

OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT, ISLAMABAD
FOREIGN SECTION A

(To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A'

SODIUM CARBOXY METHYL CELLULOSE-HIGH VISCOSITY, CMC (HV)

Enquiry No PROC-FA/CB/WS-4250/2019

2

on Criteria FULL PKG.

SCHEDULE OF REQUIREMENT

Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
SODIUM CARBOXY METHYL CELLULOSE-HIGH VISCOSITY, CMC (HV)	Metric Ton	200					

Pursuant to tender clause # 2.2, 11.4, 13 & 35.3.2, bid(s) must be accompanied by an upfront bid bond in the form of pay draft or bank guarantee issued by scheduled bank of Pakistan or a branch of foreign bank operating in Pakistan for an amount of US\$7,100/- (United States Dollar Seven Thousand One Hundred Only) or equivalent Pak Rupees, with technical bid and valid for the date of opening of the bids. The bank guarantee must be issued in accordance with the format as per Annexure-C of the tender documents.

Conditions: -Bidders are advised to carefully read all the terms and conditions of the Tender Document available at OGDCL master tender document.

From ACU member Countries: In case of shipment from ACU member countries, the LC beneficiary should be of that particular country where the consignment is being shipped.

Rejection criteria: - The summary rejection criteria at clause # 35 of the tender document may also be examined carefully. Any bid failing to meet the criteria spelled in the clause # 35 shall be summarily rejected without any right of appeal.

Payment Terms (also available at OGDCL website (Tenders Tab):

For value less than or equal to US \$200,000:

Payment to the Contractor/ bidder in foreign currency shall be made by establishing in favor of the Contractor an irrevocable Letter of Credit (hereinafter called the L/C). 70 % Payment (s) under the L/C will be made for the FOB/ CFR / CPT (as the case may be) material of each shipment upon submission of the shipping documents. Balance 30% Payment will be released after receipt, on and acceptance of material.

For value more than US \$200,000:

Payment to the Contractor/ bidder in foreign currency shall be made by establishing in favor of the Contractor an irrevocable Letter of Credit (hereinafter called the L/C). 80 % Payment (s) under the L/C will be made for the FOB/ CFR / CPT (as the case may be) material of each shipment upon submission of the shipping documents. Balance 20% Payment will be released after receipt, on (in addition of pre-shipment inspection) and acceptance of material.

TECHNICAL SPECIFICATIONS SHEET OF
CARBOXY METHYL CELLULOSE – HIGH VISCOSITY
CMC- (HV)

CMC (HV) is the technical grade, high viscosity, sodium carboxyl methyl cellulose (Na-CMC) used in the drilling fluids ranging from fresh water to salt water (Containing up to 50,000 PPM Salt). CMC-(HV) also aids in rheological control, filtration control, formation of the filter cake, lubrication of bit, suspension of cuttings and weighting materials. It is stable up to 300 °F (149 °C).

Each bidder of CMC-HV should invariably fill-in the table given below with exact value of these properties of their quoted product. Only to write conforming to or OK will not be sufficient.

A) TECHNICAL SPECIFICATIONS

SR. NO.	PHYSICAL PROPERTIES	REQUIRED SPECIFICATIONS	EXACT VALUE OF THE OFFERED PRODUCT
01.	Appearance	Light colored hygroscopic free flowing powder	
02.	Moisture content	8% Maximum	
03.	Degree of Substitution	0.75 Minimum	
04.	pH of 1% Solution in distilled water (25 °C)	7 - 10	
05.	Sieve Limit (%) Retention on 16 mesh	1 Maximum	
06.	Bulk Density (g/l)	550 Minimum	

B) :- **PERFORMANCE TESTING**
(AS PER API SECTION 10)

SR. NO	PERFORMANCE TEST	REQUIRED SPECIFICATIONS	EXACT VALUE OF THE OFFERED PRODUCT
1.	Viscometer Dial Reading at 600 rpm	In de-ionized Water	30 Minimum.
	API Spec. 13 A - 10	40 g/L Salt water	30 Minimum.
		In Saturated Salt water	30 Minimum.
2.	Fluid Loss	10 cm ³ , Maximum	

Note: Detailed procedure for performance testing are enclosed at Annexure- A-1

c) NECESSARY DATA

SR. NO.	DESCRIPTION	
01.	Name of Bidder	
02.	Complete address, telephone, Email and fax numbers of bidder	
03.	Name of local agent	
04.	Complete address, telephone, Email and fax numbers of local agent.	
05.	Name of Manufacturer	
06.	Name of Authorized Signatory of Manufacturer	
07.	Complete address, telephone, e-mail and fax number of manufacturer.	
08.	Website of manufacturer	
09.	Brand Name of Product	
10.	Country of origin	
11.	Port of shipment	
12.	Minimum shelf life of product	

- D) Names of at least 07 clients / sales achievement (E & P companies only) other than OGDCL to whom supplied the quoted products in bulk quantity (not less than 50 M Ton) **with contract numbers, year of supply and quantities during the last Five years commencing from year 2014** as a proof of five (05) years experience.

SR. NO.	NAMES OF CLIENTS WITH ADDRESS AND TELEPHONE NOS.	CONTRACT / PURCHASE ORDER NOS. WITH DATE	QUANTITY SUPPLIED
01.			
02.			
03.			
04.			
05.			
06.			
07.			

E) **NECESSARY ATTACHMENTS FOR TECHNICAL BID:**

SR. NO.	DESCRIPTION	ATTACHED/ PROVIDED OR NOT.
01.	Product Data Memorandums of CMC (HV) in original printed by manufacturer/ producer.	Attached/ Not attached
02.	Material Safety Data Sheets of CMC- (HV) in original printed by manufacturer/ producer.	Attached/ Not attached
03.	Valid ISO-9001-2008 certificate as a proof for manufacturing / Production of the quoted CMC-(HV) / Mud chemicals	Attached/ Not attached
04.	Original authority letter issued by the manufacturer/ Producer to bidder for quoting the product.	Attached/ Not attached
05.	Company profile with manufacturing capability & Experience	Attached/ Not attached

06.	Lab evaluation report of the quoted product from an internationally reputed/ recognized third party laboratory in the light of technical specifications sheet at A) & Performance Test at B)	Attached/ Not attached.
07	1 kg sample of offered product	Provided/ Not provided

PACKAGING:

The chemical should be packed as **25kgs** net per bag in export quality new multi-wall paper bags having thick, high density inner polythene liner for rendering the material completely moisture proof. The material should be palletized as 01 M.Ton, wrapped with thick polyethylene sheet and tightly strapped. The packaging of the required mud chemical should be of international standards and capable to safe transportation during ocean / road journey from port of shipment to well site and to withstand harsh weather conditions at the storage points and at the well sites / locations.

MARKING:

Each bag should have clearly legible marking, as given below;

- (a) Name of the product.
- (b) Name of the Manufacturer.
- (c) Date/month/ year of manufacture.
- (d) Minimum shelf life
- (e) Supply order number against which supplies are made.
- (f) Lot No. _____/ Batch No. _____.

INSTRUCTIONS TO THE BIDDERS/ TERMS & CONDITIONS:

1. The manufacturer of the quoted products must have minimum 05 years experience of manufacturing & supplying of indented chemical to E & P companies specifically, duly supported by valid authentic ISO 9001-2008 Certificate as a proof for manufacturing/ production of the quoted product consecutively from last 05 years. In case of any ambiguity, the certificate will be verified from issuing authority. The certificate duly submitted along with bid, will be considered final. No additional certificate will be entertained at any stage of the case.
2. **Minimum shelf life** of the quoted products **should not be less than 03 years.**
3. Technical Specifications Sheet of the quoted products duly filled-in must be enclosed in the technical bid.
4. **Delivery period** of the quoted product should not be more than **180 Days.** The material must be delivered in 02 equal consignments. First partial shipment will be made within 90 days after establishment of LC
5. Bids will be evaluated strictly on the basis of TORs of this tender Enquiry and previous performance of bidder, manufacturer and local agent.
6. An authority letter in original issued by the manufacturer for allowing the bidder to quote their product for this particular tender enquiry, duly signed/stamped, must be attached with the technical bid in case the bidder is not manufacturer.

7. All the bidders must have to provide/ submit the **1Kg sample** of the quoted product along with technical bids at the time of bid submission. The valid receipt/tracking details supplied through national/ international courier services has to be accompanied with the bid. No sample will be accepted / entertained after 10 days of Technical Bid Opening if not provided along with the bid, and the bid will be rejected.
8. All the bidders must have to submit the lab evaluation report of their quoted products from any internationally reputed /recognized **3rd party laboratory**, strictly as per technical specification sheets of the tender document, along with the technical bid.
9. The quantities of indented material can be increased or decreased at the time of finalization of case according to the requirement
10. Prior to shipment of the material, if the cost of Material is USD 200,000/-and above, the supplier of the product will be responsible for carrying out the inspection & Lab analysis of the material from the OGDCL approved inspecting agency/Lab for confirmation of material as per tender specifications. The inspector will be hired by OGDCL. After physical inspection, one representative sample of the chemical will be dispatched by the inspectors directly to OGDCL. Later on, its Lab Evaluation report will be submitted directly to OGDCL. After examination/scrutiny, OGDCL will inform about acceptance/rejection of material/report.
11. Shipment is required to be made in containers for minimizing damages to the costly Chemical.
12. The final acceptance of the requisite consignment will be made after physical inspection of shipment & Lab analysis of representative sample for conforming to technical specs of tender documents. The lab analysis will be undertaken at OGDCL own or any other reputable lab of OGDCL choice and acceptance of the results will be binding over the supplier.
13. Material must have to be lifted back by the vendor if found not as per technical specification of this particular tender enquiry even after its receipt at the base stores and have to replace with the material conforming to technical specifications with no cost to OGDCL.
14. If any of the information provided by the bidders proves wrong or any counterfeited/unlawful document is submitted to mislead department, OGDCL reserves the right to disqualify such bids without further assigning any reason. Such bidders will not be allowed to bid for future procurement.

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SECTION 10
TECHNICAL-GRADE HIGH-VISCOSITY CMC
(CMC-HVT)

10.1 Description

a. Technical-grade high-viscosity carboxymethyl cellulose (CMC-HVT) (an alkali metal salt of carboxymethyl cellulose) is cellulose that is modified chemically to obtain a water-soluble polymer. The manufacturer shall maintain documentation of analysis of the cellulose raw material used.

b. The product obtained is a free-flowing or granulated powder and is not normally purified of byproducts formed in the reaction. It is known as CMC-HVT.

c. CMC-HVT shall be deemed to meet this specification if a composite sample representing no more than one day's production conforms to the physical requirements of Table 10.1, represents the product produced and is controlled by the manufacturer.

TABLE 10.1
CMC-HVT PHYSICAL REQUIREMENTS

Requirement	Specification
Solution Properties	
Viscometer Dial Reading at 600 rpm	
i. Deionized Water	30, minimum
ii. 40 g/l. Salt Water	30, minimum
iii. Saturated Salt Water	30, minimum
Filtrate Volume	10 cm ³ , maximum

SOLUTION PROPERTIES

10.2 Equipment

- Thermometer: 32-220 ±1°F (0-107 ±0.5°C)
- Balance: precision of 0.01g
- Mixer (e.g., Multimixer Model 99 with 9929X impellers or equivalent as shown in Fig. 2.1). Each spindle will be fitted with a single sine-wave impeller approximately one inch (25mm) in diameter mounted flush side up.
- Mixer Container: approximate dimensions 7 inches (180 mm) deep, 3-13/16 inch (97 mm) ID top, 2-3/4 inch (70 mm) ID bottom (e.g., Hamilton Beach mixer cup No. M110-D, or equivalent)
- Spatula
- Container: glass or plastic with stopper or lid for salt solutions
- Motor Driven Direct Indicating Viscometer, as referenced in API RP 130-1, 1st edition, June, 1990, Par. 2.
- Deionized (or distilled) water

i. Sealed container: about 500-cm³ with lid

j. Sodium chloride: (CAS #7647-14-5)

k. 1000-cm³ volumetric flask

l. Defoamer

m. Timers: two intervals, mechanical or electrical, precision to 0.1 minute

n. Filter press: as referenced in API RP 130-1, 1st edition, June, 1990, Par. 3.2

o. Graduated cylinders (TD) are 10 ±0.1 cm³, one 100 ±1 cm³, and one 500 ±5 cm³

p. pH meter: precision of 0.1 pH unit

q. API Standard Specification No. 2 Clay from Par. 1.4.1

r. Sodium bicarbonate: (CAS #5042-69-6)

10.3 Procedure - Deionized Water Test

a. Prepare a solution of CMC-HVT. Add 2.20 ±0.01 g (6.29 ±0.03 g/l.) of CMC-HVT to 350 ±5 cm³ of deionized water at a uniform rate over a time interval of about 60 seconds while stirring on the mixer.

NOTE: CMC-HVT shall be added away from impeller shaft to minimize dusting.

b. After stirring a ±0.1 minutes, remove container from the mixer and scrape its sides with the spatula to remove or dislodge any CMC-HVT adhering to the container walls. Be sure all CMC-HVT clinging to the spatula is incorporated into the solution.

c. Replace the container on the mixer and continue to stir. The container may need to be removed from the mixer and the sides scraped to dislodge any CMC-HVT after another 5 and 10 minutes. Total mixing time shall equal 20 ±1 minutes.

d. Age the solution for up to 16 hours in a sealed or covered container at room temperature. Record storage temperature and storage duration.

e. After aging, stir the solution on the mixer for 5 ±0.1 minutes.

f. Pour the solution into the viscometer cup provided with the direct indicating viscometer. The dial reading at the 600 rpm rotor speed setting of the viscometer shall be recorded when a constant value at 600 rpm is reached. The 600 rpm dial reading shall be taken at a solution test temperature of 77 ±2°F (25 ±1°C).

10.4 Procedure - 40 g/l. Salt Water Test

a. Prepare a 40 g/l. salt solution by adding 40 ±0.1 g of sodium chloride to a 1000-cm³ volumetric flask and diluting with deionized water to the inscribed mark on the flask. Mix thoroughly.

Prepare a solution of CMC-HVT. Add 2.70 ± 0.01 g (22 ± 0.01 g/L) of CMC-HVT to 350 ± 5 cm³ of the 0.1% salt solution at a uniform rate over a time interval of about 60 seconds while stirring on the mixer. Add water if necessary.

After stirring 5 \pm 0.1 minutes, remove container from the mixer and scrape its sides with the spatula to dislodge any CMC-HVT adhering to the container walls. Be sure all CMC-HVT clinging to the spatula is incorporated into the solution.

Replace the container on mixer and continue to stir. The container may need to be removed from the mixer and the sides scraped to dislodge any CMC-HVT clinging to the container walls after another 5 and 10 minutes. Total mixing time shall be 20 \pm 1 minutes.

Age the solution for up to 16 hours in a sealed or covered container at room temperature. Record storage temperature and storage duration.

After aging, stir the solution on the mixer for 5 minutes.

Pour the solution into the viscometer cup provided with the direct indicating viscometer. The dial reading at the 600 rpm rotor speed setting on the viscometer shall be recorded within a constant value at 600 rpm reached. The 600 rpm dial reading shall be taken at a solution temperature of $77 \pm 2^\circ\text{F}$ ($25 \pm 1^\circ\text{C}$).

Procedure -- Saturated Salt Water Test

Prepare an ample volume of a saturated salt solution by thoroughly mixing in a suitable container to 4 g sodium chloride per 100 \pm 1 cm³ of deionized water. Allow solution to stand for approximately 1 hour. Decant solution or filter it into a storage container.

Prepare a solution of CMC-HVT. Add 2.50 ± 0.01 g (15 ± 0.01 g/L) CMC-HVT to 350 ± 5 cm³ of saturated salt solution at a uniform rate over a time interval of about 60 seconds while stirring on the mixer.

After stirring 5 \pm 0.1 minutes, remove container from the mixer and scrape its sides with the spatula to dislodge any CMC-HVT adhering to the container walls. Be sure any CMC-HVT clinging to the spatula is incorporated into the solution.

Replace the container on mixer and continue to stir. The container may need to be removed from the mixer and the sides scraped to dislodge any CMC-HVT clinging to the container walls after another 5 and 10 minutes. Total mixing time shall be 20 \pm 1 minutes.

Age the solution for up to 16 hours in a sealed or covered container at room temperature. Record storage temperature and storage duration.

After aging, stir the solution on the mixer for 5 minutes.

Immediately pour the solution into the viscometer provided with the direct indicating viscometer. The dial reading at the 600 rpm rotor speed setting of the

viscometer shall be recorded when a constant value for 600 rpm is reached. The 600 rpm dial reading shall be taken at a solution test temperature of $77 \pm 2^\circ\text{F}$ ($25 \pm 1^\circ\text{C}$).

4.0.6 Procedure -- Filtrate Volume

a. Prepare an ample volume of a saturated salt solution by thoroughly mixing in a suitable container 40 to 55 g sodium chloride per 100 \pm 1 cm³ of deionized water. Allow solution to stand for approximately 1 hour. Decant solution or filter it into a storage container.

b. Prepare a clay base suspension by adding 350 ± 5 cm³ of the saturated salt solution to a mixer container. Add 1.0 ± 0.1 g of sodium bicarbonate and stir on the mixer for about one minute.

c. Slowly add 35.0 ± 0.1 g of API Standard Evaluation Base Clay while stirring on the mixer.

d. After stirring 5 \pm 0.1 minutes, remove container from mixer and scrape its sides with the spatula to dislodge any clay adhering to container walls. Be sure all clay clinging to the spatula is incorporated into the suspension.

e. Replace the container on the mixer and continue to stir. The container may need to be removed from the mixer and the sides scraped to dislodge any clay clinging to the container walls after another 5 and 10 minutes. Total stirring time after adding the clay shall equal 20 \pm 1 minutes.

f. Add 1.15 ± 0.01 g (9.01 ± 0.01 g/L) of CMC-HVT to the suspension while stirring on the mixer, adding at a uniform rate over about 60 seconds.

g. After stirring 5 \pm 0.1 minutes, remove the container from the mixer and scrape its sides with the spatula to dislodge any CMC-HVT adhering to container walls. Be sure all material clinging to the spatula is incorporated into the suspension.

h. Replace the container on the mixer and continue to stir. The container may need to be removed from the mixer and the sides scraped to dislodge any CMC-HVT clinging to the container walls after another 5 and 10 minutes. Total stirring time shall equal 20 \pm 1 minutes.

i. Age the suspension for 2 hours \pm 5 minutes in a sealed or covered container at room temperature. Record storage temperature.

j. After aging, stir the suspension on the mixer for 5 \pm 0.1 minutes.

k. Immediately pour the CMC-HVT-treated suspension into a filter press cell. Before adding the suspension, be sure each part of the filter cell is dry and that all gaskets are not distorted or worn. The temperature of the suspension shall be $77 \pm 2^\circ\text{F}$ ($25 \pm 1^\circ\text{C}$). Pour the suspension to within about 1/2 inch (13 mm) of the top of the cell. Complete assembly of the filter press cell. Place the filter cell in the frame and close the relief valve. Place a container under the drain tube.

l. Set one timer for 7.5 ± 0.1 minutes and the second timer for 30 ± 0.1 minutes. Start both timers and adjust pressure on the cell to 100 ± 5 psi (690 ± 35 kPa). Both of these steps shall be completed in less than 15 seconds. Pressure shall be supplied by compressed air, nitrogen or helium.

m. At 7.5 ± 0.1 minutes on the first timer, remove the container and any adhering liquid on the drain tube and discard. Place a dry 10 cm^3 graduated cylinder under the drain tube and continue collecting filtrate to the end of the second timer set at 30 minutes. Remove the graduated cylinder and record the volume of filtrate collected.

10.7 Calculation -- Filtrate Volume

Calculate the filtrate volume of the CMC-HVT-treated suspension as:

$$\text{Filtrate vol., cm}^3 = 7 \times V_c \quad (a)$$

where: V_c = volume filtrate collected between 7.5 and 30 minutes.

Record calculated value.