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MATERIALS MANAGEMENT DIVISION
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Technical Specifications for Purchase of new
Components for Pundit Lab Ultrasonic
Instrument for measurement of Acoustic
Emissions at in-situ conditions of temperature
and pressure.

PR No. 1000014606 (Rfx No. 6100000363)

Sr. No	Technical Specification	Qty
1	<p>FLOW THROUGH CORE CLEANER A rapid and efficient core cleaning system based on controlled sequential solvent displacements at moderate pressures. The standard version is delivered with a single core holder but multiple can be integrated into the assembly upon request.</p> <p>Scope of supply: The standard apparatus comes fully equipped with the following components:</p> <ul style="list-style-type: none">i.Four clean solvent tanksii.High Performance Liquid Chromatography (HPLC) pumpiii.Quick release core holder with heating mantleiv.Confining pressure systemv.Back pressure regulator (BPR)vi.Flow control valve systemvii.Waste tankviii.Documentation <p>Principle: Samples are placed in a quick release Hassler core holder which can be heated up to 80°C. Clean solvents are injected through the core via the constant rate-operable HPLC pump. The clean solvent can be pumped directly from any of the four tanks. After exiting the core, the solvent flows directly through a BPR and into a large capacity waste tank.</p> <p>Operating conditions:</p> <p>Maximum confining pressure : 1,000 psi Maximum working temperature: ambient up to 80°C Core diameter : 1.5" (other upon request) Core length: Up to 3" Fluid flow rate: Up to 10 cc/min Wetted parts: Stainless steel Electrical: 110-220 VAC, 50 or 60 Hz Air requirement: 1,000 psi</p>	1

	<p>Weight : 70 Kg</p> <p>Solvent tanks: Four tanks are provided to store clean solvent. Each tank has a 1 liter capacity. Necessary valves and tubing are supplied with each.</p> <p>HPLC pump: Clean solvent injection at selected flow rates. Type: Reciprocating piston, pulse free Working pressure: up to 1,000 psi max Flow rate range: 0.05 to 10 cc/min Wetted material: Stainless steel and sapphire piston</p> <p>Core holder: The system is provided with a core holder designed for 1.5" diameter and up to 3" long, samples. The coreholder has one inlet and one outlet. Spiral fluid distribution grooves on the inlet face are incorporated to minimise capillary end effects. Temperature conditions are controlled with a heating mantle. Maximum working pressure: 1,000 psi Working temperature: up to 80°C Material: stainless steel Sleeve material: Viton Core diameter: 1"1/2 Core length: up to 3" Loading type: Hassler</p> <p>Confining pressure system: A hydraulic manual pump generates confining pressures up to 1,000 psi.</p> <p>Back pressure regulator: The BPR uses dry, compressed air to maintain a constant pressure at the core holder outlet so as to maintain a constant pore pressure (up to 1,000 psi).</p> <p>Valves and plumbing system: The fluid wetted parts are made from stainless steel. Hand operated valves allow the user to control the solvent flow path.</p> <p>Waste tank: A 5 liter tank used to collect the effluent solvents.</p> <p>Documentation : Operation and maintenance manuals Technical specifications Data sheet of main components General wiring drawing</p>	
2	<p>SPARE PARTS AND CONSUMABLE ITEMS</p> <p>For two years operation including: i. 5 ea Viton 1.5" sleeves for core holder ii. 5 ea sealing kit for core holder iii. 5 ea sealing kit for pump iv. 5 m of tubing 1/8"</p>	1
3	<p>SINGLE SAMPLE CAPILLARY PRESSURE CELL</p> <p>The single sample desaturation cell desaturates a core sample by virtue of the porous plate method. The sample desaturation cell is manufactured from stainless steel and resting on its base is a semi-permeable ceramic plate. It consists of a pressure vessel with an easy opening lid, clamping bolts, O-rings, seals, tubing and a pressure control panel. Three different operating pressure ceramic plates are provided with the system; namely, 1 bar, 5 bar</p>	1

	<p>and 15 bar. The control panel includes a digital pressure display, two low and high range pressure regulators and a set of control valves. Moreover, an in-line gas humidifier is integrated into the circuit to prevent in-situ evaporation during the desaturation process.</p> <p>A previously weighed, fully saturated core sample is placed on a ceramic porous plate in the pressure vessel. The latter is then shut and pressurized gas is injected into it via the inlet; the injection pressure must remain below the ceramic's nominal operating pressure so that gas does not flow through it. The pressurized gas will enter the sample and displace the water through the porous plate and into a collection container until the capillary pressure in the sample matches that of the pressure vessel. At this point, the cell is vented and the sample is weighed again with a high-precision balance. The dry, fully saturated, and current weights of the sample yield its current saturation at a particular capillary pressure. The procedure is repeated at incrementally higher pressures until the maximum porous plate pressure has been reached (15 bar). Once the experiment is completed, capillary pressure-saturation curves can be elaborated. Furthermore, knowledge of the brine density and salt concentration permit a corrected water saturation.</p> <p>Specifications: Maximum desaturation process:200 psi Minimum desaturation process:0.1 psi Chamber internal height:40 mm Chamber internal diameter:80 mm Ceramic plate pressure:15 bar Wetted materials:316 Stainless steel Air Pressure requirements:0- 250 psi</p> <p>SPARE PARTS AND CONSUMABLES ITEMS For two years operation including : Included 1 set of i.4 eao' rings for the cell ii.5 ea ceramics 15 bar iii.2 m tubing iv.5 fittings</p>	
4	ADDITIONAL CERAMIC PLATE 15 bar	10
5	<p>ACCUMULATOR</p> <p>ACCUMULATOR FOR OIL – BRINE CAPILLARY PRESSURE TEST.</p> <p>In order to perform oil-brine capillary pressure-saturation experiments, the system needs to be upgraded with a transfer accumulator containing the oil. This accumulator will be Connected between the gas outlet of the control panel and the inlet of the desaturation cell.</p> <p>Features: Volume - 2 liters Pressure- 200 psi Materials - Stainless steel Air required - Up to 200 psi</p>	1