

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

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

ANNEXURE 'A'

Material LUBE OIL FOR PROPANE REFRIGERATION COMPRESSORS OF NASHPA PLANT
Tender Enquiry No PROC-FA/CB/P&P/NOF-5024/2021
Due Date
Evaluation Criteria FULL

SCHEDULE OF REQUIREMENT

Sr No	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
1	Oil; Lubrizol CPI-1516-150 or equivalent brand, Polyalkylene glycol based as per attached specifications and terms and conditions	Litre	4158					

Note:

- 1. Bid Bond Amount:** US \$ 1700/= (United States Dollar One Thousand and Seven Hundred Only) or equivalent Pak Rupees
- 2. Mode of Bidding:** Single stage two Envelope basis.
- 3. Evaluation Criteria:** - Full Consignment wise C&F By Sea
- 4. Delivery Period:** 120 days from establishment of LC
- 5. Bid Validity:** 120 Days
- 6. Bidders** are advised to carefully read all the terms and conditions of the Tender Document available on OGDCL website which is an integral part of this Schedule of Requirement

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TERMS AND CONDITIONS FOR SUPPLY:

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1. The lube oil must be Polyalkylene Glycol (PAG) based and suitable for use in Propane Refrigeration Compressors.
2. The OEM of the offered brand must have 10 years of blending / manufacturing experience of the lubricants. Bidder must also confirm the use of quoted brand for propane refrigeration packages in the oil & gas or petrochemical industry. Reference list to be provided by the bidder.
3. The quoted brand of oil must be in use in the industry for last 5 years (min).
4. The offered brand of oil must be approved for propane refrigeration application by any OEM/packager of Screw Compressors. Valid documentation to be provided with the bid.
5. In addition to provision of technical literature including MSDS of the offered brand of oil, the properties of the offered oil are to be mentioned on the attached specification sheet, otherwise the bid will be rejected.
6. The offered brand of oil must have similar properties as those listed in the specification sheet. The offered oil shall not be accepted if there is any major deviation in its properties from any of the required properties of the oil as mentioned in the specification sheet.
7. If due to the standard size of packaging (drums or cans) the exact quantity of the oil cannot be supplied, the near equivalent of the required quantity shall be acceptable.
8. The offered oil must be compatible with Howden Screw Compressors with model nos. and operating data as under:
 - Models: 321/220/50 and WRViN 321/165/21
 - Gas Composition (Refrigerant): Propane 96%, Ethane 02%, Butane 02%
 - Suction Pressure and Temperature: 03 ~ 04 Psi, -35 deg F ~ 77 deg F
 - Discharge Pressure and Temperature: 230 Psi, 185 deg F
 - Oil supply temperature: 50 ~ 185 deg F

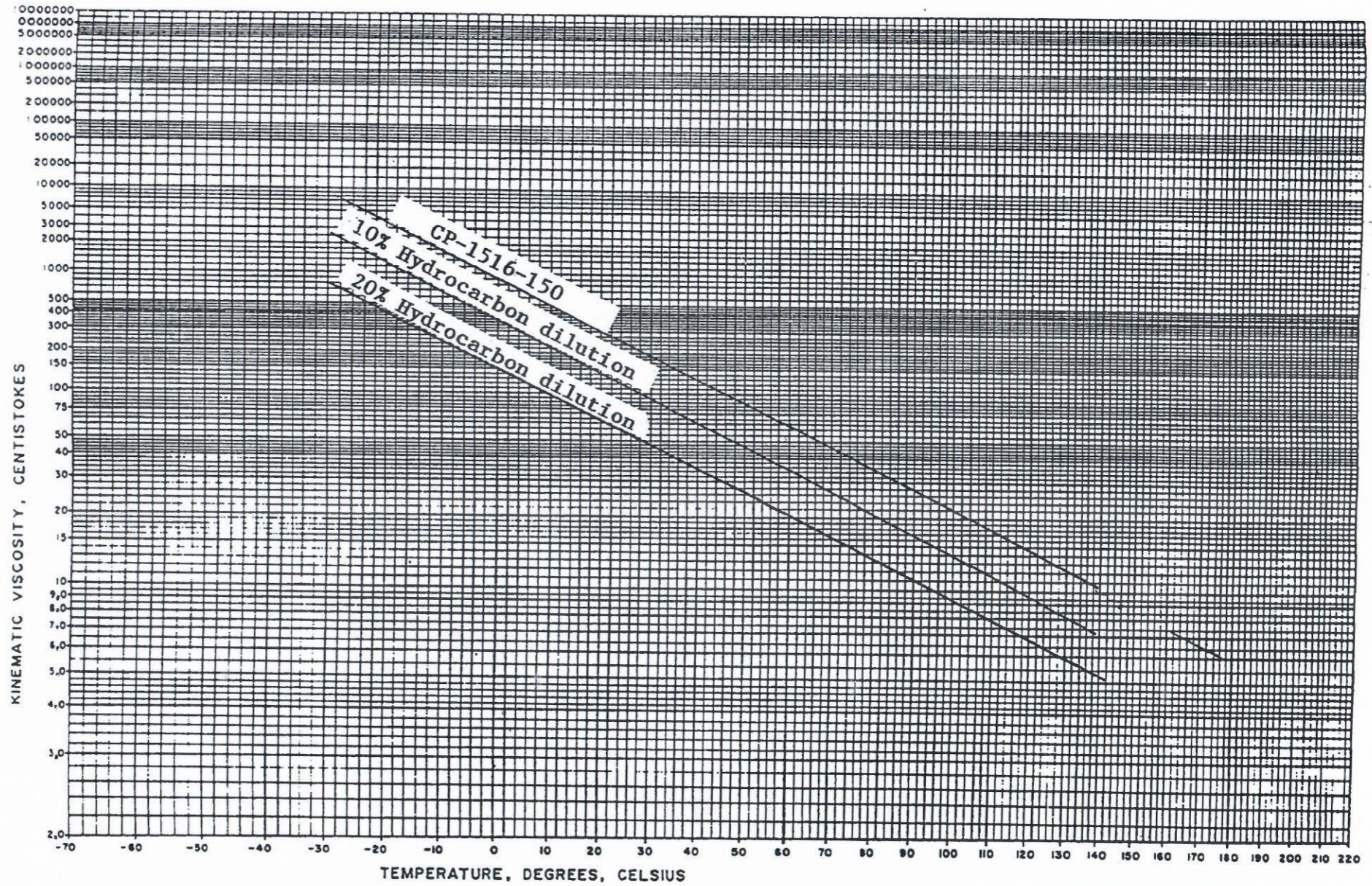
Lube oil for Howden Refrigeration Compressors

Test Procedure	ASTM Test Method	Specifications of CPI 1516-150 Oil	OGDCL's required Specification Range	Bidder's offered specifications
Lube Oil Name			CPI 1516-150 or Equivalent	Vendor to advise
ISO VG	n/a	150		
Density, g/mL (@20.0°C)	D4052	0.999	0.999 to 1.05	
Water Content, ppm	D6304	163	less than 1000 ppm	
Total Acid Number, mgKOH/g	D974	0.06		
Flash and Fire Point,	D92			
Flash Point °C		260	230 to 275	
Kinematic Viscosity, (cSt)	D445			
at 40°C		150.4	148 to 154	
at 100°C		23.5	23 to 29	
Viscosity Index	D2270	196	195 and above	
Pour Point, °C	D97	-34	-34 to -45	
Foaming Tendency, mL	D892			
Sequence I		0/0	Vendor to advise	
Sequence II		0/0	Vendor to advise	
Sequence III		0/0	Vendor to advise	
Bidder may provide other detailed specifications of quoted brand i.e. copper strip corrosion, molecular weight, vapour pressure and density at different temperature levels so as to ensure equivalency with CPI 1516-150 for which reference values are given as under:				
Noack Volatility	D972			
% Loss		5.1		
Copper Strip Corrosion	D130			
100 °C for 3 hours		1B		
Rust Test	D665			
A - Distilled Water		Pass		
Molecular Weight		1770		
Vapor Pressure, mm Hg				
100°F		2 x 10 ⁻⁸		
150°F		2 x 10 ⁻⁷		
200°F		7 x 10 ⁻⁷		
Density, lb/gal				
60°F		8.3		
100°F		8.1		
150°F		7.9		
200°F		7.7		
Coefficient of Thermal Expansion, 1/°F		0.00057		
Specific Heat, BTU/lb°F				
100°F		0.47		
150°F		0.49		
200°F		0.51		
Thermal Conductivity, BTU/hr ft2 (°F/ft)				
100°F		0.096		
150°F		0.094		
200°F		0.091		

Note: The properties / specification range of the required brand of oil are mentioned in the above table. The properties of the offered brand of oil to be provided by the bidder in the above given table.

ASTM STANDARD VISCOSITY-TEMPERATURE CHART

CP-1516 with hydrocarbon dilution



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