



SCOPE OF ACCREDITATION TO ISO 17034:2016

SCP SCIENCE
 21800 Clark Graham
 Baie d'Urfe, Quebec H9X 4B6
 CANADA
 David Smith Phone: 514 457 0701
 dsmith@scpscience.com

REFERENCE MATERIAL PRODUCER

Valid To: November 30, 2023

Certificate Number: 2885.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this Reference Material Producer for the production of certified reference materials and reference materials of the following categories:

Certified Reference Material ² / Artifact or Matrix	Properties Characterized ¹	Method	Measurement Technique
Pure Chemicals Aqueous Trace Metals Standards – Single Element, Stock and Custom Blends Containing the Following Elements: (Al, Sb, As, B, Ba, Be, Bi, Cd, Ca, Ce, Cs, Cr, Co, Cu, Dy, Er, Eu, Gd, Ga, Ge, Au, Hf, Ho, In, Ir, Fe, La, Pb, La, Li, Lu, Mg, Mn, Hg, Mo, Nd, Ni, Nb, Os, Pd, P, Pt, K, Pr, Re, Rh, Rb, Ru, Sm, Sc, Se, Si, Ag, Na, Sr, S, Ta, Te, Tb, Tl, Th, Tm, Sn, Ti, W, U, V, Yb, Y, Zn, Zr)	Stock single elements at (1000, 10 000 and 50 000) µg/ml Stock and custom blends from (0.001 to 50 000) µg/ml Typical uncertainty less than 1 %.	EPA 200.7 Modified EPA 200.8 Modified	ICP-AES / ICP - MS

Certified Reference Material²/ Artifact or Matrix	Properties Characterized¹	Method	Measurement Technique
<p>Metallo-organic Compounds and A6.2 Wear Metals in Oil; Single Element, Stock and Custom Blends Containing the Following Elements³:</p> <p>(Ag, Al, As, B, Ba, Be, Bi, Ca, Ce, Cd, Cl, Co, Cr, Cu, Fe, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Se, Si, Sn, Sr, Ti, V, W, Y, Zn, Zr)</p>	<p>Stock single elements at 100, 1000, 2000 and 5000 µg/g Stock and custom blends from (0.5 to 50 000) µg/g. Typical uncertainty less than 1 %</p>	EPA 200.7 Modified	ICP-AES
<p>Metallo-organic Compounds: Sulfur in Mineral Oil, Diesel, Residual Oil, Isooctane, Biodiesel, Xylene, Ethanol, Crude Oil and Premisol³</p>	<p>Stock and custom single element standards from (0 to 60 000) µg/g Typical uncertainty less than 1 %</p>	ASTM D5453	UV-F
<p>Viscosity Standards³</p>	<p>(2 to 30 000) mm²/s (Centistokes) at 100 °F (37.78 °C) - Kinematic Typical uncertainty less than 1 %</p>	ASTM D445/446	Master Viscometer
<p>Total Acid Number Standards (TAN)³</p>	<p>(0.05 to 50 mg) KOH/g Typical uncertainty 2 %</p>	ASTM D664	Potentiometric Titration
<p>Total Alkalinity</p>	<p>(25 to 10 000) ppm as CaCO₃ Typical uncertainty less than 1 %</p>	Standard Method 2320B Modified	Titration
<p>Hardness</p>	<p>(5 to 10 000) ppm as CaCO₃ Typical uncertainty less than 1 %</p>	Standard Method 2340B	Calculation
<p>Total Base Number Standards (TBN)³</p>	<p>(1 to 150) mg KOH/g Typical uncertainty 2 %</p>	D2896	Potentiometric Titration
<p>Chemical Oxygen Demand Standards (COD)</p>	<p>(50 to 15000) ppm O₂ Typical uncertainty 0.5 %</p>	EPA 410.4-1 Modified	Spectrophotometry

Certified Reference Material²/ Artifact or Matrix	Properties Characterized¹	Method	Measurement Technique
Flash Point Standards ³	(20 to 260)°C Typical uncertainty +/-4 °C	ASTM D93	Pensky-Martens Closed Cup
Acid and Base Reagents – Hydrochloric acid Sulfuric acid Nitric acid Acetic acid Citric acid Oxalic Acid Phosphoric acid Potassium Hydroxide Sodium Hydroxide Acidity Standard	(0.0015 to 10) Normal (0.02 to 18) Normal (0.1 to 10) Normal (0.1 to 5) Normal (0.03 to 1) Molar (0.1 to 1) Normal (1 to 10) % (0.1 to 1) Normal (0.0005 to 10) Normal 100 to 10 000 ppm as CaCO ₃ Typical uncertainty less than 1 %	In-house Test Method QC-MET021-ABT	Titration
Boric Acid	(1 to 5) % Typical uncertainty less than 1 %	EPA 200.7 Modified	ICP-AES

Reference Material/ Artifact or Matrix	Properties Characterized	Method
Matrix Reference Materials²:		
EnviroMAT - Contaminated Soil (Ag, Al, As, B, Ba, Be, Ca, Cd, Ce, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mo, Na, Ni, P, Pb, S, Sb, Se, Sn, Sr, Tl, U, V, Y, Zn)	(0 to 200 000) ppm	Interlaboratory Study
EnviroMAT - Sewage Sludge (Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mo, Na, Ni, P, Pb, S, Sb, Se, Sn, Sr, Tl, U, V, Y, Zn)	(0 to 50000) ppm	Interlaboratory Study
EnviroMAT – Compost Total metals: Al, As, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, S, Se, Zn Total Nitrogen, NO ₃ -N, Organic Matter, pH	pH (6 to 7.5) Organic matter 20 to 80 % Total N 1 % maximum Metals (0 to 60000) ppm	Interlaboratory Study

Reference Material/ Artifact or Matrix	Properties Characterized	Method
Matrix Reference Materials²:		
EnviroMAT - Drinking Water (Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn)	(0 to 2000) ppm	Interlaboratory Study
EnviroMAT - Ground Water (Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn)	(0 to 2000) ppm	Interlaboratory Study
EnviroMAT - Waste Water (Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn)	(0 to 5000) ppm	Interlaboratory Study
EnviroMAT - Used oil (Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Li, P, Pb, Si, Sn, Ti, V, Zn)	(0 to 10000) ppm	Interlaboratory Study
AgroMAT - Clay Soil (Metals: P, K, Ca, Mg, Na, Zn, Mn, Cu, Fe, B, S, Al) (pH, Organic matter, N-NO ₃ , Soluble Salts)	Metals: (0 to 3000) ppm pH (6 to 8) Organic matter (1 to 6) % N-NO ₃ (5 to 20) ppm Soluble salts (100 to 700) μS/cm	Interlaboratory Study
AgroMAT - Sandy Soil (Metals: P, K, Ca, Mg, Na, Zn, Mn, Cu, Fe, B, S, Al) (pH, Organic matter, N-NO ₃ , Soluble Salts)	Metals: 0-3000 ppm pH (6 to 8) Organic matter (1 to 6) % N-NO ₃ (5 to 100) ppm Soluble salts (100 to 700) μS/cm	Interlaboratory Study
Lead in Paint	(50 to 400) ppm	Interlaboratory Study
Cadmium and Lead in Paint	(50 to 400) ppm	Interlaboratory Study

Reference Material/ Artifact or Matrix	Properties Characterized	Method
Performance Evaluation Standards²:		
pE Check – Nutrients (NH ₃ as N, NO ₃ as N, o-PO ₄ , Total N, Total P)	(0.1 to 200) ppm	Interlaboratory Study
pE Check – Minerals (Conductivity, Total Hardness, TDS, Ca, K, Mg, Na, Cl-, F-, SO ₄ (2-), Alkalinity)	Minerals: (0.01 to 1000) ppm TDS: (10 to 5000) μS/cm Total Hardness: (10 to 600) ppm as CaCO ₃ Alkalinity: (50 to 5000) ppm as CaCO ₃ Conductivity: (100 to 10 000) μS/cm	Interlaboratory Study
pE Check – Solids (Suspended Solids, Dissolved Solids, Total Solids)	(1 to 4000) ppm	Interlaboratory Study
pE Check – COD (Chemical Oxygen Demand)	(10 to 10 000) ppm	Interlaboratory Study

¹ The listed uncertainty represents expanded uncertainties expressed at approximately the 95 % level of confidence, using a coverage factor of $k = 2$.

² These reference materials are intended for use as quality control materials, or other purposes that do not require metrological traceability of property values (such as calibration or value transfer).

³ These reference materials are sold under the brand name Conostan which is owned by SCP Science.



Accredited Reference Material Producer

A2LA has accredited

SCP SCIENCE

Baie d'Urfe, Quebec, CANADA

This accreditation covers the specific materials listed on the agreed upon Scope of Accreditation.

This producer meets the requirements of ISO 17034:2016 *General Requirements for the Competence of Reference Material Producers*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.



Presented this 27th day of June 2022.

A blue ink signature of a person, likely a representative of the accreditation body, written over a horizontal line.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2885.02
Valid to November 30, 2023

For reference materials to which this accreditation applies, please refer to the reference material producer's Scope of Accreditation.