

SCHEDULE OF ACCREDITATION

ANGOSTURA LABORATORY LIMITED

Testing Laboratory No.: LAS-002

is an accredited Laboratory which fulfils the requirements of *ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories*, and has demonstrated competence to carry out tests for:

CHEMICAL TESTING

as specified in and at locations identified in this schedule. This document may be revised from time to time based on accreditation requirements. The most current issue is available on TTLABS website: <https://gottbs.com/ttlabs>

While this schedule remains valid, the Accredited Laboratory named above is authorized to issue TTLABS-endorsed certificates.



Karlene Carolyn Lewis
Manager, TTLABS

"Recognised as the official national laboratory accrediting body by the Ministry of Trade and Industry of the Republic of Trinidad and Tobago."

Initial Accreditation date: 1st November 2007

This schedule was issued on: 13th December 2022

This schedule expires on: 12th June 2023

"This accreditation demonstrates that the laboratory fulfils both the technical competence and management system requirements for it to consistently deliver technically valid test results. The language of the management system requirements in ISO/IEC 17025 is written to be relevant to laboratory operations and are generally in accordance with the principles of ISO 9001. (Refer to joint ISO-ILAC-IAF Communiqué dated April 2017)"

Testing Laboratory Number: **LAS-002**

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| <p><u>Permanent Address of Laboratory:</u> Angostura Limited Corner Eastern Main Road & Trinity Avenue Laventille Trinidad and Tobago. W.I.</p> <p><u>Postal Address</u> Corner Eastern Main Road & Trinity Avenue Laventille Trinidad and Tobago. W.I</p> <p>Tel : 868-623-1841 Fax : 868-623-1847/624-8531 e-mail: cghomer@angostura.com</p> | <p><u>Management Signatories:</u> Carol Homer-Caesar</p> <p><u>Technical Signatories:</u> William Jordan</p> <p><u>Nominated Representative:</u> Carol Homer-Caesar</p> <p><u>Certificate of Accreditation</u> Issue No. : 09</p> |
|--|---|

| Materials/Products Tested | Types of Tests/Properties Measured, Range of Measurement | Standard Specifications, Equipment/Techniques Used |
|---|--|---|
| <i>Instruction: add rows as needed below and enter the <u>FIELD</u> where necessary (e.g. Chemical, Microbiological, Mechanical).</i> | | |
| <p><u>CHEMICAL</u> Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages</p> | <p>1) Determination of ethanol content (%) by Macro Distillation method using OIML system</p> | <p>Reference – AOAC 18th Ed. 26.1.08 & 26.2.04 (Alcohol by volume in Distilled Liquors – Hydrometer method) Method No. LA-TM-DIST-01</p> |
| <p>Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages</p> | <p>2) Determination of ethanol content (%) by Micro Distillation using Dee Distillation and Density Meter Analyser</p> | <p>Reference – DMA 4500/5000 Manual; Dee Distillation – Instruction Manual 60.50.131 5th issue Method No. LA-TM-DEE-01</p> <p>Reference – Density Meter Excellence D4/D5/D6 Manual & Density Guide Method No. LA-TM-DMA-01</p> |
| <p>Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages</p> | <p>3) Determination of Total Solids by Evaporation method Units: g/100 mL, g/L</p> | <p>Reference – AOAC 20th Ed. 26.1.13 Method No. LA-TM-TS-01</p> |
| <p>Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages</p> | <p>4) Determination of Total Acids by Titrimetric method Units: mg/100 mL</p> | <p>Reference – AOAC 20th Ed. Official method 945.08 (Part A) Method No. LA-TM-TITR-03</p> |

| Materials/Products Tested | Types of Tests/Properties Measured, Range of Measurement | Standard Specifications, Equipment/Techniques Used |
|--|---|--|
| Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages | 5) Determination of Fixed Acids by Titrimetric method Units: mg/100 mL | Reference – AOAC 20th Ed. Official Method 945.08 (Part B) Method No. LA-TM-TITR-04 |
| Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages | 6) Determination of pH | Reference – AOAC 20th Ed. Method 973.41 (Equipment Manual) Method No. LA-TM-pH-01ML |
| Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages | 7) Determination of pH | Reference – AOAC 18th Ed. 973.41 Method No. LA-TM-pH-03DL |
| Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages | 8) Determination of Acetaldehyde, Methanol, Acetone, Methyl acetate, Ethyl format, Ethyl acetate, n-Propanol, s-Butanol, iso-Butanol, n-Butanol, Acetal, active Amyl alcohol, iso-Amyl alcohol, n-Amyl alcohol and Furfuraldehyde by Gas Chromatography Units: mg/100 mL Range: 0.6 – 5,000 mg/100 mL Esters (Methyl acetate, Ethyl formate and Ethyl acetate) Range: 0.2 – 18,500 mg/100 mL Fusel oils (High boiling point alcohols) | All 15 components are analysed as one run by Gas Chromatography using Flame Ionisation detection. Ref: Bacardi Method– BAP #275F – Agilent Technologies 6890N Operator's Manual Method No. LA-TM-CON-02ML |
| Metal Ions in Solution – alcoholic solution (wine and distilled spirits) by inductively coupled plasma-atomic emission spectroscopy (ICP-OES Spectroscopy) | 9) Determination of: <ul style="list-style-type: none"> • Calcium: 0.010 – 6.000 ppm • Magnesium: 0.003 – 6.000 ppm • Potassium: 0.004 – 6.000 ppm • Copper: 0.003 – 6.000 ppm • Iron: 0.026 – 6.000 ppm • Sodium: 0.024 – 6.000 ppm | Reference - Perkin Elmer Optima 2100 DV Online Operator's Manual Method No. LA-TM-IONS-02ML |
| Alcoholic beverages – Rum, bitters, flavoured alcoholic products, wines, carbonated beverages | 10) Determination of ethanol content (%) by AlcoLyzer (Near Infra-Red technology) | Reference – Instruction Manual AlcoLyzer M Beer/Spirits/Wine/Sake Method No. LA-TM-LYZR-01 |
| Water, Wastewater | 11) Determination of Chemical Oxygen Demand Range: 25 -1000mg/L | Reference - HACH Company TNTplus Mercury Free, Chemical Oxygen Demand Method No. LA-TM-COD-01ENV |

| Materials/Products Tested | Types of Tests/Properties Measured, Range of Measurement | Standard Specifications, Equipment/Techniques Used |
|---------------------------|---|--|
| Water, Wastewater | 12) Determination of Ammoniacal Nitrogen in Liquid Effluent Range: 5 -100 mg/L | Reference - Standard Method for the Examination of Water and Wastewater 23rd Ed. 4500-NH3 B C Method No. LA-TM-TITR-01ENV |
| Water, Wastewater | 13) Determination of pH (Modified In-house Method) | Reference: Standard Method for the Examination of Water and Wastewater 23rd Ed. 4500-H+ B. (Electrometric method); YSI Professional Plus User Manual Method No: LA-TM-pH-01ENV |

END OF SCHEDULE OF ACCREDITATION