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FOREWORD

Recommendations for corrections, additions or deletions should be addressed to the:

Senior Manager
Innovation Hub
City Power Johannesburg (SOC) Ltd
P O Box 38766
Booysens
2016

INTRODUCTION

City Power strives to become a world class energy distributor. In line with this vision the company continues to invest in innovative techniques and technologies that will improve the overall performance and management of its entire Network infrastructure. Furthermore, the company seeks to provide oil analytical services with accurate measurements, leading to advance Electrical Network management.

Oil laboratory mission statement states “To respond to the Business needs for analytical services using creativity, flexibility, production depth and technical expertise in performing simple or complex analyses with total focus on customer satisfaction and quality workmanship’’

1. SCOPE

The purpose of this standard for laboratory chemicals is to ensure that correct items are supplied, so as to keep laboratory equipment in optimal operating condition. It is not the intent of this standard to restrict any manufacturer from exceeding the minimum requirements described in this document.

The oil laboratory is a division of City Power, their main focus is transformer condition monitoring through oil analysis. The following tests are performed on oil samples: Moisture analysis; Dielectric strength test; Neutralisation number; Dissolved gas analysis; Colour of oil; Tan delta; Interfacial tension; Furan analysis and Density

2. NORMATIVE REFERENCES

The following documents contain provisions that, through reference in the text, constitute requirements of this standard. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

IEC/ISO 17025: *General requirements for the competence of testing and calibration laboratories*

SANS/IEC 10232_1: *Transport of dangerous goods — Emergency information systems Part 1: Emergency information system for road transport*

SANS/IEC 10232_3: *Transport of dangerous goods — Emergency information systems Part 3: Emergency response guides*

SANS/IEC 10232_4: *Transport of dangerous goods — Emergency information systems part 4: Transport emergency card*

SANS/ISO 11014: *Safety data sheet for chemical products — Content and order of sections*

SANS/ISO 9001*: Quality Management system.*

SANS/ISO 14001: *Environmental Management system*

SANS/ISO 45001: *Occupational Health and Safety management systems.*

3. DEFINITIONS

Definitions used in this document shall reference to those used at the normative reference documents.

4. GENERAL REQUIREMENTS

The standard is for the supply and delivery of chemicals. The quantity to be supplied shall depend upon the requirements of the Laboratory schedules.

4.1 Specifications

A number of items listed in the schedule/s are of high or higher grade, as to address and not accept sub-standard product/s, all products shall be accompanied by their specification.

4.2 Sample analysis

Strategic testing of chemicals, certain chemicals/product shall be require to undergo extensive testing, it may be time consuming and costly for the Service Provider or Manufacturer. Due diligence of Service Provider/s or Manufacturer shall be requested.

A sample analysis method shall be agreed as to test the relevant product to the following: - Solid content; Density; Viscosity and /or Jar test or other method.

Also limits for each product shall be based on an approved SANS/IEC standard.

4.3Chemical specification

The below table list several items used by the oil laboratory and their chemical formulation:

Item	Description	Grade
1.	Ethanol AR grade	99.9%
2.	Hydranal Coulomat A	99.9%
3.	Hydranal Coulomat CG	99.9%
4.	Hydranal Water Standard 1.0	99.9%
5.	Acetone CP grade	99.9%
6.	Acetonitrile HPLC Grade	99.9%
7.	Tetra butyl ammonium hydroxide 0.1N in methanol-propan-2-ol	99.9%
8.	Methanol AR	99.9%
9.	Methanol HPLC	99.9%
10.	Ethanol HPLC	99.9%
11.	Toulene AR	99.9%
12.	Toulene HPLC	99.9%
13.	n-Hexane HPLC	99.9%
14.	Propanol AR	99.9%
15.	5 Hdroxymethyl 2-Furaldehyde standard	99.9%
16.	5 Methyl Furfural standard	99.9%
17.	2 Fury methyl ketone standard	99.9%
18.	Furfural Alcohol standard	99.9%
19.	2 Furaldehyde standard	99.9%
20.	Nitric Acid 0.1M	99.9%
21.	Hydrochloric Acid 0.1M	99.9%
22.	Potassium Hydroxide pellets	99.9%
23.	Methylated Spirit Non coloured CP	99.9%
24.	Phenolphthalein AR	99.9%
25.	Alkali Blue indicator AR	99.9%

Table 1: Chemical specification

5. HANDLING AND STORAGE

The Supplier shall be notified of the quantity of chemicals to be delivered. The Supplier is required to dispatch and deliver this quantity as required. Delivery will be taken to City Power laboratory storage facilities. Deliveries shall be made in compliance with the City Power's safe working procedure and with Material Safety Data Sheet (MSDS) for each product. The Supplier shall make themselves familiar with City Power's safe working procedures.

The vehicle is to be clearly marked and carry all necessary safety equipment as per SANS 10232 Part 1 to 3, to ensure that off-loading can be conducted in a manner that will not endanger the environment or personnel.

NOTE: Delivery and transfer of risk shall be on the Service Provider when goods are placed at the disposal Service Provider when arriving by means of transport.

5.1 Guaranteed shelf life upon delivery

The Service Provider or the Manufacturer shall give guaranteed shelf life (agreed in Contract) on each product supplied.

5.2 Warranty

A twelve (12) month warranty shall be provided (agreed in Contract) for on each product supplied.

5.3 Container / Equipment issues

Any receptacles for containing chemicals supplied shall be leak proof and or undamaged. Leaking and or damaged container shall be returned to the Supplier. All costs incurred resulting from leaking containers and spillages caused by the supplier will be for the Supplier's account.

NOTE: Each MSDS, has detail information on handling and storage, so shall apply to every specific or relevant product supplied.

6. HEALTH AND SAFETY

The successful Service Provider shall be strictly in compliance with the provisions of the Occupational Health and Safety Act and regulations (Act 85 of 1993), National Environmental Management Act and regulations (Act 107 of 1998), National Road Traffic Act (Act 93 of 1996) and the relevant SANS code of practice, together with all amendments and regulations promulgated there under at any time up to and including the date of completion of this contract.

Subject to provisions of Section 10 (3) and (4) of the Hazardous Chemical Substances Regulations of the Occupational Health & Safety Act 85 of 1993, every person/supplier who manufactures, imports, sells or supplies any hazardous chemical substance for use at work shall as far as reasonably practicable provide the party receiving such substance, free of charge with a material safety data sheet containing all the information as contemplated in either ISO11014.

7. DOCUMENTATION

7.1 Material Safety Data Sheet

A material safety data sheet (MSDS) and certificate of analysis shall accompany all chemicals supplied.

7.2 Product Information Sheet

The Manufacturer shall give details of the raw material used for the manufacturing of each chemical in terms of origin of the raw material and chemical composition. Specific attention must be given to any constituent that may be of a health concern.

7.3 Certificate of Analysis (COA)

All material supplied shall be accompanied by a certificate of analysis (COA).

8. TESTS AND EVALUATION

Any other determining factor deemed necessary by City Power shall also be stated as required.

9. TRAINING OF STAFF

All staff members involved in laboratory chemicals shall be trained and, where relevant, a register to ensure that each scope of the training is carried out in accordance with the relevant standard. They shall have been made fully aware of safe working practices and any dangers involved in the scope of chemicals.

10. QUALITY MANAGEMENT

A quality management system/plan shall be set up to assure quality during manufacture, installation, removal, transportation, and disposal. Guidance on the requirements for a quality management system may be found in the following standards: ISO 9001:2015. The details shall be subject to an agreement between the purchaser and supplier.

11. ENVIRONMENTAL MANAGEMENT

An environmental management system/ plan shall be set up to ensure the proper environmental management and compliance is adhered to during manufacturing, installation, removal, transportation, and disposal. Guidance on the requirements for an environmental management system shall be found in ISO 14001:2015 standards. The details shall be subject to an agreement between City Power and the Supplier. This is to ensure that the asset created conforms to environmental standards and City Power SHERQ Policy.

12. OCCUPATIONAL HEALTH AND SAFETY (OHS) MANAGEMENT

A health and safety system/plan shall be set up to ensure proper management and compliance during manufacture, installation, removal, transportation, and disposal. Guidance on the requirements of a health and safety plan shall be found in ISO 45001:2018 standards. The details shall be subject to an agreement between City Power and the Supplier

13. DESCRIPTION AND QUANTITIES

The items; quantity and price entered for each item.

Item	Description	Grade	Quantity
1.	Ethanol AR grade	99.9%	2.5 Litre
2.	Hydranal Coulomat A	99.9%	500 ml
3.	Hydranal Coulomat CG	99.9%	50 ml
4.	Hydranal Water Standard 1.0	99.9%	40 ml
5.	Acetone CP grade	99.9%	2.5 Litre
6.	Acetonitrile HPLC Grade	99.9%	2.5 Litre
7.	Tetra butyl ammonium hydroxide 0.1N in methanol-propan-2-ol	99.9%	2.5 Litre
8.	Methanol AR	99.9%	2.5 Litre
9.	Methanol HPLC	99.9%	2.5 Litre
10.	Ethanol HPLC	99.9%	2.5 Litre
11.	Toulene AR	99.9%	2.5 Litre
12.	Toulene HPLC	99.9%	2.5 Litre
13.	n-Hexane HPLC	99.9%	2.5 Litre
14.	Propanol AR	99.9%	2.5 Litre
15.	5 Hdroxymethyl 2-Furaldehyde standard	99.9%	25mL
16.	5 Methyl Furfural standard	99.9%	20mL
17.	2 Fury methyl ketone standard	99.9%	10mL
18.	Furfural Alcohol standard	99.9%	25mL
19.	2 Furaldehyde standard	99.9%	25mL
20.	Nitric Acid 0.1M	99.9%	1L
21.	Hydrochloric Acid 0.1M	99.9%	2.5mL
22.	Potassium Hydroxide pellets	99.9%	2.5mL
23.	Methylated Spirit Non coloured CP	99.9%	25l
24.	Phenolphthalein AR	99.9%	100g
25.	Alkali Blue indicator AR	99.9%	250ml

Tender Number: _____

Tenderer's Authorised Signatory:

_____

Name in block lettersSignature

Full name of company:_____

ANNEXURE A - BIBLIOGRAPHY

City Power: The supply and delivery of chemicals to city power

ANNEXURE B - REVISION INFORMATION

DATE	REV. NO.	NOTES
July 2017	0	First issue
October 2024	1	Second Issue Update ISO requirements Removed consumables from title and content Edit table for descriptions and quantities numbering