

	Instruction	Hendrina Power Station
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Title: **Scope of work for Supply and delivery of Laboratory Chemicals as and when required.**

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1. Introduction

Supply and delivery of Laboratory Chemicals as and when required at Hendrina Power Station for a period of 5 years.

2. Supporting Clauses

2.1 Scope

The scope of work covered in this contract is the Supply and delivery of Laboratory Chemicals as and when required at Hendrina Power Station for a period of 5 years. The Supplier shall provide all Chemicals listed on the scope of work document as (Annexure A)

2.1.1 Purpose

The purpose of this instruction is to outline the requirements and specifications of the chemicals needed for operation of Hendrina Power Station Laboratory.

2.2 Normative/Informative References

2.2.1 Normative

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.2 Informative

- (1) NEC3 Supply Contract
- (2) Eskom Procurement Procedure
- (3) 32-727 Safety, Health, Environment and Quality (SHEQ) Policy
- (4) ISO 9001 Quality Management Systems.
- (5) Handling of hazardous substances
- (6) Occupational Health & Safety Act

2.3 Definitions

Definitions	Explanation
Hazard pictogram	Is a safety signal indicating the hazard of the item
Chemicals	Is any pure substance (an element) or any mixture (a solution, compound, or gas).
Supplier	A person or company that undertakes a contract to provide materials or labour to perform a service or do a job
SHEQR	Safety Health Environment Quality and Risk
NEC	New Engineering Contract
SDS	Safety Data Sheet

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2.4 Abbreviations

None

2.5 Roles and Responsibilities

Role	Responsibility
Employer	It is the responsibility of the employer to ensure that the contractor adhere to the requirements as stated in the SOW
Contractor	It is the responsibility of the contractor to ensure that the scope outlined in this instruction is adhered to throughout the contract period.

2.6 Process for Monitoring

Monitoring shall be conducted through Audits, Risk assessments, on job observation and management reviews and/or any other method deemed feasible.

2.7 Related/Supporting Documents

N/A

3. Instruction

3.1 Scope of work for Supply and delivery of Laboratory Chemicals as and when required:

- The Supplier shall comply with Eskom's policies and site regulations, including adherence to Eskom's Life Saving rules, SHEQ policy, no smoking policy, Zero Harm, etc. These requirements will be detailed during the induction training process.
- The Supplier shall supply and deliver chemicals timeously as and when required as per the employer's request.
- The Supplier to provide Safety data sheet and Certificate of analysis on every delivery corresponding to the specific batch number of a chemical.
- Quality control, Identification, and traceability of chemicals to be clearly labelled including hazard pictogram.
- The Eskom employee shall sign on the chemical received form and file the necessary documents.
- If the chemical received do not meet the specifications Eskom shall return the product back to the supplier for exchange for a new batch.
- Packaged material damaged due to inadequate protection will not be accepted at site.
- Supplier to deliver the required specified purity of chemicals not alternatives / substitutes.
- All chemicals supplied to the Lab must be AR grade, Assay min 99.5%,
- The Supplier shall ensure Health and safety requirement on the chemicals supplied.
- All pH buffer solution shall have verifiable information with corresponding temperature.
- The Supplier shall only deliver the good quality product/s to the premises after the purchase order number has been released.

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- The Supplier shall ensure labelling of chemicals and reagents is clear and corresponds with the catalogue number provided.
- The Supplier shall comply with NEC contract documents signed for the duration of 5years.
- The employer has every right to terminate the contract according to NEC laws if the Supplier does not comply with the agreement.
- The contractor shall provide the compatibility matrix of the chemicals.

3.2 Specifications

3.2.1 The Labels on the chemicals shall include the following:

1. Full name of product and trade name
2. Chemical formula and molar mass
3. Specific gravity (for acids)
4. Pack size/ volume /mass with appropriate scientific units
5. Batch/lot number
6. Date manufactured and minimum shelf-life date. Note: minimum shelf-life must not be within the year the chemicals are delivered.
7. Assay and/ or Maximum limits of impurities
8. Hazard pictogram
9. Chemical Abstract Services number
10. Grade and purity
11. Storage and safety handling
12. The SDS of the product shall contain 16 points information as per OSHA 29 CFR 1910.120, Hazardous Chemical Substances Regulations

3.2.2 The Certificate of Analysis shall contain the following information:

1. Chemical name
2. Chemical formula
3. Batch number and Chemical Abstract Services number
4. Date of analysis
5. Analysis performed (Product Specification and Batch results)
6. Methods used for each analysis
7. Signature of responsible laboratory technician and supervisor

4. SHEQR requirements

SHEQR requirements that cover the total holistic approach to all potential risks includes the following legal obligation:

- The Supplier shall comply with the health and safety requirements as per Eskom site procedures and compliance to ISO 45001
- The Supplier shall comply with ISO 14001 Environmental management system standard.
- Quality management system compliance ISO 9001 standard shall apply.
- Comprehensive Risk assessments to be in place.

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5. Records to be kept.

- All SDS's and Certificates of analysis to be kept/filed at the Chemical Services department.

6. Notes / Forms / Appendices / Annexures

- **Notes**
Nil
- **Forms**
Nil
- **Annexures**
List of Chemicals (Annexure A)

- **Appendices**
Nil

7. Acceptance

This document has been seen and accepted by:

Name	Designation

8. Revisions

Date	Rev.	Compiler	Remarks
March 2025	0		New Document
June	1		Review

9. Development Team

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Annexure A: List of Chemicals

Product Description	Concentration	Package Size	Specifications	Quantity / 5 Years
Acetone		2.5 L	AR grade, Assay min 99.5%,	40
Acetyl Acetone		2.5 L	AR grade, Assay min 99.5%,	15
Ascorbic Acid		500g	AR grade, Assay min 99.5%,	20
Ascorbic Acid Powder Pillow			AR grade, Assay min 99.5%,	50
Acid 6 Molar Phosphoric Cartridges		0.3 L	For TOC, AR grade, Assay min 99.5%,	100
Aluvere 3 Aluminium Reagent Powder Pillow for 10ml sample	0.008 – 0.800mg/l Al ³⁺			50
1-Amino-2-Hydroxy-4Naphthalene Sulfonic Acid		100g	AR grade, Assay min 99.5%,	50
Amino Acid F Dilution Solvent		500ml	AR grade, Assay min 99.5%,	200
Amino Acid F Reagent Powder		410g	AR grade, Assay min 99.5%,	200
Ammonium Molybdate		500g	AR grade, Assay min 99.5%,	60
Ammonium Hydroxide	25%		AR grade, Assay min 99.5%,	50
Ammonium Ferrous Sulphate		500g	AR grade, Assay min 99.5%,	50
Aqualine Electrolyte A		500ml	AR grade, Assay min 99.5%,	100
Aqualine Electrolyte CG		500ml	AR grade, Assay min 99.5%,	100
Ammonium Chloride		500g	AR grade, Assay min 99.5%,	100
Ammonia Solution	35%	2.5 L	AR grade, Assay min 99.5%,	20
Ammonium Molybdate 4Hydrate		500g	AR grade, Assay min 99.5%,	50

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Ammonium Ferrous Sulfate Hexahydrate		500g	AR grade, Assay min 99.5%,	50
AMI Silitrace standard				120
BDH 4.5 Indicator		500 ml	AR grade, Assay min 99.5%,	30
Bromophenol Blue indicator		25g	AR grade, Assay min 99.5%,	30
Benzoic Acid Tablets	26.4381 MJ/Kg	200g	AR grade, Assay min 99.5%,	30
Chemical Oxygen Demand TNT plus Vial Test/25Tests	1 – 60mg/l COD		AR grade, Assay min 99.5%,	120
Calcium Carbonate		500g	AR grade, Assay min 99.5%,	100
Calcium Chloride		500g	AR grade, Assay min 99.5%,	50
Chloride Standard	1000 ppm		Titrisol Ampule AR grade and preserved in H2O for IC	100
Chloride Standard	1000 ppm		Standard AR grade and preserved in H2O for IC	50
Calcium Standard	1000 ppm		Titrisol Ampule AR grade and preserved in HNO3 for AAS	100
Calcium Standard	1000 ppm		Standard AR grade and preserved in HNO3 for AAS	50
Conductivity Standard	1470 µS/cm		AR grade, Assay min 99.5%,	80
Conductivity Standard	147 µS/cm		AR grade, Assay min 99.5%,	80
Conductivity Standard	1413 µS/cm		AR grade, Assay min 99.5%,	80
Copper Standard	1000 ppm		Titrisol Ampule AR grade and preserved in HNO3 for AAS	100
Copper Standard	1000 ppm		Standard AR grade and preserved in HNO3 for AAS	50
Copper Reagent Powder Pillow for 10ml Sample/100pk	2 – 210ug/l CU			60

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Calcon Carboxylic Acid		500ml	AR grade, Assay min 99.5%,	50
Citric Acid F Reagent		500ml	AR grade, Assay min 99.5%,	200
Camphor		250g	AR grade, Assay min 99.5%,	10
Coal QC General Analysis Standard		150g	AR grade, Assay min 99.5%,	60
Combititrant 5		100ml		100
Chloroform-Isoamyl Alcohol		2.5 L		100
DPD 1 Tablet Ness Toil		250/Box	AR grade, Assay min 99.5%,	6000
Di – isopropylamine		2.5 L	AR grade, Assay min 99.5%,	3000
Diphoterine solution combined with TRIVOREX Neutralizing Absorbent	Wall mounted station			15
Disodium Salt of Ethylene Diamine Tetra- Acetic Acid (EDTA- Na ₂)		25Kg	AR grade, Assay min 99.5%,	50
EDTA Solution	0.02N	2.5 L	AR grade, Assay min 99.5%,	30
Ethanol Solution	99%	2.5 L	AR grade, Assay min 99.5%,	10
Ethanol	100%	2.5 L	AR grade, Assay min 99.5%,	50
Sodium etching Solution (HF)		500ml	AR grade	100
Eriochrome Black T		25g	AR grade, Assay min 99.5%,	50
Extran Liquid Detergent Soap		1.8 L	AR grade, Assay min 99.5%,	100
Eluent Concentrate Sodium Carbonate	4.5mM	250ml	AR grade, Assay min 99.5%,	50
Eluent Concentrate Sodium Bicarbonate	1.4 mM	250ml	AR grade, Assay min 99.5%,	50
Flourescein Sodium Salt		1 kg	AR grade, Assay min 99.5%,	300

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Floride Standard	1000ppm	500ml	AR grade, Assay min 99.5%,	10
Hydrochloric Acid	32%	2.5L	AR Grade AR grade, Assay min 99.5%,	100
Hydrochloric Acid	65%	2.5L	Ultrapure AR grade, Assay min 99.5%,	100
Hydrogen Peroxide	35%	1L	AR grade, Assay min 99.5%,	30
Hydranal Water standard Vials	1000 ppm	5ml	AR grade, Assay min 99.5%,	300
Hydranal Coulomat AG		500ml	AR grade, Assay min 99.5%,	50
Hydranal Coulomat CG		500ml	AR grade, Assay min 99.5%,	100
Hydranal Oil		500ml	AR grade, Assay min 99.5%,	50
Hydranal Coulomat AD		500ml	AR grade, Assay min 99.5%,	50
Hexane Fraction Solution		2,5L	AR grade, Assay min 99.5%,	60
Iron Standard	1000 ppm	500ml	Titrisol Ampule AR grade, Assay min 99.5%,	100
Iron Standard	1000 ppm	500ml	Standard AR grade, Assay min 99.5%,	50
KHP (Potassium Hydrogen Phthalate)		500ml	AR grade, Assay min 99.5%,	60
Hydrated Lime (Calcium Hydroxide)		25 kg	AR grade, Assay min 99.5%,	30
Mercuric Chloride		500g	AR grade, Assay min 99.5%,	10
Magnesium Chloride		500g	AR grade, Assay min 99.5%,	50
Methyl red		50g	AR grade, Assay min 99.5%,	20
Methanol		2.5 L	AR grade, Assay min 99.5%,	50
Molybdate 3 Reagent		1L	AR grade, Assay min 99.5%,	300

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Methyl Orange Solution		500ml	AR grade, Assay min 99.5%,	20
Magnesium Standard	1000 ppm	500ml	Titrisol Ampule AR grade and preserved in H2O for IC	100
Magnesium Standard	1000 ppm	500ml	Standard AR grade and preserved in H2O for IC	50
Manganese Low Range Powder for 25ml sample100/pkt				80
Multi-Element Standard that contains Seven Anions Cl, SO4, NO2,NO3,PO4, F and Br)		500 ml	AR grade, Assay min 99.5%, preserved in H2O for IC	100
Methylated Spirit		25 L	AR grade, Assay min 99.5%,	60
Nitric acid	0.1N	2.5L	Ampule AR grade, Assay min 99.5%,	100
Nitric Suprapur Acid	65%	2.5L	AR grade, Assay min 99.5%,	100
Nitrate Standard	1000ppm	500ml	AR grade, Assay min 99.5%,	5
Nitrite Standard	1000ppm	500ml	AR grade, Assay min 99.5%,	5
NitraVer 5 Nitrate Reagent Powder for 5ml Sample100/pkt	50mg/l NO3-N			100
NitraVer 3 Nitrate Reagent Powder for 10ml Sample100/pkt	0.002 – 0.300mg/l NO2-N			100
Oxalic Acid		500g	AR grade, Assay min 99.5%,	50
Oxalic Acid Dehydrate		500g	AR grade, Assay min 99.5%,	100
Oxidizer Ammonium Persulphate Cartridges	15%	0.150L	AR grade, Assay min 99.5%,	150
Oxycon Online Silitrace Reagent			AR grade, Assay min 99.5%,	120
Oxycon Chlorine Reagent			AR grade, Assay min 99.5%,	120

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Potassium Dichromate		500g	AR grade, Assay min 99.5%,	10
Potassium Iodide		500g	AR grade, Assay min 99.5%,	50
Potassium Antimony Tartrate		500g	AR grade, Assay min 99.5%,	50
Potassium Chloride		500g	AR grade, Assay min 99.5%,	300
Potassium Sulfate		500g	AR grade, Assay min 99.5%,	50
Potassium Hydroxide		500g	AR grade, Assay min 99.5%,	70
Potassium Dihydrogen Orthophosphate		500g	AR grade, Assay min 99.5%,	50
Potassium Standard	1000 ppm	1000 ml	Titrisol Ampule AR grade and preserved in H2O for AAS	100
Potassium Standard	1000ppm	500ml	Standard AR grade and preserved in H2O for AAS	50
Phosphate Standard	1000ppm	1000 ml	Titrisol Ampule AR grade and preserved in H2O for IC	50
Phosphate Standard	1000ppm	500ml	Standard AR grade and preserved in H2O for IC	30
Phosphate Low Range Reagent powder (100 Test) for			AR grade, Assay min 99.5%,	80
Propanol Alcohol		2.5 L	AR grade, Assay min 99.5%,	25
Phenolphthalein Powder / Solution		100ml	AR grade, Assay min 99.5%,	20
Potassium Metabisulphite		500g	AR grade, Assay min 99.5%,	100
Potassium Disulphite		500g	AR grade, Assay min 99.5%,	100
Phosphoric acid		500g		50
Photometry for Chematest Set				3

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PH Buffer 0-5		500ml	AR grade, Assay min 99.5%,	300
PH Buffer 4		500ml	AR grade, Assay min 99.5%,	300
PH Buffer 7		500ml	AR grade, Assay min 99.5%,	300
PH Buffer 9		500ml	AR grade, Assay min 99.5%,	300
PH Buffer 10		500ml	AR grade, Assay min 99.5%,	300
PH Indicator		100ml	AR grade, Assay min 99.5%,	50
Sodium Hydroxide (Caustic Pellets)		5 kg	AR grade, Assay min 99.5%,	3000
Sodium Carbonate	0.1N		Ampule, AR grade, Assay min 99.5%,	20
Sodium Persulfate		500g	AR grade, Assay min 99.5%,	35
Sulphuric Acid	98%	2.5 L	AR grade, Assay min 99.5%,	50
Sulphuric Acid	1000 ppm	500ml	Ampule, AR grade, Assay min 99.5%,	20
Sulphuric Acid Standard	1000 ppm	1000ml	AR grade, Assay min 99.5%,	20
Silica Standard	1000 ppm	500ml	As SIO2	30
Silica Standard	1000 ppm	1000 ml	Ampule As SIO2, AR grade, Assay min 99.5%,	30
Sodium Chloride		500g	AR grade, Assay min 99.5%,	100
Sodium Hydrogen Carbonate		500g	AR grade, Assay min 99.5%,	25
Sodium Carbonate Salt Anhydrous		500g	AR grade, Assay min 99.5%,	25
Sodium Fluoride		500g	AR grade, Assay min 99.5%,	5
Sodium Nitrate		500g	AR grade, Assay min 99.5%,	5

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Sodium Nitrite		500g	AR grade, Assay min 99.5%,	5
Sulphate Standard	1000 ppm	1000ml	AR grade, preserved in H2O for IC	100
Sulphate Standard	1000 ppm	500ml	Titrisol Ampule, AR grade, preserved in H2O for IC	50
Sulfate Reagent Powder Pillows for 10ml Sample/100 pack			AR grade, Assay min 99.5%,	150
Sodium Standard	1000 ppm	1000ml	AR grade, preserved in H2O for AAS	150
Sodium Standard	1000 ppm	500ml	Titrisol Ampule, preserved in H2O for IC	50
Sodium Acetate Salt		500g	AR grade, Assay min 99.5%,	30
Sodium Formate Salt		500g	AR grade, Assay min 99.5%,	30
Seven Anions Standard that contains Cl, SO4, NO2,NO3,PO4, F and Br)		200 ml	AR grade, Assay min 99.5%, preserved in H2O for IC	100
Silver Nitrate		500g	AR grade, Assay min 99.5%,	25
SPADNS 2 (Arsenic free) Fluoride Reagent Solution		500ml		30
Sucrose,p-benzoquinone		25 g	AR grade	50
Tartaric Acid		500g	AR grade, Assay min 99.5%,	60
Trisodium Phosphate (TSP)		25kg	AR grade, Assay min 99.5%,	1300
Tween 20		1 L	AR grade, Assay min 99.5%,	50
Toluene		2.5L	AR grade, Assay min 99.5%,	50
Turbidity Calibration Set (Vials)	<0.1, 20, 200,1000,4000, 7500 NTU		StablCal Calibration, Set 0 to 7500 NTU, AR grade, Assay min 99.5%,	12
Total Organic Carbon Standard	1000 ppm	500ml	AR grade, Assay min 99.5%,	30

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TRIS (Hydroxymethyl Amino Methane)		500g	AR grade, Assay min 99.5%,	20
Visometer standard sets				5
Zinc Standard	1000 ppm	500ml	Titrisol Ampule, AR grade, Assay min 99.5%,	5
Zinc Standard	1000ppm	1000ml	AR grade, Assay min 99.5%,	5

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