty.

The uncertainty listed with the certified value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence). It was evaluated by combining uncertainties in the measurement of mass fractions of the four classes of impurities and the homogeneity and stability of the reference material, in accordance with ISO/IEC Guide 98-3:2008 [4].

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About Our CRMs

Our CRMs are produced in accordance with the requirements of ISO 17034 and ISO 33405.
A comprehensive Certificate of Analysis (CoA) is provided with each CRM.

For more information on our CRMs and their pricings, please contact us *via* email at HSA_CML@hsa.gov.sg.

Quality Control in Clinical Chemistry

Certified Reference Materials
Chemical Metrology Laboratory, HSA
Date of Issue: 9 Oct 2025

About Our Certified Reference Materials (CRMs)

HSA CRMs serve as independent quality controls for clinical laboratories. Our CRMs are produced in accordance with the requirements of ISO 17034 and ISO Guide 35.

A comprehensive Certificate of Analysis (CoA) is provided with each CRM.

Human Serum

HRM-3005A
Cortisol

HRM-3006A
Testosterone

HRM-3007A
Creatinine • Glucose • Urea • Uric Acid

HRM-3008A
Total Cholesterol • HDL-Cholesterol • LDL-Cholesterol • Total Glycerides

HRM-2002A
Sodium • Potassium • Calcium

HRM-2005A
Calcium • Potassium • Sodium • Magnesium • Iron • Chloride

HRM-2011A
Sodium• Chloride • Copper • Selenium• Phosphorous

Human Urine

HRM-3004A
Albumin • Creatinine

HRM-3013A
Albumin

Human Blood

HRM-3003B
Glycated haemoglobin (HbA1c)

Peptide Solutions

HRM-3010A
Glycated VHLTPE Peptide Solution

HRM-3011A
VHLTPE Peptide Solution

The CRMs are stable for a long term when stored below -60°C, except for peptide solutions are to be stored at -20°C.

For more information on our CRMs and their pricings, please contact us *via* email at HSA_CML@hsa.gov.sg.