**TECHNICAL PROPOSAL**

Designation and description of test method:

# **LST EN 15446 Fugitive and diffuse emissions of common concern to industry sectors. Measurement of fugitive emission of vapours generating from equipment and piping leaks.**

In view of the qualification and technical requirements provided by the Buyer, the Supplier shall fill in the below tables:

*Table 1*

**Qualification and technical requirements applicable to laboratory equipment**

| **Item No** | **Criterion** | **Requirement [specify]** | **Information provided by Supplier** |
| --- | --- | --- | --- |
| 1. | Qualification of Supplier’s employees | Provide documented information that the Supplier's employees or those of its subcontractors have been properly trained to commission the respective equipment. |  |
| 2. | Suitability of equipment for tests according to required test method:  **LST EN 15446 Fugitive and diffuse emissions of common concern to industry sectors. Measurement of fugitive vapour emissions from equipment and piping leaks.**  The manufacturer's certificate shall confirm the compliance of the instrument with the specified standard. | Submit manufacturer's technical documentation or certificate proving that equipment is suitable for tests according to the said test method. |  |
| 3. | Deadline for commissioning | The term for commissioning the equipment is max 60 days. |  |
| 4. | Warranty terms and conditions | Not less than 12 months; provide the terms and conditions for after-sales service for warranty periods longer than 12 months. |  |
| 5. | Supplier's response time during the warranty period. | Response time (arrival at the Refinery if there is no other way of fixing faults) during the warranty period is max 72 hours. |  |
| 6. | Submit equipment safe operation manual (document) in the English/Lithuanian language (preferably in Lithuanian). | Undertake to present the safe operation manual (document) in the English/Lithuanian language (preferably in Lithuanian) together with the supplied equipment. |  |
| 7. | Pre-commissioning/commissioning and training to be provided after the delivery of the equipment. | Undertake to perform pre-commissioning/commissioning and training after the delivery of the equipment. |  |
| 8. | Transfer of information relating to maintenance and repair of equipment to the equipment maintenance technicians of the QA/QC Center after the expiry of the warranty period. | Undertake to submit information relating to maintenance and repair of equipment to the equipment maintenance technicians of the QA/QC Center after the expiry of the warranty period. |  |

*Table 2*

**Special technical requirements applicable to equipment**

| **Item No** | **Characteristics** | **Limit values, UoM [indicated]** | **Limit values, UoM (to be specified by Supplier)** |
| --- | --- | --- | --- |
| 1. | **Equipment type:** | | |
| Automatic | Equipment for measurement of fugitive vapour emissions from equipment and piping leaks.  Portable analyzer for determination of volatile organic compounds (VOC) (0 – 50 000 ppm) according to standard LST EN 15446:2008, with FID detector, replaceable hydrogen kit, high-performance sampling probe, transportation case, battery, battery charger and all other required accessories. Bluetooth connectivity for data transmission.  Ex design. |  |
| Semi-automatic | x |  |
| Manual | x |  |
| **Equipment manufacturer, model:** | Thermo Scientific TVA 2020 |  |
| 2. | Software | Automatically controls the test process, with a standard program for processing and calculating the results. |  |
| 3. | Measuring range, accuracy | Measurement range (0 – 50 000) ppm.  FID detector accuracy ±10% or ±1,0 ppm, whichever is higher. |  |
| 4. | **Sample injection system:** | | |
| Automatic | x |  |
| Separate system | x |  |
| Manual | x |  |
| 5. | Heating/cooling system | x |  |
| 6. | **Connection to other equipment, auxiliaries:** | | |
| Computer | x |  |
| Keyboard | x |  |
| Printer | x |  |
| Computer network via LAN | x |  |
| Wires | Wires with connectors to connect equipment with computer. |  |
| 7. | **Auxiliaries:** | | |
| Spec. set for calibration | Calibration gas and other materials for equipment calibration and verification. Calibration gas must be certified. |  |
| Filter | Any other filters needed for the operation of the equipment. |  |
| Other [specify] | Other auxiliaries not mentioned herein as necessary for tests using the listed equipment. |  |
| 8. | **Calibration and verification:** | | |
| At QA/QC Center | verification using CRM is required. |  |
| Manufacturer’s calibration and CRM verification certificates | calibration certificate |  |
| 9. | A set of spares sufficient for 12 months. | Spares sufficient for 12-months operation of the equipment. |  |
| 10. | Computer | x |  |
| 11. | Printer | x |  |
| 12. | Certified reference material | Methane gas: 1000 ppm; 10 000 ppm  CRM must have certificates with indicated uncertainty. Preference will be given to CRM producers that meet ISO 17034 requirements. |  |
| 13. | **Gas cylinder required (purity class):** | | |
| Air | Less than 10 ppm VOC  HQ high pressure reducer with pressure gauges: HP-300bar, LP-25bar, connection to gas cylinder, ‘Swagelok’ - 6mm outlet, with line closing and venting taps -1 pc, also a low pressure reducer with a pressure gauge: HP-40bar, LP-10bar, ‘Swagelok’ inlet- 6mm, ‘Swagelok’ outlet - 1/8, with a tap for line closing - 1 pcs. Gas connection tubes from stainless steel, copper or PTFE. Other auxiliaries needed to connect gas cylinder to analyzer. |  |
| H2 | HQ high pressure reducer with pressure gauges: HP-300bar, LP-25bar, connection to gas cylinder, ‘Swagelok’ - 6mm outlet, with line closing and venting taps -1 pc, also a low pressure reducer with a pressure gauge: HP-40bar, LP-10bar, ‘Swagelok’ inlet- 6mm, ‘Swagelok’ outlet - 1/8, with a tap for line closing - 1 pcs. Gas connection tubes from stainless steel, copper or PTFE.  Other auxiliaries needed to connect 99.999 % H2 gas supply |  |
| O2. | x |  |
| He | x |  |
| Ar | x |  |
| 14. | **Sampling equipment for:** | | |
| Liquefied petroleum gas | x |  |
| Liquids | x |  |
| Refining gas | x |  |
| Other [specify] | x |  |
| 15. | **Equipment for preparation of test samples:** | | |
| Homogenizer | x |  |
| Shaker | x |  |
| Other [specify] | x |  |
| 16. | **Scales:** | | |
| Micro-analytical | x |  |
| Analytical | x |  |
| Technical | x |  |
| Other [specify] | x |  |
| 17. | **Dimensions:** | | |
| Height | 29.2 cm |  |
| Width | 22.9 cm |  |
| Depth | 10.2 cm |  |
| 18. | Other [specify] | x |  |

*Table 3*

**General information on the offered equipment**

|  |  |
| --- | --- |
| **Information required** | **Information provided by Supplier** |
| Name/model of equipment |  |
| Information about the manufacturer, country of origin, language of the user manuals, passport |  |
| Confirmation that the equipment complies with the requested test method; additional test methods that the offered equipment complies with. |  |
| A summary of the technical/operational characteristics, highlighting the advantages of the offered equipment. |  |

*Table 4*

**Detailed description of the equipment set, additional equipment and auxiliaries.**

**(to be specified by Supplier)**

|  |  |
| --- | --- |
| **Name** | **Quantity, units** |
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*Table 5*

**Recommended set of spares and consumables for 1 year**

**(to be specified by Supplier)**

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| --- | --- |
| **Name** | **Quantity, units** |
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