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**Hydrocarbon Development Institute of Pakistan**

**Tender Enquiry No. HDIP/Proj/KLC(21)/2022**

**for procurement of: Lab Equipment**

**Laboratory Equipment e.g.** CFR Engine ASTM D-2699, D-2700, Cone Penetration of Lubricating Grease ASTM D-217 (Automated), Dropping Point of Lubricating Grease ASTM D-566 (Automatic), Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor Pressure Tester) ASTM D-1267, Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657, Wax Content UOP-46, Insulating Liquids breakdown voltage determination IEC-60156.

**Signature of Issuing Officer**

**On behalf of Project Director –KLC, HDIP**

**Dated: \_November 2022**

**1.0** **INTRODUCTION**

The Hydrocarbon Development Institute of Pakistan (HDIP)/Strengthening and Up-gradation of Karachi Laboratories Complex (KLC) at HDIP Operations Office, Karachi intends to procure Laboratory Equipment and apparatus/accessories by inviting sealed bids under two envelopes bidding system (i.e. separate technical and financial bids) from reputable firms/companies for supply of: CFR Engine ASTM D-2699, D-2700, Cone Penetration of Lubricating Grease ASTM D-217 (Automated), Dropping Point of Lubricating Grease ASTM D-566 (Automatic), Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor Pressure Tester) ASTM D-1267, Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657, Wax Content UOP-46, Insulating Liquids breakdown voltage determination IEC-60156 as per Scope of Supply (**Annexure – A** **& Appendices I to VIII)** and terms and conditions given in the tender documents.

**2.0** **INSTRUCTIONS TO BIDDERS**

**2.1 Preparation of Bids**

a) All bids shall be prepared in English and submitted on “single stage – two envelope procedure”.

1. The bid shall comprise a single package containing **02** (Two) separate envelopes. Each envelope shall contain separately the **Technical Proposal**, **Financial Proposal** and the **Bid Bond**;
2. Bidder(s) are required to submit their bid(s), which will bear words “CONFIDENTIAL” and Tender # **HDIP/Proj/KLC(21)/2022** for procurement of **Lab Equipment/Material** as per Tender Notice;
3. The envelopes shall be marked as “TECHNICAL PROPOSAL”, “FINANCIAL PROPOSAL” and “BID BOND” in bold and legible letters to avoid confusion;
4. Initially, the envelope marked “TECHNICAL PROPOSAL” shall only be opened;
5. The envelope marked as “FINANCIAL PROPOSAL” shall only be opened for the qualified/successful bidders after the evaluation of their technical proposals;

b) Both bids shall consist of one original bid and one copy.

c) The Technical Bid shall comprise of:

* 1. Covering Letter as per format given at **Annexure-B**.
	2. Company Profile along with Technical qualification and credentials of the firm with the proposal of back up service available in Pakistan.
	3. Copies of NTN, Sales Tax (STRN) and Active Tax Payer’s Certificates.
	4. Authorized Distributor/Reseller Certificate(s) from the Principal(s) for all the quoted items.
	5. Undertaking of acceptance of form and conditions of contract (**Annexure-C & Annexure G**).
	6. Details of the Quoted Laboratory Equipment/Apparatus against HDIP’s requirement given in **Annexure-A** & **Appendices I-VIII**
	7. Technical brochures, manuals and other related catalogues of the manufacturers, in original.
	8. List of similar equipment already supplied in Pakistan, along with name of the organization.
	9. Letter of authorization for signing the bid on letter head of the firm/organization.
	10. Financial strength supported by latest bank certificates/audited accounts.
	11. Affidavit stating that their firm/company has not been black listed and has never indulged in courtship/suit(s) in the past (**Annexure-E**).
	12. Copy of the Bid Security Bond with crossed-out figures. (Bid will be rejected if any amount is visible).
	13. Technical Specifications Compliance Sheet, strictly as per format at **Annexure-I**. ***Non-Provision of the Compliance Sheet (or with missing information/details) will render the Bid Un-Qualified/Unsuccessful.*** *Any Spec(s)/Parameter(s)/Column/Row left blank will be considered as* ***Non-Compliant.*** Sample Compliance Sheet (Duly Filled) is attached with Annex

d) The Financial Bid shall comprise of the following:-

* 1. Schedule of prices as per **Annexure-D.** Rates should be quoted separately for each item.
	2. Original Bank Draft/Pay Order for an amount equal to 1% of quoted price per items wise separately as bid security in the name of **Project Director - KLC, HDIP, Islamabad**. (To be enclosed in envelop marked ‘BID BOND’).

**2.2 Bid Price/Currency**

1. Bidder shall quote their firm and final prices in Pak Rupees as per format given at **Annexure-D**, duly signed and stamped by authorized representative of Bidder.
2. Prices must be quoted in Pakistani currency inclusive of all taxes and duties, indicating unit price and total bid prices on FOR basis at delivery location mention in Supply Order.
3. Prices must be quoted including all charges like handling, loading, transportation and un-loading etc. for delivery of material at Purchaser’s indicated premises.
4. Quoted prices shall be valid for a period of 120 days from the date of Tender opening.
5. If Bidder discloses prices anywhere in the Technical Proposal, their bid shall be rejected. .

**2.3 Bid Security**

1. The original copy of the bid submitted shall be accompanied by a Bank Draft/Pay Order for an amount equivalent to 1% of the Bid Value issued by a reputable bank in the name of **HDIP, Islamabad** as bid security.
2. Separate Bid Security should be submitted for each item of specifications/list.
3. The Bid Security/ Bid Bond/Earnest Money may not be accepted if it is found less than 1% of the total quoted amount.
4. The bid security will be forfeited by HDIP, if;
	1. The bidder withdraws their bid after the bids are submitted/opened.
	2. The successful Bidder fails to execute the supply agreement and/or submit the required performance bond.
	3. Submit Forged document(s) in support of their bid.
	4. Fails to supply the items within the given time.
	5. Fails to execute Purchase Order and/or Contract in accordance with the tender document.
5. The bid security of the successful bidder shall be refunded after submission of Performance Bond (**Annexure-H**) and execution of supply agreement (**Annexure-F**). However, the bid security of unsuccessful bidders shall be returned within (30) calendars days.
6. If a bidder fails to furnish the bid security as prescribed above, the bid submitted shall be rejected and returned unconsidered.

**2.4 Bid Validity.**

The bid shall remain valid and open for acceptance for a period of 120 days from the deadline of submission of the bid. If HDIP requires extension in the bid validity period it will make a written request at least ten (10) days prior to the expiry of the validity period. A bidder not agreed to such extension may withdraw his bid by so advising HDIP in writing, prior to the expiry of original validity date**.** If withdrawal advice is not received by the said date, the extension shall be deemed to have been accepted by the bidder(s).

**2.5 Signing of Bid**

All copies of the bid shall be signed and stamped by the bidder or a person(s) duly authorized to bind the Bidder to the contract. Proof of authorization in the form of a letter duly signed by the Owner/Chief Executive of the firm/company shall accompany the bid. All pages of the bid shall be stamped and initiated by the person(s) signing the bid.

**2.6 Sealing/Marking of Bids**

1. The bidders shall submit two (2) copies of the technical and financial bids in separate sealed envelopes, one copy of the bid shall be marked as “Original” and the other as “Copy”. In the event of any discrepancy between these the original shall govern. The sealed envelopes containing technical and financial bids shall be marked as follow:
	* Technical Bid for Laboratory Equipment, Spares and Accessories for Project-KLC, HDIP, Plot No.18, Street-6, H-9/1, Islamabad.
	* Financial Bid for Laboratory Equipment, Spares and Accessories for Project- KLC, HDIP, Plot No.18, Street-6, H-9/1, Islamabad.

1. If the envelopes are not marked as instructed above, HDIP will not be responsible for its misplacement and the Bids may not be considered.

**2.7 Deadline for Submission of Bid**

The Technical and Financial bids for Laboratory Equipment & items prescribed in tender document must be received at the address specified above ***on or before 1100 hrs.(PST) on (Wednesday,22nd November 2022)*. Technical bids will be *opened on the same day at 11:30 hrs*.** at Hydrocarbon Development Institute of Pakistan, Plot No.18, Street-6, H-9/1, Islamabad in the presence of the representatives of bidders who desire to be present.

**2.8 Late Bids**

Any bid received by HDIP after the prescribed deadline for submission of bids shall be returned to the bidder unopened.

**2.9 Modification and Withdrawal of Bids**

1. No bid can be modified subsequent to its submission.
2. No bid shall be withdrawn during the interval between the deadline for submission of bids and the expiry of the period of bid validity as specified in the tender document. Withdrawal of a bid during the interval shall result in encashment/forfeiture of bid security.

**2.10 Bids Opening and Evaluation**

HDIP will first open the technical bids. The bids will be evaluated to:

1. Determine their responsiveness to tender documents (e.g. provision of requisite bid security and other documents listed in relevant sections of the tender document).
2. Technical responsiveness of the bid will be based on:
3. Provision of the required Documents/Details.
4. Suitability of equipment to HDIP’s requirements.
5. Reliability and efficiency of the equipment offered.
6. Financial standing of the Supplier.
7. Availability of Technical Staff, spare parts and after sale service facilities.

After technical evaluation the qualified bidders shall be notified and their Financial Bids will be opened on the date and time given in the notification. In Financial Bid opening, the prices of bidders will be announced and recorded. The financial evaluation of the bids will be as follows:

a. The bid prices quoted on F.O.R. basis to be supplied at HDIP Offices mentioned in the list of equipment or any other station mentioned in supply order in Pakistani Rupees.

b. Technical responsiveness of the bid.

c. Delivery schedule offered.

**2.11 Right to Increase/Decrease No./Quantity**

HDIP reserves the right to increase and/or decrease the No./Quantity of the equipment/item(s) at any stage after advertisement and prior to acceptance of bids.

**2.12 Right to Drop Procurement Process**

HDIP reserves the right to drop whole procurement process at any stage after its advertisement prior to/after acceptance of bids.

**2.13 Right to Accept or Reject Any or All Bids**

HDIP reserves the right to accept and/or reject any or all bid(s) prior to/after their acceptance.

**3.0 SCOPE OF SUPPLY, DELIVERY SCHEDULE, INSTALLATION AND WARRANTY COVER**

 **3.1 Scope of Supply**

 All the laboratory equipment and apparatus to be procured by HDIP shall be brand new. Details of Scope of Supply are given at **Annex-A** and **Appendices I to VIII**. The equipment shall be supplied on F.O.R. basis at HDIP Office mentioned in the list or any other station mentioned in the supply order. The supplier(s) shall be responsible for all taxes, duties, levied in the originating country of supplier(s) or in between till arrival at destination as the case may be.

 **3.2 Delivery Schedule**

 The bidders shall have to deliver the laboratory equipment & items, spares & accessories at HDIP Offices mentioned in the list or any other station mentioned in supply order, as per delivery schedule given in the Purchase Order or within a maximum of 60 days from the issuance of Purchase Order.

 **3.3 Installation of Equipment**

 The laboratory equipment and apparatus specified in Appendices I to VIII will be installed and commissioned at HDIP’s laboratories mentioned in the list or any other station under the supervision of Supplier’s Installation Engineers, if so required, at no additional cost basis. Any consumables required for the Commissioning/Training are to be provided free of cost.

 **3.4 Warranty of Equipment**

 The supplier shall give warranty for free services and free replacement of parts for a period of 12 months from the date of commissioning.

**Annexure-A**

**Scope of Supply - List of Equipment**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Description** | **Appendices #** |
| 1 | CFR Engine ASTM D-2699, D-2700 | I |
| 2 | Cone Penetration of Lubricating Grease ASTM D-217 (Automated) | II |
| 3 | Dropping Point of Lubricating Grease ASTM D-566 Automatic | III |
| 4 | Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor pressure tester) ASTM D-1267 | IV |
| 5 |  Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657  | V |
| 6 | Wax Content UOP-46 | VI |
| 7 | Insulating Liquids breakdown voltage determination IEC-60156 | VII |

**Annexure-B**

**Format for Covering Letter**

To

The Project Director - KLC

HDIP, Plot No 18, Street 6, H-9/1

Islamabad

Sub: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Dear Sir,

1. Having examined the tender document and Annexures/Appendices we, the undersigned, in conformity with the said document, offer to provide the said items on terms of reference to be signed upon the award of contract for the sum indicated as per financial bid.
2. We undertake, if our proposal is accepted, to provide the items/services comprise in the contract within time frame specified, starting from the date of receipt of notification of award from the client Department / Office.
3. We agree to abide by this proposal for the period of 120 days (as per requirement of the Tender Document) from the date of bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
4. We agree to execute a contract in the form as communicated by HDIP, incorporating all agreements with such alterations or additions thereto as may be necessary to adapt such agreement to the circumstances of the standard.
5. Unless and until a formal agreement is prepared and executed this proposal together with our written acceptance thereof shall constitute a binding contract agreement.
6. We understand that you are not bound to accept a lowest or any bid you may receive, not to give any reason for rejection of any bid and that you will not defray any expenses incurred by us in bidding.
7. We would like to clearly state that we qualify for this work as our company meets all the pre-requisites/criteria indicated on your tender document.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Authorized Signatures

 With Official Seal

**Annexure-C**

**Undertaking For Acceptance of Terms & Conditions**

It is certified that the information furnished here in and as per the document submitted is true and correct and nothing has been concealed or tampered with. We have gone through all the terms and conditions of tender and hereby agree with the same and are liable to any punitive action for non-compliance of any clause or for furnishing false information / documents.

Dated this \_ day of \_\_\_\_\_\_ 2022

 Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 In the capacity of

 (Company Seal)

Duly authorized to sign bids for and on behalf of:

**Annexure-D**

**PRICE FORMAT**

**TENDER # HDIP/Proj/KLC(21)/2022**

**FOR THE EQUIPMENT AS DETAILED IN APPENDICES I -VIII**

**Note:** Prices should be quoted separately for each item. For each Appendices, a separate page should be used clearly mentioning the Appendices No. (e.g. Appendices-I, II or so) of the equipment on it. The Quoted prices be on F.O.R HDIP Karachi.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sr. No | Item Description | Unit Price (Excluding all taxes) | Total Taxes | Unit Price (Including all Taxes) | Total Cost(No. of Units × Units price Including all taxes) |
|  |  |  |  |  |  |

Total Cost (in Words): Rs.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Place \_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of authorized person

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Company Seal)

**Note: No cutting or overwriting is allowed. Any cutting or overwriting will lead to rejection of the financial bid.**

**Annexure-E**

**A F F I D A V I T**

(To be printed on Rs 100 Stamp Paper and attached with Technical bid)

I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ S/o \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_aged

\_\_\_\_\_\_\_\_\_\_\_ Years \_\_\_\_\_\_\_\_\_\_\_\_ working as Proprietor/Managing Partner/Director of

M/s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ having its registered office at\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ do hereby solemnly affirm and declare on oath as under:

1. That I am competent to swear this affidavit being proprietor/one of the partners/ Director of M/s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. That M/s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a proprietorship/partnership firm/company is participating in tender process conducted by HDIP.
3. That I hereby confirm and declare that none of my/our group/sister concern/associate company is participating / submitting this tender.
4. That I hereby confirm and declare that my/our firm/company M/s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and my/our firm/group/company/ sister concern / associate company or any of its directors have not been black listed/de-listed by any Institutional agencies/Govt. Deptt/ Public Sector Undertaking.

DEPONENT

Verified at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that the contents of this affidavit are true and correct to best of my knowledge and no part of this is false and nothing material has been concealed or falsely stated therein.

(Signature of the Proprietor/ Managing Partner/ Director with Seal)

DEPONENT

(Signature & Seal of Notary)

##### Annexure - F

##### Draft Agreement

#### NO. HDIP/Proj/KLC(21)/2022: FOR THE PROCUREMENT OF

#### LABORATORY EQUIPMENT/APPARATUS.

This agreement is executed on the day of -----------2022 A.D. at Islamabad, Pakistan between Hydrocarbon Development Institute of Pakistan, having its Office at Plot No.18, Street-6, H-9/1, Islamabad Pakistan represented by its Project Director - KLC, hereinafter called the **“HDIP”** which expression, where the context so permits, shall include its successors and assigns of the **FIRST PARTY;**

**AND**

**M/S** -------------------------------------------------------------------------------------------------------------(*a sole proprietary firm/a registered firm/private limited company*) represented by Mr.-------------------------------------------------------------- hereinafter called the **“Supplier”** which expression, where the context so permits shall include its successors and assigns of the **SECOND PARTY.**

WHEREAS, HDIP/First Party is purchasing ---------------------------------------------------------------------------------------- as detailed in the “Scope of Supply” Appendices I to VIII attached hereto for its Laboratories at Islamabad and/or any other station mentioned/indicated.

WHEREAS, the Second Party declared as successful bidder as per **Bid No.**--------------------------**dated**------------------- **(Technical Bid)** and **Bid No.**-------------------------**dated**--------------------- **(Financial Bid)** against HDIP’s Tender Enquiry No. HDIP/Proj/KLC(21)/2022 for supply of required Laboratory Equipment/Apparatus.

The Second Party agrees to supply of -----------------------------------------------------------------------------------------------------------------------------and the other items, in accordance with the Contract Documents.

**NOW THEREFORE HDIP AND SUPPLIER MUTUALLY AGREE AS FOLLOWS:**

**ARTICLE-I - DEFINITIONS:**

In the agreement where the context so admits the following words and expression have the following meanings:-

**AGREEMENT/CONTRACT:**

Means this Agreement including attached Annexures, Appendices, etc. and

TENDER DOCUMENT No.HDIP/Proj/KLC(21)/2022 dated--------------------

**BID PROPOSAL:**

Means the documents prepared and submitted by Second Party in terms of requirements of the Tender Documents:

 Technical Bid Proposal No. -------------------------------**dated**----------------------

 Financial Bid Proposal No. --------------------------------**dated**----------------------

Supplemented by amendments/modifications/clarifications listed below:-

1. **Clarification** --------------------- **dated** ----------------- **(detail attached)**
2. **Clarification** --------------------- **dated** ----------------- **(detail attached)**
3. **Clarification Email No.** --------------- **dated** --------- **(detail attached)**

**CONTRACT DOCUMENTS:**

Means the following documents:

* + This Agreement
	+ Conditions of Contract
	+ Tender Document No. HDIP/Proj/KLC(21)/2022including Annexures, Appendices, enclosures, etc.
	+ Bid/Proposals Technical & Financial including enclosures/annexures
	+ Letter of Intent dated ------------ (if any)
	+ Notwithstanding anything contained in the contract documents. To the extent of any conflict between this agreements including enclosures/annexures/appendices hereto and the Tender Documents and the Bid/Proposal the Agreement shall-prevail.

**ARTICLE-II - OBLIGATIONS OF HDIP:**

That the First Party agrees to pay the Second Party as per Conditions of Contract and Purchase Order.

**ARTICLE-III - MUTUAL OBLIGATIONS:**

The First Party and the Second Party mutually agree to perform, fulfill, abide by and submit to any or all of the provisions and requirements and all materials and things contained or expressed in, or reasonably inferred from these Contract Documents.

**ARTICLE-IV – SUPPLY OF LAB. EQUIPMENT Laboratory Equipment e.g.** CFR Engine ASTM D-2699, D-2700, Cone Penetration of Lubricating Grease ASTM D-217 (Automated), Dropping Point of Lubricating Grease ASTM D-566 (Automatic), Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor Pressure Tester) ASTM D-1267, Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657, Wax Content UOP-46, Insulating Liquids breakdown voltage determination IEC-60156. The Second Party shall supply the --------------------------------------------------------------------------------------------------------------------------------- as detailed in the “Scope of Supply” **Annexure-A** & Appendices**- I to VII,** hereof in accordance with the Contract Documents as per delivery schedule within ***08 weeks*** from the date of issuance of Purchase Order.

**ARTICLE-V - INSPECTION AND TEST:**

The Inspection and Tests required are described in the Tender Document & Purchase Order.

**ARTICLE-VI - CONTRACT PRICE AND PAYMENT:**

The HDIP/First Party shall pay to the Second Party in the manner and the time here set forth a total of ----------------------- **(**------------------------------------------------**)** including GST on FOR (By Air) basis at HDIP Office mentioned in the list or any other station mentioned in the supply order hereinafter referred to collectively as “Contract Price” which will compensate the Second Party for the goods and materials supplied and services rendered as set forth in the contract documents. Payment equivalent to 100% of the contract price shall be made by HDIP/First Party to Second Party upon submission of following shipping documents of each shipment, as a whole or as a part of the goods:-

* 1. Original detailed Invoice showing commodity description, quantity unit price, total price etc.
	2. Packing List.
	3. Certificate and list of measurements and weight gross/net.
	4. Mill Inspection/Quality Certificate / IQ, OQ, PQ.
	5. Warranty Certificate.
	6. Technical Catalogue/Literature etc.
	7. Certificate of Origin.
	8. Upon successful Installation and Commissioning of Equipment in HDIP’s Labs.
	9. After providing Operation and Maintenance Training to HDIP’s professionals/staff.
	10. Performance Guarantee valid for 12 months from the date of commissioning.

The Second Party would be responsible for installation and commissioning of the equipment, consumables, spares & accessories, if required, along with a certificate issued to this effect.

**ARTICLE-VII - CORRESPONDENCE:**

All correspondence called for by the terms of this Agreement shall be effective only at the time of receipt thereof and only when received by the parties to whom they are addressed at the following:

Project Director - KLC
Hydrocarbon Development Institute of Pakistan,
Plot No.18, Street-6, H-9/1, Islamabad, Pakistan
Phone: +(92-51) 926-5234, 926-5237, Fax: +(92-51) 926-5228

**M/S**

**Phone #**

**Fax #**

All correspondence called for by the terms of this agreement shall be in the form of registered letters, telefax and courier service, written in the English Language.

**ARTICLE-VIII - TECHNICAL DOCUMENTS AND CATALOGUES**

The equipment shall be supplied with two (2) hard copies of technical documentation, drawings, literature, catalogues and operational manuals.

**ARTICLE-IX - COMMISSIONING:**

The equipment will be commissioned under the supervision of Second Party’s Installation Engineer(s) at HDIP Islamabad and/or any other station mentioned in the supply order to the satisfaction of HDIP/First Party at no cost to pay. Any consumables/material required for Commissioning will be provided free of cost.

|  |  |
| --- | --- |
| ***For and on behalf of “SUPPLIER”*** ------------------------**M/s** |  ***For and on behalf of “HDIP”***------------------------**Project Director - KLC****HDIP, Plot No.18, Street No.6,****Sector H-9/1, Islamabad.** |

**Annexure - G**

**Hydrocarbon Development Institute of Pakistan**

**CONDITIONS OF CONTRACT**

1.0 **DEFINITIONS**1.1 **Terms**

a) “HDIP” means the organization acquiring services/goods i.e. Hydrocarbon Development Institute of Pakistan.

b) “Applicable Law” means the law and any other instruments having the force of law in the Islamic Republic of Pakistan, as they may be issued and in force from time to time.

c) “Contract” means the agreement entered into between First Party and Second Party and signed by both the parties, including all enclosures/annexures/appendices and attachments thereto and all documents incorporated by reference therein.

d) “Contract Price” means the price payable to the Second Party under the agreement for the full and proper performance of his construal/contractual obligations.

e) “FOR”, has the meaning assigned to them the International Rules for the interpretation of trades Terms (INCOTERMS).

f) “Laboratory equipment e.g. CFR Engine ASTM D-2699, D-2700, Cone Penetration of Lubricating Grease ASTM D-217 (Automated), Dropping Point of Lubricating Grease ASTM D-566 (Automated), Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor Pressure Tester) ASTM D-1267, Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657, Wax Content UOP-46, Insulating Liquids breakdown voltage determination IEC-60156 means all equipment and materials including tools and/or other materials and services, which the Second Party is required to supply/provide to Fist Party under the agreement.

g) “First Party” means the organization purchasing the goods i.e. Hydrocarbon Development institute of Pakistan.

h) “Second Party” means the firm or company supplying the goods/equipment under the agreement.

**2.0 PATENT RIGHTS.**

2.1 The Second Party shall indemnify and hold First Party harmless against all third party claims infringement of patent, trademark or industrial design rights arising from use of goods or any party thereof.

**3.0 APPLICABLE LAW**

3.1 The agreement shall be interpreted in accordance with the law applicable in the Islamic Republic of Pakistan and suits/cases, if any; the Islamabad Courts have only the jurisdiction to entertain.

**4.0 PRICES AND PAYMENTS**

4.1 The Second Party will be paid in Currency in Pak Rupees.

4.2 100% payment shall be made upon completion of supply, installation/ commissioning of equipment and operator/maintenance training of First Party’s professionals & staff and meeting of other obligations (if any) .

**5.0 TAXES AND DUTIES.**

5.1 The Second Party shall be entirely responsible for all taxes, duties, license fees and other such levies imposed within and outside Pakistan on goods/equipment and services being supplied/provided.

**6.0 PERFORMANCE BOND**

6.1 Within fifteen (15) days after receipt of bid acceptance, the Second Party shall furnish Performance Bond to HDIP equivalent to 5% of the contract price in Pak Rupees. The Second Party shall establish such Bank Guarantee/Deposit at Call in favour of HDIP in accordance with Annexure-H. The guarantee shall be issued by a bank acceptable to First Party having validity for the warranty period. The expenses incurred in obtaining the bank guarantee shall be borne by the Second Party. The performance bond shall be denominated in the currency of the bid.

6.2 The performance bond shall be a type of guarantee for the faithful performance of the Second Party’s obligations under the agreement and proceeds of the performance bond shall be payable to Second Party as compensation for any loss resulting from the Second Party failure to complete its obligations under the Agreement.

6.3 The performance bond shall be discharged by HDIP and refunded to the Second Party not later than 30 days following the date of completion of the Second Party performance obligations, including any warranty obligations, under the Contract.

6.4 The Second Party may, at its discretion, accept the performance bond in a currency other than the currency of bid owing to significant reasons.

7.0 **INSPECTION AND TESTS**

* 1. Second Party shall have the right to inspect and/or test the equipment to confirm their conformity to the Agreement. The inspections and tests may be conducted at the premises of the Second Party, at the point of delivery and/or the equipment’s final destination. Should any inspected or tested equipment fails to conform to the specifications, First Party may reject them and the Second Party shall either replace the rejected equipment or make all alterations to meet specification requirement free of cost to First Party.
	2. First Party shall have the right to inspect, and where necessary, reject the equipment after equipment’s arrival in the Purchaser’s country shall in no way by reason of the equipment having previously been inspected, tested and passed by the First Party’s representative prior to equipment’s shipment from the country of origin.
	3. Nothing in this clause shall in any way release the Second Party from any warranty or other obligations under this agreement.
1. **WARRANTY/PERFORMANCE GUARANTEE(S)**
	1. The Second Party warrants to HDIP that the goods supplied under the agreement shall be new (and not refurbished), comply strictly with the agreement and care fit for their intended purpose and shall have no defect arising from design, materials or workmanship or from any act or omission of the Second Party, that may develop under normal use of the supplied items under the conditions prevailing at the site.
	2. The Second Party shall provide performance guarantee that the supplied equipment shall perform in required conditions stated in the tender document.
	3. This performance guarantee(s) warranty shall remain valid for Twelve (12) months after the equipment has been delivered and commissioned.
	4. HDIP/First Party shall promptly notify the Second Party in writing of any claims arising under this Warranty/Guaranty. Upon receipt of such notice, the Second Party shall, with all reasonable speed, repair or replace the defective equipment or parts thereof, without cost to HDIP/First Party.
	5. If the supplier fails to provide remedy of the defect(s) within a reasonable period after the writing, First Party may proceed to take such remedial action as may be necessary, at the Second Party’s expense without prejudice to any other rights witch First Party may have to the Second Party under the Agreement.
2. **PACKING AND MARKING**
	1. The Second Party shall provide packing (air freight/road transport) of the equipment to prevent their damage or deterioration during transit to their final destination as indicated in the Agreement. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the equipment’s final destination and the absence of heavy facilities at all point’s in transit.
	2. The packing list shall be drawn up in accordance with agreement provisions. In general there shall be:-
	* One copy of packing list placed in waterproof envelope outside each package. The envelope shall be protected by means of a metal plate firmly fixed.
	* In the case of closed packages, one copy of the list placed inside each package in a waterproof envelope adequately attached.
	* The packing list will cover each and every secured marking corresponding to the packing list.
	1. The marking shall appear at least on 4 sides of container/crates shipped under this agreement.

10.0 **DELIVERY AND ITS DOCUMENTATION**

10.1 The Second Party shall arrange for delivery as per schedule. Upon each shipment of the whole or part of the goods six (6) copies of the following documents shall be submitted by the Second Party:-

 - Original Clean Airway Bill.

* + Original detailed Invoice showing commodity description, quantity unit price and total price etc.
	+ Packing list.
	+ Certificate and List of Measurements and Weights Gross/Net.
	+ Mill Inspection/Quality Certificate.
	+ Warranty Certificate
	+ Technical catalogue/literature etc.
	+ Certificate of Origin
	+ Operation and Maintenance Manuals.
1. **DELAYS IN THE SUPPLIER’S PERFORMANCE**

10.1 Delivery of the Laboratory Equipment e.g. CFR Engine ASTM D-2699, D-2700, Cone Penetration of Lubricating Grease ASTM D-217 (Automated), Dropping Point of Lubricating Grease ASTM D-566 (Automatic), Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor Pressure Tester) ASTM D-1267, Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657, Hydrometers, Wax Content UOP-46, Insulating Liquids breakdown voltage determination IEC-60156 and performance of the services shall be responsibility of Second Party in accordance with the delivery schedule specified in the Agreement.

* 1. An unexcused delay by the Second Party in the performance of its delivery obligations shall render the Second Party liable to any or all the following sanctions:
* Forfeiture of its performance security.
* Imposition of its liquidated damages.
* Termination of Agreement for default.
* Procurement of the items at the Risk & Expense of the Second Party.
* Blacklisting of the Firm.

12.0 **LIQUIDATED DAMAGES IN CASE OF DELAY**

12.1 Subject to Article 12, if the Second Party fails to deliver any or all of the Equipment or do not perform the Services within the time period(s) specified in the Agreement, First Party shall, without prejudice to its other remedies under the agreement deduct from the Contract Price, as liquidated damages, a sum equivalent to one tenth of one percent (0.1%) of the Contract Price for each day of delay. The liquidated damages to be paid by the Second Party to First Party on account of delay in delivery of equipment shall not exceed 0.1% to 5% of the contract Price. Once the maximum is reached, First Party may consider termination of the agreement and initiation of action(s) in line with Clause 11.2 above.

* 1. If the goods fail to meet any performance figure guaranteed in the Agreement, then the Second Party shall be given a reasonable opportunity to carry out on its own expense any work which it considers necessary to achieve the guaranteed figure, including where necessary the modification of the goods or any part of them. If after repeated performance tests the equipment is unable to meet the guaranteed figures the Second Party shall be liable to pay liquidated damages @ 10% of Contract Price.

13.0 **TERMINATION FOR DEFAULT**

* 1. First Party may, without prejudice to any other remedy for breach of agreement, by written notice of defaults sent to the Second Party terminate the agreement and initiate action(s) in line with Clause 11.2 above:
	+ If supplier fails to deliver any or all the equipment within the time period(s) specified in the agreement or any extension thereof granted by HDIP/First Party the agreement will be terminated.
	+ If Second Party continuously fails to perform any or all other obligation(s) under the Agreement.

**14.0 FORCE MAJEURE**

14.1 In the event of either partly hereto being rendered unable, wholly or in part, by Force Majeure Circumstances to carry out its obligations under this Agreement, then on such party giving notice and full particulars and other satisfactory evidence of such Force Majeure circumstance(s) relied upon, the obligations of the party giving such notice so far as they are affected by such Force Majeure shall be suspended for the period during which party is rendered unable as aforesaid, but for no longer period. The term ‘Force Majeure as employed herein, shall mean Acts of God or public enemy, civil insurrection, fires, floods earthquakes or other physical disasters, order or request of the government, blockade or embargo. It is, however, clarified that strikes, lockouts, shortage or no-availability of raw materials, rains, disturbances, other labor disputes or congestions of ports shall not be covered in the term “Force Majeure”. It is further clarified that during the established period of ‘Force Majeure’ as contained herein above, neither Second Party would be entitled for payment nor the First Party would impose penalty as required under this Agreement.

* 1. In case of ‘Force Majeure’ contingencies last continuously for more than one month, both parties will agree on the necessary arrangements for the further implementation of the agreement. In case further implementation is unforeseeable and impossible, both parties shall arrange for the termination of the Agreement, but without prejudice to the rights and obligations prior to such termination it is being understood that each party shall fulfill its contractual obligations so far as they have fallen due before the operations of Force Majeure.

**15.0 RESOLUTION OF DISPUTES**

15.1 In case of any dispute arising out of the Agreement between the parties the matter will be referred to the *Secretary, Ministry of Energy (Petroleum Division) Government of Pakistan*, who shall be the Sole Arbitrator and his decision shall be the final and binding on the parties and shall not be called in question in any Court of Law.

 **Annexure-H**

**PERFORMANCE BOND**

Hydrocarbon Development Institute of Pakistan,

Operations Office, Plot No.18, Street-6, H-9/1,

Islamabad

WHEREAS (hereinafter called “Supplier) has undertaken in pursuance of the Agreement No.

Dated to supply Laboratory Equipment e.g. CFR Engine ASTM D-2699, D-2700, Cone Penetration of Lubricating Grease ASTM D-217 (Automated), Dropping Point of Lubricating Grease ASTM D-566 (Automatic), Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor Pressure Tester) ASTM D-1267, Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer ASTM D-1657, Wax Content UOP-46, Insulating Liquids breakdown voltage determination IEC-60156 (hereinafter called the “Agreement”).

AND WHEREAS it has been stipulated by you in the said Agreement that the Contractor shall furnish you a bank guarantee for a sum of as security for compliance with the Contractor’s performance in accordance with the contract.

AND WHEREAS WE (the name of the Guarantor Bank with complete address) hereby irrevocably and unconditionally guarantee the payment of Rs……………………. to you and accordingly covenant and agree as follows.

1. Upon your first and simple demand in writing we (the name of the Guarantor Bank with complete address) shall immediately and forthwith pay you the full amount of guarantee without any recourse/reference to Contractor/account Partly or any other party and without any question, contestation deferment and without asking for any statement of default, reason justification whatsoever in nature.
2. Any payment made hereunder shall be made free and clear of, and without deduction for or on account of, any present or future taxes, levies of import duties, charges, fees, deductions, or withholdings of any nature whatsoever and by whosoever imposed.

The covenants herein contained constitute unconditional and irrevocable direct obligation of the Guarantor. No alternation in the terms of the Contract or in the extent or nature of the work to be performed there-under no allowance of time by you or other forbearance or concession or any other act or omission by you which but for this provision might exonerate or discharge the Guarantor shall in any way release the Guarantor from any liability hereunder.

1. The Guarantee shall remain valid in full force effect up to or issue of statement of discharge by your authorized representative or return of original guarantee whichever is later.
2. This Guarantee shall be binding on us and our successors in interest.
3. This Guarantee is governed by and shall be constructed in accordance with laws and regulations of Islamic Republic of Pakistan.

FOR AND ON BEHALF OF

(Authorized Signature & Seal)

………………………………..

(GUARANTOR BANK)

………………………………..

Date………………………….

 Address…………………

**Annexure-I**

**TECHNICAL SPECIFICATIONS COMPLIANCE SHEET**

**FOR THE EQUIPMENT:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **AS DETAILED IN APPENDICE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Note for Strict Compliance:** *All Technical Specifications of the respective item must be mentioned in the table below, duly indicating* ***Compliance (Yes/No)*** *against each. For each Item/Appendice, a separate page should be used clearly mentioning the Appendices No. (e.g. Appendices-I, II or so) and the equipment name on it.* ***Bid(s) will be declared Disqualified and will be rejected if this Compliance Sheet is not provided for every quoted item separately****. Any Spec(s)/Parameter(s)/Column/Row left blank will be considered as* ***Non-Compliant****, which will contribute to Qualification or otherwise of the quoted item.*

|  |  |  |
| --- | --- | --- |
| **TECHNICAL SPECIFICATIONS**(Covering all given parameters) | **COMPLIANT****(Yes/No)** | **REMARKS** |
| **Sample Compliance Sheet (Duly Filled) given on Next Page** |  |  |

Supplementary Note(s):

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Place \_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of authorized person

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Company Seal)

**Note: No cutting or overwriting is allowed. Any cutting or overwriting will lead to rejection of the bid.**

**SAMPLE - TECHNICAL SPECIFICATIONS COMPLIANCE SHEET**

**EQUIPMENT: Portable Octane Tester (ASTM D2699 and D2700)**

|  |  |  |
| --- | --- | --- |
| **TECHNICAL SPECIFICATIONS**(Covering all given parameters) | **COMPLIANT**(Yes/No) | **REMARKS** |
| Measures all grades of unleaded gasoline  |  |  |
| **Detection Range:** Octane number range from 75 to 99.9 |  |  |
| Displays results in 20 seconds Built-in printer and LCD display |  |  |
| Directly measures octane number for {(R+M)}/2, RON and MON |  |  |
| Includes RS-232/USB output, Printer Attachment Option |  |  |
| Results traceable to official knock engine laboratory |  |  |
| HMI (Touch or Water Proof Press/Push Buttons) |  |  |
| **Accuracy:**  +/-0.1 RON |  |  |
| **Operating conditions:** Ambient temperature: from +5°C to +40°C, Humidity: 80%, |  |  |
| Battery operated |  |  |
| Operational Training (Hands on) |  |  |
| **Standard Accessories:** As per ASTM method. |  |  |
| Standards and Certified Reference Material with certificates as per ASTM Method.  |  |  |
| **Validation Program**: Complies with ASTM, Calibration certificates, Real Time IQ, OQ, PQ required at time of I&C |  |  |
| Periodic Maintenance/service/user Manuals with schematics (electronic/pneumatic) soft and hard copy. |  |  |
| **Spares and Consumables:** OEM recommended spares and consumables for 2 years moderate operation (Separate Price from the essential Accessories and equipment needed for unit operation.) |  |  |
| **Warranty:** one year for parts and service |  |  |

Supplementary Notes:

Signature of authorized person

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Place \_\_\_\_\_\_\_\_\_\_\_\_\_ (Company Seal)

**Note: No cutting or overwriting is allowed. Any cutting or overwriting will lead to rejection of the**

**APPENDIX-I**

**CFR Engine ASTM D-2699, D-2700**

* Digital Detonation Knock Metering Control Panel / Touch HMI
* Reference Fuel Dispensing System (240V, 50Hz) (Four(4) 200ml calibrated burettes & pumps, probes, flex hose assemblies, Hands free operation mechanism, flow control dispensing valves with drip-less spouts, SS fittings, Intrinsically Safe electrical Switching, Non-breathing drum probe assemblies)
* Complete CFR Crankcase, Exhaust manifold, Surge Tank, Belt Guards, Comp Ratio Change motor, Switch for power compression ratio changer.
* Digital Ignition Timing Indicator/Tachometer, Complete power supply solution with transformer & Phase reversal protection (Engine rotation only single side).
* Electronic Barometer.
* 380 V 50hz 3-phase reluctance type synchronous motor
* 120V 50Hz Single phase heater and metering instruments.
* Two Year Spare Parts including cylinder top/Crankcase overhaul kits.
* Detonation Knock Meter Basic Panel replacement Spare parts with Pickup Qty:1 each
* Research Motor Assembly Tools.
* Advanced infrared laser displacement sensor detection accuracy (compression ratio display accuracy): 0.001.
* The detection range of crankshaft angle: 720±0.1°, automatically read by the PC, and automatically displayed in real time.
* Range of measurement 40~120.
* Inner diameter of cylinder 82.55mm.
* Piston stroke 114.3mm.
* Range of compression ratio 4:1~18:1.
* Rotate speed of engine 900 ±9r/min (MON),600 ±6r/ min (RON)
* Reference Grade Fuel ASTM ( ISO Octane, n-Heptane, 80 Octane, Toluene >30 Gallons each).
* **Validation Program:** Complies with ASTM, Calibration certificates, Real Time IQ, OQ, PQ required at time of I&C
* **Installation/Commissioning Operational Training** (Hands on ) on-Site.
* Periodic Maintenance/service/user Manuals with schematics (electronic/pneumatic) soft and hard copy.
* **Spares and Consumables:** OEM recommended spares and consumables for 2 years moderate operation (Separate Price from the essential Accessories and equipment needed for unit operation.)
* **Warranty:** One year for parts and service

**APPENDIX-II**

**Cone Penetration of Lubricating Grease ASTM D-217 (Automated)**

**Penetrometer:** The instrument shall be capable of indicating depth in tenths of a millimeter.

**Standard Penetrometer Cone:** Standard Cone, for measuring penetrations up to 475, consisting of a conical body of magnesium or other suitable material with detachable, hardened steel tip.

**Optional Cone,** for measuring penetrations up to 400, consisting of a conical body of brass or corrosion-resistant steel with detachable, hardened steel tip.

**Grease Worker,** comprising a grease cup, cover, and plunger assembly, in accordance with method, constructed for either manual or mechanical operation.

**Grease Worker Drive,** Motorized, in accordance withA1.6, which allows for working the grease at a rate of 60 ± 10double strokes per minute.

 **Grease Cutter,** in accordance with A1.7, is used for preparation of samples for block penetration.

**Temperature Bath,** capable of controlling the bath temperature at 25 ± 0.5°C (77 ± 1°F) and designed to bring the assembled grease worker to test temperature conveniently.

**Spatula,** corrosion-resistant, having a stiff blade nominally32 mm (1.25 in.) wide and at least 150 mm (6 in.) long.

**Temperature-Measuring Device,** with a sheath length of approximately 200 mm (8 in.) and a sheath diameter of approximately 3.7 mm (0.145 in.) (Small enough to fit through the vent cock). The temperature range of the device should be wide enough to allow it to be immersed in grease at approximately38°C (100°F) without damage. The scale should have small enough divisions (or digital resolution) to allow the user to read 60.5°C (61°F). A spacer can be applied to the upper portion of the sheath to hold the tip just above the perforated plate of the grease worker and in the bulk of the sample (seeA1.3).

**Overflow Ring (optional),** in accordance with A1.8, is a useful device for catching grease scraped from the sample surface as well as any grease forced by the penetrometer cone to overflow from the cup. This grease can be returned to the worker cup for subsequent testing.

**Appropriate Volatile Gum-free Solvent,** for example, light petroleum naphtha.

**Cloth or Paper Wiper,** for wiping grease from the penetrometer cone. The wiper should be soft, so as not to scratch the cone.

**Standard Accessories and Reagents:** As per ASTM method.

**Standards & Certified Reference Material with certificates**

Vendor should quote only latest models with Exact Model Name with O.E.M traceable online official website, Obsolete or about to obsolete models will be rejected straight, without giving any reason.

Spares & Consumables: OEM recommended spares and consumables for 2 years moderate operation (Separate Price from the essential Accessories and equipment needed for unit operation.)

Vendor must provide printed IQ, OQ, PQ real time validations apart from O.E.M Calibrations certificates, during installations.

**Maintenance/service/user Manuals with schematics (electronic/pneumatic/Hydraulics)**

**Spares and Consumables:** For two years

**Warranty:** One year for parts and service

**APPENDIX-III**

**Dropping Point of Lubricating Grease ASTM D-566 Automatic**

**Maximum Temperature:** 550°F (288°C)

* Aluminium heating block with test tube jacket.
* Stainless steel heater.
* Water cooling system: to cool down the heating block at the end of the analysis. The cooling cycle is automatically started when a drop is detected.

The cooling time is programmable via PC.

* Software characteristics: selection of the ASTM test method, possibility to change the setpoint during the test, selectable cooling time, storage of test results and print test reports,
* Safety alarm.
* Dropping point detector based on a photocell system.

**Standard Accessories and Reagents:** As per ASTM method.

**Operational Training (Hands on)**

**Standards &Certified Reference Material with certificates**

Vendor should quote only latest models with Exact Model Name with O.E.M traceable online official website, Obsolete or about to obsolete models will be rejected straight, without giving any reason.

Spares & Consumables: OEM recommended spares and consumables for 2 years moderate operation (Separate Price from the essential Accessories and equipment needed for unit operation.)

Vendor must provide printed IQ, OQ, PQ real time validations apart from O.E.M Calibrations certificates, during installations.

**Maintenance/service/user Manuals with schematics (electronic/pneumatic/Hydraulics)**

**Spares and Consumables:** For two years

**Warranty:** One year for parts and service

**APPENDIX-IV**

**Gauge Vapor Pressure of Liquefied Petroleum Gases (Vapor pressure tester)**

**ASTM D-1267**

The chambers shall conform to the requirements as furnished in the standard, pressure tested and certified to 6920kPa (1000psi). Pressure Gauge: 0-3500kPa

Pressure Gauge: 0-700kPa

Pressure Gauge: 0-1750kPa

Water Bath: temperature controlled, of a size suitable for measuring device.

Temperature measuring device: of verified accuracy and capable of monitoring the desired test temperature in the water bath in the range of 35 to 70°C to within ±0.1°C.

Dead Weight Tester: of suitable range to check the accuracy of vapor pressure gauge.

Automatic Stirring

**Standard Accessories:** As per ASTM method.

Calibration Standard and Certified Reference Material with certificates.

**Operational Training (Hands on)**

**Maintenance/service/user Manuals with schematics (electronic/pneumatic/Hydraulics)**

Vendor should quote only latest models with Exact Model Name with O.E.M traceable online official website, Obsolete or about to obsolete models will be rejected straight, without giving any reason.

Spares & Consumables: OEM recommended spares and consumables for 2 years moderate operation (Separate Price from the essential Accessories and equipment needed for unit operation.)

Vendor must provide printed IQ, OQ, PQ real time validations apart from O.E.M Calibrations certificates, during installations.

**Spares and Consumables:** For two years

**Warranty:** One year for parts and service

**APPENDIX-V**

**Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer**

**ASTM D-1657**

**Thermo hydrometer:** Density range 500 to 650 kg/m3

**Hydrometer Cylinder:** transparent plastic, conforming to the design and dimensions mentioned in the method. The cylinder shall not be operated at a gage pressure greater than 200 psi **Thermometer:** ASTM 12C or 12F.

**Constant Temperature Bath:** temperature control system capable of maintaining the bath temperature within 0.25°C of the test temperature throughout the duration of the test.

Temperature digital display and cooling coil to be connected to external circulating cooling unit to operate at 15°C±0.2°C.

**Chiller**: (-20 to 60°C)

**Reference Liquids: Propane,** pure grade, having a nominal density of 507.6 kg/m3 at 15°C or a relative density 60/60°F of 0.50699.

**Butane:** pure grade, having a nominal density of 584.1 kg/m3 at 15°C or a relative density 60 /60°F of 0.5840.

**Pressure guage:** 0 to 350psi

**Standard Accessories and Reagents:** As per ASTM method.

Calibration Standard and Certified Reference Material with certificates.

**Operational Training (Hands on)**

**Maintenance/service/user Manuals with schematics (electronic/pneumatic/Hydraulics)**

Vendor should quote only latest models with Exact Model Name with O.E.M traceable online official website, Obsolete or about to obsolete models will be rejected straight, without giving any reason.

Spares & Consumables: OEM recommended spares and consumables for 2 years moderate operation

(Separate Price from the essential Accessories and equipment needed for unit operation.)

Vendor must provide printed IQ, OQ, PQ real time validations apart from O.E.M Calibrations certificates, during installations.

**Spares and Consumables:** For two years

**Warranty:** One year for parts and service

**APPENDIX-VI**

**Wax Content UOP-46**

* Apparatus.
* Balance
* Cold Filter funnel
* Crucibles, Gooch, 2A
* Flask, Erlenmeyer, 1-Liter
* Flasks, Filtering, 500 and 1000-ml
* Steam bath
* Vacuum pump
* Weighing flask or beaker, 100-ml

**REAGENTS:**

* Acetone, CP (dry)
* Asbestos, Gooch grade
* Fuller’s earth, or similar clay (dry)
* Petroleum naphtha, straight-run, boiling range 90-150 F
* **Validation Program:** Complies with ASTM, Calibration certificates, Real Time IQ, OQ, PQ required at time of I&C
* **Installation/Commissioning Operational Training** ( Hands on ) on-Site.
* Periodic Maintenance/service/user Manuals with schematics (electronic/pneumatic) soft and hard copy.
* **Standard Accessories and Reagents:** As per ASTM method.

 **Standards & Certified Reference Material with certificates**

* **Spares and Consumables:** OEM recommended spares and consumables for 2 years moderate operation
* **Warranty:** One year for parts and service

**APPENDIX-VII**

**Insulating liquids breakdown voltage determination IEC-60156**

Automatic test sets determine the electrical insulating properties and mean breakdown voltages of oils and others fluids used in transformers, switchgear and similar applicators.

**AUTOMATIC OIL TESTER. 100KV**

* Automatic test sequence
* Pre-set and user defined programs.
* 100KV models
* Integral printer
* RS232 interface
* Fully interlocked

**SUPPLIED WITH:** 36mm dia , mushroom, 13mm dia, spherical and 1 inch dia. Cylinder electrodes, spacing gauge, spare magnetic stirrer bars, 400ml oil test vessel and instruction manual.

**Standard Accessories and Reagents**

**Operational Training (Hands on)**

**Standards &Certified Reference Material with certificates**

* Vendor should quote only latest models with Exact Model Name with O.E.M traceable online official website, Obsolete or about to obsolete models will be rejected straight, without giving any reason.
* Spares & Consumables: OEM recommended spares and consumables for 2 years moderate operation (Separate Price from the essential Accessories and equipment needed for unit operation.)
* Vendor must provide printed IQ, OQ, PQ real time validations apart from O.E.M Calibrations certificates, during installations.
* **Maintenance/service/user Manuals with schematics (electronic/pneumatic/Hydraulics)**
* **Spares and Consumables:** For two years
* **Warranty:** One year for parts and service