


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

|   |  |   |
|---|--|---|
|  <p>Accredited to<br/>ISO/IEC 17025:2017</p> | <b>Element Materials Technology Analytical Services Limited</b>  |   |
|   | <b>Issue No: 031    Issue date: 23 May 2024</b>  |   |
|   | <b>Waterside Court</b><br><b>1 Crewe Road</b><br><b>Wythenshawe</b><br><b>Manchester</b><br><b>M23 9BE</b> | <b>Contact: Amber Simm</b><br><b>Tel: +44 (0)161-286 7889</b><br><b>E-Mail: quality.manchester@element.com</b><br><b>Website: www.element.com</b> |
| <b>Testing performed at the above address only</b>  |  |   |

### DETAIL OF ACCREDITATION

| Materials/Products tested  | Type of test/Properties measured/Range of measurement   | Standard specifications/ Equipment/Techniques used  |
|--|---|---|
| <b>SMOKELESS NICOTINE DELIVERY PRODUCTS</b><br><br>(e-cigarettes, electronic cigarettes, vaping devices), smokeless nicotine delivery vapour or aerosol<br><br>Electronic cigarette liquid | <u>Chemical Tests</u><br><br>Nicotine<br>Propylene glycol<br>Glycerol<br>Menthol<br><br><b>Tobacco Specific Nitrosamines</b><br>N-nitrosoanatabine (NAT)<br>N-nitrosoanabasine (NAB)<br>N-nitrosonornicotine (NNN)<br>Nicotine-derived nitrosamine ketone (NNK)<br><br><b>Protonated and Unprotonated Nicotine Ratio</b><br>Nicotine/Nicotine+<br><br><b>Impurities</b><br>Diethylene Glycol<br>Ethylene Glycol<br>Glycidol | MAN-TM-0011 based on CORESTA Method No. 81 and 84 by 450e vaping machine and gas chromatography with flame ionisation detection (GC-FID)<br><br>MAN-TM-0011 based on CORESTA method 84 using gas chromatography with flame ionisation detection (GC-FID)<br><br>Documented in house method MAN-TM-0007 using Liquid Chromatography with tandem Mass Spectrometry (LC-MS-MS)<br><br>Documented in house method MAN-TM-0004 using gas chromatography with flame ionisation detection (GC-FID)<br><br>Documented in house method MAN-TM-0008 using Direct Injection Gas Chromatography with Mass Spectrometry (DI-GC-MS) |



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| <p>SMOKELESS NICOTINE DELIVERY PRODUCTS</p> <p>Electronic cigarette liquid (cont'd)</p> | <p><u>Chemical Tests</u> (cont'd)</p> <p><b>Water Content</b></p> <p><b>Saturated Monocarboxyls</b><br/>Acetaldehyde<br/>Butyraldehyde<br/>Formaldehyde</p> <p><b>Volatile Organic Compounds and Specific Flavour Compounds in Methanol</b><br/>1-Butanol<br/>Benzene<br/>Diacetyl<br/>Acrylonitrile<br/>Isoamyl Acetate<br/>Isobutyl Acetate<br/>Methyl Acetate<br/>2,3-Pentanedione<br/>Toluene</p> <p><b>Volatile Organic Compounds and Specific Flavour Compounds in Acetone</b><br/>Acrolein<br/>Benzaldehyde<br/>Benzyl Acetate<br/>Cinnamaldehyde<br/>Crotonaldehyde<br/>Ethyl Acetate<br/>Ethyl Acetoacetate<br/>Ethyl Vanillin<br/>Furfural<br/>Methyl Vanillin<br/>Propionic Acid<br/>Propylene Oxide<br/>Vanillin</p> | <p>Documented in house method MAN-TM-0009 using gas chromatography with thermal conductivity detection (GC-TCD)</p> <p>Documented in house method MAN-TM-0003 using Liquid Chromatography with tandem Mass Spectrometry (LC-MS-MS)</p> <p>Documented in house method MAN-TM-0001 using Direct Injection Gas Chromatography with Mass Spectrometry (DI-GC-MS)</p> <p>Documented in house method MAN-TM-0002 using Direct Injection Gas Chromatography with Mass Spectrometry (DI-GC-MS)</p> |



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| <p>SMOKELESS NICOTINE DELIVERY PRODUCTS</p> <p>Electronic cigarette liquid (cont'd)</p> | <p><u>Chemical Tests</u> (cont'd)</p> <p><b>Elemental Impurities</b></p> <p>Antimony<br/>Arsenic<br/>Barium<br/>Cadmium<br/>Chromium<br/>Cobalt<br/>Copper<br/>Gold<br/>Iridium<br/>Lead<br/>Lithium<br/>Mercury<br/>Molybdenum<br/>Nickel<br/>Osmium<br/>Palladium<br/>Rhodium<br/>Ruthenium<br/>Platinum<br/>Selenium<br/>Silicon<br/>Silver<br/>Tin<br/>Titanium<br/>Thallium<br/>Vanadium</p> | <p>Documented in house method MAN-TM-0005 using inductively coupled plasma mass spectrometry (ICP-MS)</p> |



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| <p><b>SMOKELESS NICOTINE DELIVERY PRODUCTS</b></p> <p>Electronic Nicotine Delivery Systems (Electronic Cigarette Liquids and ENDS Emissions)</p> | <p><b>Chemical Tests (cont'd)</b></p> <p><b>Tobacco Specific Nitrosamines</b><br/>N-nitrosoanatabine (NAT)<br/>N-nitrosoanabasine (NAB)<br/>N-nitrosonornicotine (NNN)<br/>Nicotine-derived nitrosamine ketone (NNK)</p> <p><b>Protonated and Unprotonated Nicotine Ratio</b><br/>Nicotine/Nicotine+</p> <p><b>Impurities</b><br/>Diethylene Glycol<br/>Ethylene Glycol<br/>Glycidol</p> <p><b>Saturated Monocarbonyls</b><br/>Acetaldehyde<br/>Butyraldehyde<br/>Formaldehyde</p> <p><b>Volatile Organic Compounds and Specific Flavour Compounds</b><br/>Benzaldehyde<br/>Benzyl Acetate<br/>Cinnamaldehyde<br/>Ethyl Acetoacetate<br/>Ethyl Vanillin<br/>Furfural<br/>Methyl Vanillin<br/>Propionic Acid<br/>Vanillin</p> | <p>Documented In-House Method<br/>MAN-TM-0007 by LC-MS/MS</p> <p>Documented In-House Method<br/>MAN-TM-0004 by GC-FID</p> <p>Documented In-House Method<br/>MAN-TM-0008 by DI-GC-MS</p> <p>Documented In-House Method<br/>MAN-TM-0003 by LC-MS/MS</p> <p>Documented In-House Method<br/>MAN-TM-0002 by DI-GC-MS</p> |



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| <p><b>SMOKELESS NICOTINE DELIVERY PRODUCTS</b></p> <p>Electronic Nicotine Delivery Systems (Electronic Cigarette Liquids and ENDS Emissions) (Cont'd)</p> | <p><b>Chemical Tests (cont'd)</b></p> <p><b>Elemental Impurities</b></p> <p>Antimony<br/>Arsenic<br/>Barium<br/>Cadmium<br/>Chromium<br/>Cobalt<br/>Copper<br/>Gold<br/>Iridium<br/>Lead<br/>Lithium<br/>Mercury<br/>Molybdenum<br/>Nickel<br/>Osmium<br/>Palladium<br/>Platinum<br/>Rhodium<br/>Rubidium<br/>Selenium<br/>Silicon<br/>Silver<br/>Thallium<br/>Tin<br/>Titanium<br/>Vanadium</p> | <p>Documented in house method MAN-TM-0005 using inductively coupled plasma mass spectrometry (ICP-MS)</p> |
| <p>END</p>  |  |   |