

CERTIFICATE OF ACCREDITATION

In terms of section 22(2)(b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-

AFRICA TECHNICAL CENTRE
Co. reg no: 1986/003669/07

Facility Accreditation Number: **T0486**

is a South African National Accreditation System accredited Testing laboratory
provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying schedule of accreditation,
Annexure "A", bearing the above accreditation number for

PERFORMANCE/PHYSICAL/CHEMICAL ANALYSIS

The facility is accredited in accordance with the recognised International Standard

ISO/IEC 17025:2005

*The accreditation demonstrates technical competency for a defined scope and the operation of a
laboratory quality management system*

While this certificate remains valid, the Accredited Facility named above is authorised to
use the relevant SANAS accreditation symbol to issue facility reports and/or certificates

Mr R Josias
Chief Executive Officer

Effective Date: 18 December 2009
Certificate Expires: 17 December 2014

ANNEXURE A

SCHEDULE OF ACCREDITATION

Testing Laboratory Number: T0486

<p><u>Permanent Address of Laboratory:</u> Africa Technical Centre Gazelle Close Corporate Park South Old Pretoria Road Randjiesfontein Midrand 1683</p> <p><u>Postal Address:</u> P.O Box 50198 Randjiesfontein Midrand 1683</p> <p>Tel : (011) 644- 0962/ 0922/ 0742 Fax : (011) 314- 8636 E-mail : plutchman@afr.ko.com</p>	<p><u>Technical Signatories</u></p> <p>: Ms N Bhengu (WI004, WI005, WI006, WI008 , WI009, WI012, WI014, WI015, WI045) : Mrs C Govender (WI012,WI033, WI034, WI035) : Mr N Naidu (WI020 - WI025, WI026) : Mrs R Dayaljee (WI007, WI047, WI049, WI050, WI0151, WI053, WI056) : Mr S Phakathi (WI010, WI032, WI038, WI047, WI055) : Mrs A Kalu (WI013, WI018, WI029, WI031, WI072) : Miss EM Malema (WI042, WI062, WI068) : Miss BPM Seemane (WI043, WI049,WI056, WI059, WI060) : Mrs B Diphare (WI016) : Mrs NM Raseroka (WI007, WI050, WI051, WI053) : Ms D Adams (WI026)</p> <p><u>Nominated Representative</u> : Mrs P. Lutchman</p> <p><u>Management Representative</u> : Mr I Isaacs</p> <p>Issue No : 01 Date of issue : 23 July 2010 Expiry date : 17 December 2014</p>
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Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/ Techniques Used
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CHEMICAL, PHYSICAL AND PERFORMANCE

<p>1. FOOD AND FOOD PRODUCTS:</p> <p>1.1 NON ALCOHOLIC BEVERAGES</p>	<p>Determination of the Brix of Beverage</p> <p>Net Content</p> <p>Decarbonation of beverages</p> <p>Determination of Caffeine, Sweeteners and Preservatives</p> <p>Determination of Gas Volume in bottled and canned beverages</p> <p>Determination of Total titratable acidity as Citric acid</p> <p>Cations in Beverages</p> <p>Determination of Iron</p> <p>Removal Torque</p> <p>Determination of Metals in Beverage (Ag, As, Be, B, Al, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Mo, Cd, Ba, Tl, Pb, Th, U, Se, Sb)</p>	<p>In – House Methods</p> <p>WI 004 (Densitometry)</p> <p>WI 005 (Gravimetric Analyses)</p> <p>WI 006 (Blender method)</p> <p>WI 007 (UPLC PDA)</p> <p>WI 008 (Gas Volume Analyser)</p> <p>WI 009 (Titrimetry)</p> <p>WI 010 (IC)</p> <p>WI 012 (Atomic Absorption)</p> <p>WI 014 (Automatic Torque Meter)</p> <p>WI 015 (Manual Torque Meter)</p> <p>WI 035 (ICPMS)</p>
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1.1 NON ALCOHOLIC BEVERAGES	Special Assay of Phosphoric Acid in Beverages	WI 045 (Spectrophotometry-Automated)
	Determination of Sodium Cyclamate	WI 047 (IC)
	Trace analysis of Caffeine	WI 049 (UPLC MS MS)
	Determination of Vitamin C (Ascorbic acid)	WI 050 (UPLC PDA)
	Determination of Vitamin A (Acetate) and Vitamin E (Alphatocopherol)	WI 051 (UPLC PDA)
	Determination of Colourants in Beverage (Carmosine, Quinoline Yellow, Brilliant Blue, Sunset Yellow, Tartrazine, Allura Red, Ponceau 4R)	WI 053(UPLC PDA)
1.2 CARBON DIOXIDE	Determination of Hydrocarbons. (Acetaldehyde, Benzene, Toluene, Ethylbenzene, p-Xylene, m-Xylene, o-Xylene, Carbon monoxide, Methane, Ethane, Ethylene, Propane, Propylene, Isobutane, n-Butane, 1-Butene0)	WI 020 (GC MSD FID)
	Determination of Total Sulphurs	WI 021 (TSA)
	Determination of Total Volatile Hydrocarbons(as methane)	WI 022 (THA)
	Determination of Sulphur Compounds (Hydrogen sulphide, Carbonyl sulphide, Dimethyl sulphide, Methyl mercaptan, Ethyl mercaptan)	WI 023 (GC-SCD)
	Determination of various impurities in beverage grade CO ₂ gas	WI 024 (Detector Tube)
	Determination of Moisture	WI 025 (Moisture Analyser)
	Carbon dioxide % purity by caustic absorption method and evaluation of Oxygen and Nitrogen by calculation	WI 026 (Zahm type purity tester)
1.3 WATERS (RAW, TREATED, PACKAGED, WASTE WATER, BOREHOLE)	Cations in water (Ca, Mg, Na, K)	WI 010 (IC)
	Determination of pH and Alkalinity	WI 013 (Autotitrator)
	Determination of Turbidity (as NTU) in water samples.	WI 016 (Turbidity Meter)
	Determination of Trihalomethanes	WI 018 (GC ECD)
	Determination of Total Organic Carbons	WI 029 (TOC Analyser)
	Determination of Conductivity and TDS	WI 031 (Conductivity meter)

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Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/ Techniques Used
1.3 WATERS (RAW, TREATED, PACKAGED, WASTE WATER, BOREHOLE)	<p>Anions in water (Nitrite, Bromate)</p> <p>Determination of metals in treated and packed water (Be, B, Na, Mg, Al, K, Ca, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Mo, Ag, Cd, Sn, Sb, Ba, Tl, Pb, Th, U)</p> <p>Determination of Mercury</p> <p>Determination of free Cyanide</p> <p>Determination of Volatile Organic Compounds (BTEX)</p> <p>Analysis of ESI +ve pesticides in water (Aldicarb, Aldicarb sulfoxide, Atrazine and Oxamyl)</p> <p>Determination of Anions (Bromide, Chloride, Chlorate, Chlorite, Flouride, Sulphate, Phosphate and Nitrate)</p> <p>Determination of Halo Acetic acids (Dichloroacetic acid, Trichloroacetic acid)</p> <p>Determination of Diquat</p> <p>Determination of Acrylamide</p> <p>Determination of Volatile Organic Compounds: (Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane, Ethyl Chloride, Trichloromonofluoromethane, 1,1-Dichloroethene, Methylene Chloride, trans-1,2-Dichloroethene, tert-Butylmethyl Ether, 1,1--Dichloroethane, cis-1,2-Dichloroethene, Bromochloromethane, Chloroform, 2,2-Dichloropropane, 1,2-Dichloroethane, 1,1,1-Trichloroethane, 1,1-Dichloropropene, Carbon tetrachloride, Benzene, Dibromomethane, 1,2-Dichloropropane, Trichloroethylene, Bromodichloromethane, trans-1,3-Dichloropropene, cis-1,3-Dichloropropene, 1,1,2-Trichloroethane, Toluene, 1,3-Dichloropropane, Dibromochloromethane, 1,2-dibromoethane, Tetrachloroethylene, 1,1,1,2-Tetrachloroethane, Chlorobenzene, Ethylbenzene, m,p-Xylene, Styrene, Bromoform, 1,1,2,2-Tetrachloroethane, o-Xylene, 1,2,3-trichloropropane,</p>	<p>WI 032 (IC)</p> <p>WI 033 (ICP MS)</p> <p>WI 034 (FIMS)</p> <p>WI 038 (Bioscan IC)</p> <p>WI 042 (Purge & Trap GC MSD)</p> <p>WI 043 (UPLC MS MS)</p> <p>WI 055 (IC)</p> <p>WI 056 (UPLC MS MS)</p> <p>WI 059 (UPLC MS MS)</p> <p>WI 060 (UPLC MS MS)</p> <p>WI 062 (GC MSD)</p>

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1.3 WATERS (RAW, TREATED, PACKAGED, WASTE WATER, BOREHOLE)	Determination of Volatile Organic Compounds (<i>continued</i>): Isopropylbenzene, Bromobenzene, n-Propylbenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,3,5-Trimethylbenzene, tert-Butylbenzene, 1,2,4-Trimethylbenzene, sec-Butylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 4-isoPropyltoluene, 1,2-Dichlorobenzene, n-Butylbenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, 1,2,3-Trichlorobenzene)	WI 062 (GC MSD)
	Determination of Epichlorohydrin	WI 068 (GC MS)
	Determination of Hardness	WI 072 (Calculation method)

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