

General Manager (INDEG)
INDEG Department
Oil India Limited
Duliajan-786602, Assam
(Email ID: indeg@oilindia.in)

Ref: INDEG/OIL/EOI/07/404/Phase XIV - 2023-24 dated 03.10.2023

Honourable Prime Minister has said, "Aatmanirbhar Bharat is not about being self-contained or being closed to the world, it is about being self-sustaining and self-generating.

In order to propagate above views of Honourable Prime Minister, "Aatmanirbhar Bharat Abhiyan" has been launched. Oil India Limited (OIL) is committed to take forward vision given in "Aatmanirbhar Bharat Abhiyan" for Import substitution of items required by Oil India Limited (OIL).

Interested companies are requested to send their Expression of Interest with all documentary evidence for the items listed herewith as per format attached to INDEG Department of OIL at Email ID: indeg@oilindia.in.

Development orders will be placed for the items, if found suitable as per OIL's Development order policy as uploaded in our [website: www: oil-india.com](http://www.oilindia.com) >>Flagship program.

Vendors may send their Expression of Interest by 31.10.2023.

(Please type on your Letter Head)

Ref. No.....

Date :

To

General Manager (INDEG)

INDEG Department

Oil India Limited

Duliajan-786602

Assam

(Email ID : indeg@oilindia.in)

**Expression of Interest
(For Import substitution)**

1. Company Details

1	Company Name	
	Whether manufacturer. If not, whether dealer, distributor etc.	
2	Location	
3	Address	
4	Contact Person	
5	E-mail ID	
6	Mobile/Cell Phone No	
7	Product/Service Proposed for Development	
8	Quantity Offered for Field Trial (Based on field requirement, actual quantity to be decided)	
9	Delivery Schedule	
10	Estimated Price of the Product / Unit/service	
11	Have you supplied this item to Indian Oil & Gas Companies (names of companies)	

2. Details with copies of relevant documents

1	Details of infrastructure available
2	Manpower details
3	Equipment, Machineries & testing details available
4	Existing product/service details including the offered items/services
5	Copy of last two years Audited Balance Sheet of the Company
6	Copy of company Incorporation Certificate along with Memorandum of Association (MOA) / Articles of Association (AOA) OR Copy of partnership deed in case of partnership company
7	Copy of GST Registration Certificate
8	Copy of PAN Card
9	Copy of MSME Certificate, if any
10	Copy of NSIC Certificate, if any

Name : Signature Designation.....

List of items

Sl. no	ITEM DESCRIPTION				
1	<p>1.0 INTRODUCTION:</p> <p>Requirement of liquid flow improvers for the treatment of high pour point crude.</p> <p>a. Parameters of crude to be treated:</p>				
Pour Point		API	Wax Content	Asphaltene Content	Water Content
24 °C - 36 °C		20-35	10-18%	2-7 %	2-70 %
<p>b. Pour Point Reduction of treated Crude Oil desired: ≤ 10 °C.</p>					
<p>2.0 TECHNICAL PARAMETERS:</p> <p>i. State: Homogeneous, clear and free-flowing liquid at a temperature of 25°C and above, free from insoluble (liquid or solid) matter.</p> <p>ii. Smell: The product should smell typically like a petroleum distillate and should not have any other obnoxious smell.</p> <p>iii. Density (at 25 °C): 0.90-0.99 g/cm³</p> <p>iv. Dynamic Viscosity (at 20 °C): 35-45 cP</p> <p>v. Solvent: Use of only the following solvents is permissible for manufacturing: Toluene / Xylene or mixed Xylene / Ethyl Benzene or combination thereof. The solvent should not contain organic compounds like 2-Pinene, 3-Carene, D-Limonene or Terpenolene even in trace amount. Moreover, the bidder has to use the same solvent which has been used in the approved Advance Sample, for manufacturing the bulk supply.</p> <p>vi. Congealing Point: ≤ 10°C</p> <p>vii. Melting Point: 20°C (or lower)</p> <p>viii. Viscosity of the product at 20°C when measured at 25 inverse seconds shear rate with Brookfield DV-III cone & plate Rheometer (with CPE-41 cone): 80 cP (or lower)</p> <p>ix. Solubility: Soluble in Toluene and HSD in all proportions at 22°C and above. Should be soluble in dry crude oil, and also in water-in-crude emulsions containing between 2% to 80% (+/- 2 %) water.</p> <p>x. Shelf life: 18 months (minimum) from the date of consignments</p> <p>xi. Flash Point : ≥ 60 °C (PMCC Method).</p>					
<p>3.0 PROCEDURE FOR MEASUREMENT OF CONGEALING & MELTING POINTS:</p> <p>For the determination of Congealing and Melting Points of a 5-gm sample would be taken in a 10 mL graduated and stoppered borosilicate glass test tube. That tube would be immersed up to 10 mL mark in a refrigerated water bath maintained at 16°C. After 10 minutes, the temperature of the water bath would be set to the</p>					

next lower even number (i.e. 14°C), and thereafter would be set to decrease in steps of 2°C. There would be a gap of 10 minutes between two successive steps. The physical state (liquid / gel) of the sample would be checked after 10 minutes from the time the water bath is set at that temperature, before reducing the bath temperature further by 2°C. temperature at which the sample gels completely, would be noted as Congealing Point of that product.

After the Congealing Point of the sample is reached, the temperature of the water bath would be set to increase by 2°C in successive steps at 10-minute intervals, and the physical state of the sample is checked before every stepping-up of temperature. The temperature at which the sample is found to have completely melted, would be noted as Melting Point of that product.

Congealing and Melting Point temperatures would be recorded and reported in even numbers, because of the temperature ramping protocol described above.

4.0 QUALITY(PERFORMANCE) REQUIREMENT:

PRODUCT PERFORMANCE TEST IN THE LABORATORY

4.1 Test Procedure

4.1.1 Test on crude oil treated at 50°C

The typical test crude oil will have water content up to one percent and Pour Point normally in the range of 25°C to 36°C. 500 mL of the test crude oil would be heated at 50°C in a water bath for 30 minutes, and then treated with the chemical sample at a dosage upto 1000 ppm (weight / volume). The treated crude oil would again be heated at 50°C for 30 minutes, to complete the crude oil treatment process. The following two parameters of the treated crude oil shall be evaluated within 48 hours:

- i. Viscosity : Apparent viscosity (cP) would be measured at a shear rate of 25 inverse seconds by Brookfield DV-III cone & plate Rheometer (with CPE-41 cone) through a pre-defined software programme at temperatures starting from 30°C down to 15°C (or limited by the viscosity measurement range of the instrument) at 3-degree intervals.

- ii. Pour Point : Pour Point (°C) would be measured as per ASTM D-5853.

4.1.2 Test on crude oil treated at its Pour Point temperature

500 mL of the untreated (raw) test crude oil would be heated up to 50°C in a water bath, then cooled down to its Pour Point temperature (which would normally be in 15°C to 36°C range) with constant stirring with a mechanical stirrer. 1000 ppm (weight / volume) of the sample (Advance Sample / consignment sample) would be added to the crude oil at that temperature while stirring the crude oil constantly, and the stirring would continue for another 5 minutes. The Pour Point of that treated crude oil would be measured (without any pre-heating) immediately thereafter.

4.2 Performance Requirement

4.2.1 Crude oil treated at 50°C

- i. Viscosity : Apparent Viscosity (AV) of the test crude oil treated [as per para 4.1.1 above] with any sample (Advance Sample / consignment sample) not exceeding 1000 ppm should compare positively (under identical test conditions) with AV of the same test crude oil treated at identical dosage with a reference sample. However, even if the test crude oil treated with any sample (Advance Sample / consignment sample) shows a deviation (higher

value) up to ten percent in AV compared to the AV of the crude oil treated with the reference sample, that sample (Advance Sample / consignment sample) would be considered to have passed this performance evaluation criterion. The comparison of AV would be done at the viscosity measuring temperature of 15°C. However, in case AV measurement of the crude oil sample treated with reference sample at 15°C is not possible because the AV increases beyond the viscosity measurement range of the Rheometer at 15°C and 25 inverse seconds shear rate, then the comparison would be done at the lowest temperature (18°C or above at 3°C intervals) at which AV of the crude oil sample treated with the reference sample could be measured.

- ii. Pour Point: The Pour Point of the test crude oil treated with any sample (Advance Sample / consignment sample) at a dosage not exceeding 1000 ppm should be equal to or less than the Pour Point of the same test crude oil treated with the reference sample at identical dosage.

4.2.2 Crude oil treated at its Pour Point temperature

The Pour Point of the test crude oil treated at its Pour Point temperature [following the procedure as described in Point No. 4.1.1 above] with 1000 ppm of a sample (Advance Sample / consignment sample) should be equal to or less than the Pour Point of the same test crude oil treated with the reference sample at 1000 ppm, under identical test conditions.

Advance Sample: The sample submitted to OIL for approval by the successful bidder after getting the bulk order against this tender will be termed as an Advance Sample. This requirement has been discussed in Point No. 6.0[b] below.

Reference Sample: Any product with a given brand name that has been supplied to OIL in the past against a trial order followed by a developmental order, and the supplies against both the orders have been reported to be acceptable, is considered as an "approved" or "proven" product. A sample from the consignment of any such "approved" product that has been supplied to OIL within the past one year and approved in OIL's laboratory for field-use would be considered as a reference sample, as far as evaluation of any Advance Sample is concerned. For quality assessment of the bulk supplies (consignment batch-samples), the Advance Sample submitted by the bidder would be considered as the reference sample.

5.0 Acceptance Criteria

An Advance Sample (or any consignment sample) has to fully conform to the physical parameters outlined in Point No. 2.0 above and the performance requirement outlined under Point No 4.0 above, to be acceptable.

6.0 ADDITIONAL TERMS & CONDITIONS

Product Information required to be submitted by the bidder as a part of the technical bid.

a) **Product Data Sheet (PDS)** printed on the bidder's official letterhead and duly signed by an authorized signatory, containing the following information:

- i. Product Name
- ii. Colour
- iii. Smell

- iv. Generic Composition
- v. The Solvent used and its Boiling Point / Range (°C)
- vi. Specific Gravity/density at 25°C
- vii. Apparent Viscosity (cP) at 20°C
- viii. Flash Point (PMCC, °C)
- ix. Melting Point (°C)
- x. Congealing Point (°C)
- xi. Date of Manufacture
- xii. Shelf Life (Months)
- xiii. pH

b) **Material Safety Data Sheet (MSDS)** printed on the bidder's official letterhead and duly signed by an authorized signatory, containing all relevant information under the following sections:

- i. Chemical Product and Company Identification
- ii. Composition / Information on Ingredients
- iii. Hazards Identification
- iv. First Aid Measures
- v. Fire Fighting measures
- vi. Accidental Release Measures
- vii. Handling and Storage
- viii. Exposure Controls / Personal Protection
- ix. Physical and Chemical Properties
- x. Stability and Reactivity data
- xi. Toxicological information
- xii. Ecological Information
- xiii. Disposal Considerations
- xiv. Transport Information
- xv. Other Regulatory Information

c) **Other Information**

Certification from the bidder:

The bidder must submit a certificate as a part of the technical bid, confirming that in case the bidder gets an order:

- i. The bidder would supply the material having the same quality in terms of performance and composition.
- ii. The bidder would supply the material duly packed in drums and marked as per Bureau of Indian Standards (BIS) "IS 1783 (Part-1): 2014, Grade A" specification, and every drum should bear the specified BIS Certification Mark. Each drum should have a tare weight of 22 kg (+/- 0.5 kg).
- iii. The drums should contain 200 l of the chemical.
- iv. The supplied product would have a shelf life of 18 months minimum from the date of dispatch.
- v. Any crude oil doped with the supplied product (up to 2000 ppm) would be fully compatible with the crude oil refining process.

d) **Sample submission along with the EOI response:**

6(six) samples 500 g each in airtight and properly sealed bottles made of either glass or metal should be submitted at the following address:

Shri Amit Kumar Prasad
Senior Manager (INDEG)
INDEG DEPT.
(IN Contracts Department Complex)
Oil India Limited, Duliajan-786602, ASSAM
Mobile No:7896008923
