



INFORMATION SHEET FOR PROCUREMENT OF ANTISCALANT

Reference No.: FNK-I/IUL/2024/100

Issued on 24th April 2024

Issued by:

Fenaka Corporation Limited

Male', Republic of Maldives

Section I: Instruction to Bidders

A. General	
1. Scope of Bid	<p>1.1 Fenaka Corporation Limited requests quotation for procurement of Antiscalant in accordance with <i>Section III, Technical Specifications</i></p> <p>1.2 It is in Fenaka Corporation Limited's discretion to cancel the bid invitation mentioned in 1.1 at any time.</p>
2. Eligible Participants	<p>2.1 Local companies registered in Maldives are eligible to participate in the tender</p> <p>2.2 Foreign companies are eligible to participate in the tender only if the total bid value is above 2,500,000 Maldivian Rufiyaa.</p>
B. Preparation of the Bid	
3. Bid Prices	<p>3.1 The unit price of each item and the total price shall be clearly indicated in the quotation</p> <p>3.2 All the items in a lot shall be quoted by the bidder (please refer to <i>Section III, Technical Specifications/Packing List</i> for the details of required items)</p> <p>3.3 Quotation shall separately indicate the additional charges such as freight charges and insurance.</p> <p>3.4 The bidder shall submit quotation on Doorstep delivery to Fenaka corporation Limited Head office</p>
4. Currency	4.1 The bidder shall quote entirely in Maldivian Rufiyaa
5. Alternative Bids	5.1 Bidders can submit a maximum of two (2) options
6. Validity of Bids	6.1 Quotation shall remain valid for minimum sixty (60) days from the date of bid opening
7. Bid Security	<p>7.1 All bids should be accompanied with a bid security of USD 1,000 (One Thousand US Dollars) or its equivalent in Maldivian Rufiyaa</p> <p>7.2 The bid security should be:</p> <ul style="list-style-type: none"> - Original bank guarantee letter (or) - Bank guaranteed and stamped check (or) - An insurance policy from Maldives Monetary Authority (MMA) registered insurance company

	<p>7.3 Any bid not accompanied by a Bid Security shall be rejected during bid opening</p> <p>7.4 The bid security must be valid for a minimum of twenty (20) additional days beyond the validity of quotation</p>
8. Technical Compliance	<p>8.1 All relevant information including the brand shall be given to enable technical evaluation of quoted items</p> <p>8.2 Fenaka Corporation Limited will only accept items that meet OEM standards.</p> <p>8.3 Measurement methods for all the equipment, for the relevant consumables and reagents specified in the quoted items.</p> <p>8.4 Storage guidelines for all the consumables including storage temperature.</p> <p>8.5 Expiry dates of all the consumables, proving that the shelf life is not less than 6 months from the date of handover.</p> <p>8.7 Material Safety Data Sheets (MSDS)</p> <p>8.6 If the goods do not comply with the requirements mentioned in <i>Section III, Technical Specifications</i> the bid will be rejected during evaluation</p> <p>8.7 In case supplied items do not meet the required items, they will be rejected and returned</p>
9. Documents Comprising the Bid	<p>9.1 Quotation (inclusive of the delivery period and payment terms)</p> <p>9.2 The Bidder shall submit proof documents to confirm that the chemicals supplier is from an authorized dealer.</p> <p>9.3 Specification of the offered product including brand detail</p> <p>9.4 Material Safety Data Sheets (MSDS)</p> <p>9.5 Details of the company</p> <ul style="list-style-type: none"> - Company profile/background - Company registration certificate - GST registration certificate (for local bidders only) - TAX clearance report (6 months validity) - Contact details (name, designation, mobile number and e-mail address) <p>9.6 Experience letters, if available</p> <ul style="list-style-type: none"> - Letters within past five (5) years

	<ul style="list-style-type: none"> - Relevant experience letters - Letters with project name and value <p>9.7 One (1) compact disc with original bid document scanned and written</p>
10. Format of Bid	<p>10.1 The Bidder shall submit two (2) sets of the bid document (1 original and 1 copy), enclosed separately in two envelopes and sealed with company stamp</p> <p>10.2 All pages of the bid document shall be stamped and bound properly (excluding the bid security)</p>
C. Bid Submission	
11. Sealing and Marking Bid Document	<p>11.1 The bid document shall be sealed properly in an envelope clearly marked 'ORIGINAL' or 'COPY', with the name of the company and the tender reference number (FNK-I/IUL/2024/100)</p>
12. Bid Opening	<p>12.1 The bids will be opened on 06th May 2024, 11:00hrs in the presence of bidders</p> <p>12.2 Bids will be opened at: Fenaka Corporation Limited Hilaalee Magu, K. Male', Republic of Maldives</p> <p>12.3 Bids received electronically will not be accepted</p>
13. Bid Rejection	<p>13.1 Bidders that arrive after bid submission deadline shall not be able to participate in the bid</p> <p>13.2 Bidders that do not register for the tender are unable to participate in the bid opening</p> <p>13.3 Bids lacking the documents mentioned in 9. <i>Documents Comprising the Bid</i> (except 9.6 <i>Experience letters</i>) and that do not comply with 10. <i>Format of Bid</i> are subjected to be rejected</p>
D. Awarding of Contract	
14. Payment Terms	<p>14.1 An advance payment will not be released for this project</p> <p>14.2 Proposed payment terms should not be tied with submission of Bill of Lading.</p>

Section II: Evaluation Criteria

Proposal Cost: 40 points for the lowest price

- $(\text{Lowest price} / \text{proposed price}) \times 40$

Delivery: 25 points for the lowest delivery period

- $(\text{Lowest delivery period} / \text{proposed delivery period}) \times 25$
- If the delivery period indicates 'ex-stock', it shall be taken same as the party offering the longest delivery period.

Credit Period: 30 points for the maximum credit period.

- $(\text{Proposed credit period} / \text{longest credit period}) \times 30$

Experience: 5 points for the experience.

Note: Any discrepancy in technical details specified in quotation with technical specification document, the specification shall prevail.

Section III: Technical Specifications / Quantity

#	Description	Unit	Quantity
1	Antiscalant for RO Plant (pH Alkaline)	Kg	4700

Antiscalant chemicals for preventing scaling of RO membranes

Product Name and Description:

Name: Antiscalant/ Antiscaling agent

Purpose: Used to prevent scaling of RO membrane

Chemical composition:

Detailed chemical composition of the antiscalant mixture

some examples include:

Phosphonates:

- Phosphonates are effective inhibitors of calcium carbonate (CaCO₃), calcium sulfate (CaSO₄), and other scale-forming salts.
- Examples include:
 - HEDP (1-Hydroxyethylidene-1,1-Diphosphonic Acid)
 - ATMP (Amino Trimethylene Phosphonic Acid)
 - EDTMP (Ethylene Diamine Tetra (Methylene Phosphonic Acid))

Polyacrylates:

- Polyacrylates are synthetic polymers that inhibit the crystallization of scale-forming salts by sequestering metal ions.
- Examples include:
 - Polyacrylic acid and its copolymers
 - Polyaspartic acid and its derivatives

Polymaleic Acid and Its Copolymers:

- Polymaleic acid and its copolymers exhibit excellent scale inhibition properties and are effective against various scale-forming salts.
- They also have dispersant properties that help in preventing colloidal fouling.

Organophosphorus Compounds:

- These compounds contain phosphorus groups and organic functional groups, providing multifunctional inhibition against scaling and fouling.
- Examples include:
 - PBTC (2-Phosphonobutane-1,2,4-Tricarboxylic Acid)
 - BKC (Benzalkonium Chloride)

Surfactants and Dispersants:

- Surfactants and dispersants help in preventing the agglomeration and deposition of suspended particles and colloids on the membrane surface.
- Examples include:
 - Nonionic surfactants
 - Anionic surfactants
 - Polymeric dispersants

Threshold Inhibitors:

- These compounds work by forming complexes with metal ions, thereby increasing their solubility and preventing precipitation.
- Examples include:
 - Polyphosphates
 - Citric acid

Any other chemical mixture composition mixture can also be approved, after evaluation from technical experts in Fenaka.

Physical properties

Colour: amber colored/ light yellow

Odor: no odor

Solubility: miscible in water

pH: 8-9 (alkaline antiscalant)

Packaging and Storage:

Shelf life: The chemical should have a minimum of 6 months of shelf life upon delivery.

Packaging: stored in a 25 L can, made of appropriate material for chemical storage

Labelling: Chemical should be labelled appropriately and contain the following information (label in Dhivehi will be appreciated)

- Date of manufacture
- Date of expiry
- Name of chemical
- Concentration of chemical
- Manufacturer details
- Chemical handling safety details with transportation advice
- Chemical warning labels

Safety and handling

Vendors must provide the relevant MSDS with the chemicals. And the MSDS should provide important information on the chemical, including and not limited to...

<p>Chemical Identity and Information:</p>	<ul style="list-style-type: none"> - Common Names: List all common names and synonyms of the chemical. - Chemical Formula: Provide the molecular formula of mixture. - CAS Number: Include the Chemical Abstracts Service (CAS) Registry Number for chemicals. - Other Identifiers: Any other identification codes or numbers associated with the chemical.
<p>Physical and Chemical Properties:</p>	<ul style="list-style-type: none"> - Appearance: Describe the physical appearance of the chemical (e.g., liquid, clear solution).



	<ul style="list-style-type: none"> - Odor: Note any characteristic odor. - pH Value: Specify the pH range of the solution. - Melting Point and Boiling Point: Provide the temperature ranges at which the chemical changes state. - Density: Include the density of the solution in g/cm³. - Solubility: Indicate the solubility of chemicals
Handling and Storage:	<ul style="list-style-type: none"> - Handling Instructions: Provide safe handling procedures, including recommended protective equipment and precautions. - Storage Conditions: Specify proper storage conditions to maintain chemical stability and prevent hazards. - Incompatibilities: List substances or conditions that should be avoided to prevent hazardous reactions.
Exposure Controls and Personal Protection:	<ul style="list-style-type: none"> - Exposure Limits: Include recommended exposure limits (e.g., OSHA permissible exposure limits, ACGIH Threshold Limit Values). - Engineering Controls: Recommend engineering controls (e.g., ventilation systems) to minimize exposure. - Personal Protective Equipment (PPE): Specify required PPE, such as gloves, goggles, or respirators.
Accidental Release Measures:	<ul style="list-style-type: none"> - Emergency Procedures: Provide steps to be taken in the event of a spill or release, including containment and cleanup measures.

	<ul style="list-style-type: none"> - Fire safety measure: including type of fire extinguisher that can be used. - Waste Disposal: Outline proper disposal methods in compliance with applicable regulations.
Stability and Reactivity:	<ul style="list-style-type: none"> - Stability: Indicate conditions under which mixture is stable or unstable. - Reactivity: List substances or conditions that may cause hazardous reactions. - Decomposition Products: Identify potential decomposition products and associated hazards.
Toxicological Information:	<ul style="list-style-type: none"> - Routes of Exposure: Describe potential routes of exposure and associated health effects. - Toxicity Data: Include available toxicity data from studies or regulatory sources.
Disposal Considerations:	<ul style="list-style-type: none"> - Disposal Methods: Provide recommended methods for safe disposal of chemical waste. - Regulatory Requirements: Note any regulatory requirements for disposal or treatment of chemical mixture.
Transport Information:	<ul style="list-style-type: none"> - DOT Classification: Specify the Department of Transportation (DOT) classification for transportation purposes. - Packaging Requirements: Detail packaging requirements for safe transport.
Other Information:	<ul style="list-style-type: none"> - Date of Preparation: Include the date on which the MSDS was prepared or last updated.
	<ul style="list-style-type: none"> - Contact Information: Provide contact information for the manufacturer or supplier for further inquiries or assistance.

Note: Supplier has to provide Material Safety Data Sheet (MSDS) of all the items listed