

CERTIFICATE OF ACCREDITATION

ALFRED H KNIGHT ZAMBIA LIMITED

Company Registration No. 41960

Facility Accreditation Number: TEST-5 0069

is a SADCAS accredited Testing Laboratory
provided that all SADCAS conditions are complied with

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

CHEMICAL ANALYSIS

The facility is accredited in accordance with the recognized International Standard

ISO/IEC 17025:2017

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

*SADCAS is a subsidiary organization of SADC. A memorandum of understanding between SADC and
SADCAS serves as the basis for the recognition of SADCAS by SADC Member States
as a multi-economy accreditation body*

Mrs Maureen P Mutasa
SADCAS Chief Executive Officer

Effective Date (Issue No: 1): 28 March 2022
Certificate Expires: 27 March 2027

ANNEXURE A

SCHEDULE OF ACCREDITATION

CHEMICAL ANALYSIS

Laboratory Accreditation Number: **TEST-5 0069 (ISO/IEC 17025:2017)**

<p><u>Permanent Address of Laboratory</u> Alfred H Knight Zambia Limited Corner Mindola Golf Club Roads Nkana West Kitwe Copperbelt Zambia</p> <p><u>Postal Address</u> P O Box 20303 Kitwe Copperbelt Zambia</p> <p><u>Tel</u> : +260 212 226 433 <u>Cell</u> : +260 97 300 1988 <u>Email</u> : rita.lombe@ahkgroup.com</p>		<p><u>Technical Signatories</u> Mr K Kalumba (Minerals, Petroleum Products Water & Effluents except, AW24 & AW38) Mr Z Kabwe (Petroleum Products) Mr C Tembo (Petroleum Products) Mr J Luchele (Ores & Concentrates, except AG09 & AG39) Mr M Chintambi (Water & Effluents) Ms A Nyambi (Ores & Concentrates, except AG09 & AG39) Mr A Chitete (Ores & Concentrates) Mr F Zonde (Water & Effluents)</p> <p><u>Nominated Representative</u> : Ms R Lombe</p> <p><u>Issue No</u> : 03 <u>Date of Issue</u> : 13 October 2023 <u>Date of Expiry</u> : 27 March 2027</p>
MATERIALS/PRODUCTS TESTED	TYPES OF TESTS/PROPERTIES MEASURED, RANGE OF MEASUREMENT	STANDARD SPECIFICATIONS, EQUIPMENT/TECHNIQUES USED
Petroleum Products	Kinematic Viscosity Total Base Number Total Acid Number Specific Gravity Wear Metals of Silicon	AHK/99/ECM09 AHK/99/ECM10 by Potentiometric Perchloric Acid Titration AHK/99/ECM11 by Potentiometric Titration AHK/99/ECM13 by Hydrometer Method AHK/99/ECM05 by Emission Spectrometry
Copper Concentrates	Copper Copper in Concentrates	AHK/99/AG01 by Electrogravimetry Method including Sample Treatment to AHK/99/GA/HTCSS1 AHK/99/AG02 by Volumetric Method including Sample Treatment to AHK/99/GA/HTCSS1

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Laboratory Accreditation No: TEST-5 0069 (ISO/IEC 17025:2017)

Issue No: 03

Date of Issue: 13 October 2023

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MATERIALS/PRODUCTS TESTED	TYPES OF TESTS/ PROPERTIES MEASURED, RANGE OF MEASUREMENT	STANDARD SPECIFICATIONS, EQUIPMENT/ TECHNIQUES USED
Cobalt Ores and Concentrates	Cobalt	AHK/99/AG03 by Potentiometric Method including Sample Treatment to AHK/99/GA/HTCSS1
Ores, Concentrates and Tails	Silica	AHK/99/AG06 by Gravimetric Method including Sample Treatment to AHK/99/GA/HTCSS1
Ores and Mine Grade Samples	Copper and Cobalt	AHK/99/AG21 by Atomic Absorption Spectrometry including Sample Treatment to AHK/99/GA/HTCSS1
Ores and Concentrate samples	Acid Soluble Copper and Cobalt	AHK/99/AG23 by Atomic Absorption Spectrometry including Sample Treatment to AHK/99/GA/HTCSS1
Natural Water, Effluents and Potable Water Sample	pH (4.00 - 9.20)	AHK/99/AW07
	Electrical Conductivity	AHK/99/AW08
	Determination of Sulphates (mg/l) and Phosphates	AHK/99/AW05
	Total Dissolved Solids	AHK/99/AW10
	Total Alkalinity	AHK/99/AW16
	Total Suspended Solids	AHK/99/AW11
	Total Hardness	AHK/99/AW15
	Nitrite	AHK/99/AW20
	Metals: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Se, Sr, Sn, Sb, Th, Tl, U, V, Zn	AHK/99/AW12 by ICP

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Natural Water, Effluents and Potable Water Sample	Fluoride Chloride	AHK/99/WE/AW24 by Ion-Selective Electrode AHK/99/WE/AW38 by Argentometric method
Mining and Geological Samples	Metals: Ag, Al, As, Ca, Co, Cu, Fe, Mg, Mn, Na, Pb, and Zn after 4 acid digestion	AHK/99/AG39 by ICP-OES including sample Treatment to AHL/99/GA/HTCSS1
Copper, Lead, and Zinc Ores And Concentrator Commodities	Silver (Ag) after aqua regia digestion and AAS finish	AHK/99/AG09 by Atomic Absorption Spectrometry

Original date of accreditation: 28 March 2022

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Pinkie J Malebe
SADCAS Technical Manager