


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>UKAS TESTING</p> <p>10636</p> <p>Accredited to ISO/IEC 17025: 2017</p>	<p>Broughton Life Sciences Limited</p> <p>Issue No: 003 Issue date: 07 October 2021</p>	
	<p>Oak Tree House West Craven Drive Earby Lancashire BB18 6JZ</p>	<p>Contact: Chris Voisey Tel: +44 (0) 1282 570524 E-Mail: cvoisey@broughton-group.com Website: www.broughton-group.com</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>SMOKELESS NICOTINE DELIVERY PRODUCTS (ecigarettes, electronic cigarettes, vaping devices)</p> <p>Electronic cigarette liquid and Smokeless nicotine delivery vapour / aerosol</p>	<p><u>Chemical Tests</u></p> <p>Nicotine Menthol Glycerol Propylene Glycol Diethylene Glycol Ethylene Glycol Glycidol</p> <p>4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) N'-Nitrosornicotine (NNN)</p> <p>1,3-Butadiene Isoprene Acrylonitrile Benzene Propylene Oxide Toluene</p> <p>Nicotine n-oxide Cotinine Nornicotine Anatabine Myosmine Anabasine beta-Nicotyrine</p>	<p>Documented In-House Methods based on industry standard methods (solvent extraction and aerosol collection only based on ISO 20768:2018)</p> <p>NTM0001 - based on ISO 20768:2018 and gas chromatography flame ionisation detection (GC-FID)</p> <p>NTM0008 -based on ISO 20768:2018 using liquid chromatography tandem mass spectrometry (LC-MS/MS)</p> <p>NTM0012 - based on ISO 20768:2018 and gas chromatography-mass spectrometry (GC-MS)</p> <p>NTM0016 - based on ISO 20768:2018 using liquid chromatography mass spectrometry</p>



10636
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Broughton Life Sciences Limited
Issue No: 003 Issue date: 07 October 2021

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SMOKELESS NICOTINE DELIVERY PRODUCTS (ecigarettes, electronic cigarettes, vaping devices)	<u>Chemical Tests</u>	Documented In-House Methods based on industry standard methods (solvent extraction and aerosol collection only based on ISO 20768:2018)
	Acetaldehyde Formaldehyde Crotonaldehyde Acrolein Propionaldehyde Butyraldehyde Methyl Ethyl Ketone (2-Butanone)	NTM0025a - based on ISO 20768:2018 and liquid chromatography-mass spectrometry (LC-MS).
	Diacetyl Acetyl Propionyl	NTM0025b - based on ISO 20768:2018 and liquid chromatography-mass spectrometry (LC-MS)
	Furfural	NTM0025c - based on ISO 20768:2018 and liquid chromatography-mass spectrometry (LC-MS)
	Benzaldehyde Cinnamaldehyde Vanillin	NTM0025d - based on ISO 20768:2018 and liquid chromatography tandem mass spectrometry (LC-MS/MS)
	pH	NTM0027 - based on ISO 20768:2018 and European Pharmacopoeia monograph, Ph. Eur. 2.2.3 Potentiometric Determination of pH
1-Butanol Benzyl Acetate Ethyl Acetate Ethyl Acetoacetate Isoamyl Acetate Isobutyl Acetate Methyl Acetate	NTM0037 - based on ISO 20768:2018 and headspace gas chromatography-mass spectrometry (GC-MS)	



10636
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Broughton Life Sciences Limited
Issue No: 003 Issue date: 07 October 2021

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SMOKELESS NICOTINE DELIVERY PRODUCTS (ecigarettes, electronic cigarettes, vaping devices)	<u>Chemical Tests</u>	Documented In-House Methods based on industry standard methods (solvent extraction and aerosol collection only based on ISO 20768:2018)
	Propionic acid	1. NTM0038 - based on ISO 20768:2018 and ion chromatography (IC) 2. NTM0057 - based on ISO 20768:2018 and liquid chromatography-ultraviolet (HPLC-UV)
	Benzoic acid	NTM0063 by Ion Chromatography
	Arsenic Cadmium Chromium Copper Nickel Lead Tin Zinc Iron Silver Aluminium Vanadium Cobalt Molybdenum Antimony Mercury	NTM0004 - based on ISO 20768:2018 and inductively coupled plasma mass spectrometry (ICP-MS). NTM0065 - based on ISO 20768:2018 and inductively coupled plasma mass spectrometry (ICP-MS).
Smokeless nicotine delivery vapour / aerosol	Nicotine	TM1111 - based on ISO20768:2018 and liquid chromatography-ultraviolet (HPLC-UV)
Electronic cigarette liquid	Nicotine	TM1116 - Determination of Nicotine assay in E-Liquid by liquid chromatography-ultraviolet (HPLC-UV)



10636
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Broughton Life Sciences Limited
Issue No: 003 Issue date: 07 October 2021

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SMOKELESS NICOTINE DELIVERY PRODUCTS (ecigarettes, electronic cigarettes, vaping devices)	Physical Tests	Documented In-House Methods based on industry standard methods (solvent extraction and aerosol collection only based on ISO 20768:2018)
Electronic cigarette liquid	Density Relative Density Specific Gravity	NTM0019 - at 20°C based on British Pharmacopoeia Monograph, Appendix V G
	Viscosity	NTM0023 at 25°C by Rotational Rheometer
	Mass loss during storage	NTM0041 - Determination of Mass Loss During Storage of Samples using analytical balances
	Boiling point	NTM0051 - Determination of Boiling Point of E-Liquids using Mettler Toledo MP80 Instrument
	Water content	TM1051 - Determination of Water Content by Karl Fischer. In-house method based on European Pharmacopoeia Ph. Eur. 2.5.12/British Pharmacopoeia Monograph Water Content by Karl Fischer titration
	Density	TM1145 – based on British Pharmacopoeia Monograph, Appendix V G at 20°C by a Density Meter



10636
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Broughton Life Sciences Limited
Issue No: 003 Issue date: 07 October 2021

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SMOKELESS NICOTINE DELIVERY PRODUCTS (ecigarettes, electronic cigarettes, vaping devices) Smokeless nicotine delivery vapour/aerosol	Chemical Tests Refractive Index Particle size	Documented In-House Methods based on industry standard methods (solvent extraction and aerosol collection only based on ISO 20768:2018) TM1146 - Determination of Refractive Index at 20°C by optical refractometry. In-house method based on European Pharmacopoeia monograph, Ph. Eur. 2.2.6 Determination of Refractive Index. TM1309 - Particle Size Determination based on European Pharmacopoeia Ph. Eur. 2.9.31/British Pharmacopoeia Monograph Laser Diffraction.
END		