



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

GALBRAITH LABORATORIES, INC.
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CHEMICAL

Valid To: July 31, 2021

Certificate Number: 2777.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests¹:

Metals Analysis:

Test Name	Test Number
Atomic Absorption Spectrometry (Li, Be, B, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, I, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Ac, Th, U)	ME-71
Determination of Mercury by Automated Cold Vapor Atomic Absorption	E80-3
Elemental Impurities – Limits	USP <232>
Elemental Impurities – Procedures	USP <233>
Inductively Coupled Plasma – Atomic Emission Spectrometry (Li, Be, B, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, I, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Ac, Th, U)	EPA SW-846 Method 6010B
Inductively Coupled Plasma – Atomic Emission Spectrometry (Li, Be, B, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, I, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Ac, Th, U)	ME-70

Test Name	Test Number
Inductively Coupled Plasma – Mass Spectrometry (Li, Be, B, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, I, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Ac, Th, U)	EPA SW-846 Method 6020
Semi-Quantitative Metals Screen by Mass Spectrometry (Li, Be, B, Na, Mg, Al, P, K, Ca, Sc, Ti, V, Cr, Mn, Ni, Co, Cu, Zn, Ga, As, Se, Rb, Sr, Y, Zr, Nb, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, I, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Hg, Tl, Pb, Bi, Th, U)	ME-31
Standard Test Method for Elements in Digestates by Inductively Coupled Plasma Mass Spectroscopy (Li, Be, B, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, I, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Ac, Th, U)	ME-30

Chromatographic Analysis:

Test Name	Test Number
Analysis of Residual Solvents by Gas Chromatography Using Direct Injection and Flame Ionization Detection	GC-100D
High Performance Liquid Chromatography (HPLC) Customer Analysis Method	LC-100
Residual Solvents by Headspace Gas Chromatography	GC-100H



Chemical Analysis:

Test Name	Test Number
Determination of Anions and Organic Acids by Suppressed Ion Chromatography	ME-4C
Determination of Anions by Suppressed Ion Chromatography	ME-4A
Determination of Fluoride Ion by Ion-Selective Electrode	E9-1
Determination of Iodine by Ion-Selective Electrode	E53-4
Determination of Nitrogen by the Kjeldahl Method	E7-1
Determination of Total Ash Content by Muffle Furnace	G-45A
Determination of Total Fluorine by Oxygen Flask Combustion and Ion-Selective Electrode	E9-3
Determination of Total Halogens or Total Halides by Potentiometric Titration	E17-1
Determination of Water	USP <921>
Determination of Water by Coulometric Titration (Karl Fischer)	S-300
Loss on Drying	S-200
Nitrogen by Ion-Selective Electrode	E7-6
Thermogravimetric Analysis/Differential Scanning Calorimetry	TGA-100
Volumetric Karl Fischer Water Determination Using the Mettler DL35 Titrator	S-301

Combustion Analysis:

Test Name	Test Number
Carbon, Hydrogen and Nitrogen Determination Using the LECO CHN 628	ME-15
Carbon, Hydrogen, and Nitrogen Determination Using the PerkinElmer2400 Series II CHNS/O Analyzer	ME-14
Determination of Inorganic Carbon	E6-5
Determination of Oxygen Content	E8-4
Determination of Total Halogens and Total Halides by Microcoulometry	ME-13



Test Name	Test Number
Determination of Total Organic Carbon	EPA Method 415.1
Sulfur Determinations Using the LECO SC-632 Carbon/Sulfur Determinator	E16-3
Total Organic Carbon	USP <643>
Total Organic Carbon	E6-8

Consumer Product Safety Testing:

Test Name	Test Number
16 CFR 1303, CPSC Standard Operating Procedure for Determining Lead (Pb) in Paint	G-52/ME70
16 CFR Part 1303, Standard Operating Procedure for Determining Total Lead in Children's Metal Products (Including Children's Metal Jewelry) 12/4/2008	CPSC-CH-E1001-08 G-52/ME-70
16 CFR Part 1303, Standard Operating Procedure for Determining Total Lead in Non-metal Children's Products	CPSC-CH-E1002-08 ME-70
16 CFR Part 1303, Standard Operating Procedure for Determining Lead (Pb) in Paint and Other Similar Surface Coatings	CPSC-CH-E1003-09 ME-70

Cannabis Testing:

Test Name	Test Number
<u>Analysis of Pesticides and Mycotoxins by LC-MS-MS</u>	LCMS-100
Aldicarb	
Azoxystrobin	
Bifenazate	
Bifenthrin	
Boscalid	
Captan	
Carbaryl	
Carbofuran	
Clofentezine	
Coumaphos	
Cyfluthrin	
Cypermethrin	
Daminozide	
Diazinon	
Dichlorvos (DDVP)	
Dimethoate	

Test Name	Test Number
Fenhexamid	
Fenpyroximate	
Fenoxycarb	
Fipronil	
Flonicamid	
Fludioxonil	
Hexythiazox	
Imazalil	
Methiocarb	
Methomyl	
Methyl parathion	
Mevinphos	
Myclobutanil	
Naled	
Oxamyl	
Pacloutrazol	
Prallethrin	
Propiconazole	
Propoxur	
Pyrethrins	
Pyridaben	
Spinetoram	
Spinosads	
Spiromesifen ⁴	
Thiamethoxam	
Trifloxystrobin	
Ochratoxin A	
Aflatoxins	
<u>Determination of Cannabinoids by HPLC</u>	
Delta-9 Tetrahydrocannabinol (Δ -9 THC)	
Delta-9 Tetrahydrocannabinolic Acid A (THCA-A)	
Cannabidiol (CBD)	
Cannabidiolic Acid (CBDA)	
Cannabinol (CBN)	
Cannabinolic Acid (CBNA)	
Cannabigerol (CBG)	
Cannabigerolic Acid (CBGA)	
Cannabidivarin (CBDV)	
Cannabidivarinic Acid (CBDVA)	
Cannabicyclol (CBL)	
Cannabichromene (CBC)	
Tetrahydrocannabinol (Δ -8 THC)	
Delta-9 Tetrahydrocannibivarin (THCV)	
<u>Determination of Elemental Impurities by Microwave Assisted Digestion and Inductively Coupled Plasma Atomic Emission Spectrometry</u>	
	LC-101
	G-52/ME-30

Test Name	Test Number
Arsenic	
Cadmium	
Lead	
Mercury	
<u>Determination of Residual Solvents in Cannabis and Cannabis Products</u>	GC-101
Acetone	
Acetonitrile (ACN)	
Benzene	
Chloroform	
Cyclohexane	
1,2-Dichloroethane	
Dichloromethane (Methylene chloride)	
Ethanol (EtOH)	
Ethyl acetate (EtOAc)	
Ethyl ether (Diethyl ether)	
n-Heptane	
n-Hexane	
Isopropanol (IPA or 2-propanol)	
Methanol (MeOH)	
n-Pentane	
Trichloroethene (Trichloroethylene)	
Toluene	
Xylenes (sum of m-, p-, and o-)	

¹ The Consumer Product Safety Improvement Act (CPSIA) requires that every children's product subject to a federal consumer product safety requirement be tested by a Consumer Product Safety Commission (CPSC) accepted laboratory for compliance with the applicable federal children's product safety requirements. Accreditation by A2LA does not infer acceptance by the CPSC. Please verify this organization's acceptance status by using the CPSC's searchable database, located at <http://www.cpsc.gov/cgi-bin/labsearch/>.



Accredited Laboratory

A2LA has accredited

GALBRAITH LABORATORIES, INC.

Knoxville, TN

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 16th day of August 2019.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2777.01
Valid to July 31, 2021
Revised on August 19, 2019

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.