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Polymer Test Kit - Clapper Type

295-00 - 115 Volt

295-01 - 230 Volt

Instruction Manual

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Ver. 4

OFI Testing Equipment, Inc.

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Intro

This test determines the Partially Hydrolyzed Polyacrylamide (PHPA) concentration in mud filtrates. The test involves measurement of the rate of ammonia generation while the mud filtrate is heated in the presence of sodium hydroxide solution. The ammonia is removed from the reaction vessel with a slow air purge and detected with a Dräger-Tube™. The approximate concentration of PHPA is determined by measuring the time required for the Dräger-Tube™ to turn blue. The procedure can be used to analyze all filtrates except those containing some types of lignosulfonates and acrylate filtration control additives.

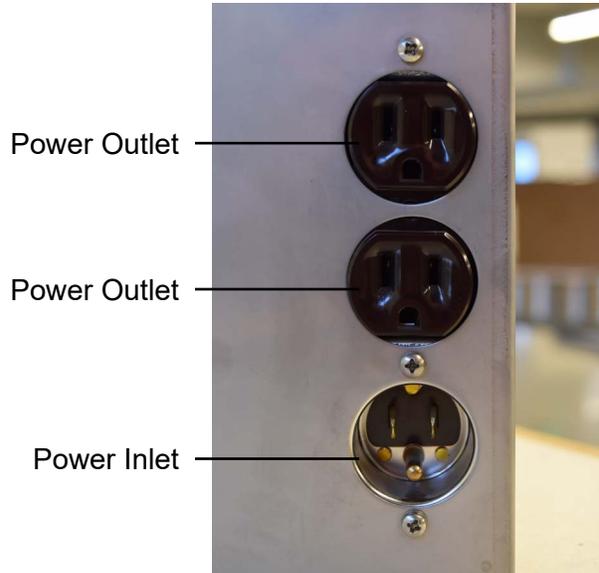
Components

#130-74	Transformer, 230 Volt to 115 Volt, 50-60 Hz (For #295-01 Only)
#140-55	Filter Paper, 3.5" (9 cm) Diameter, Box of 100, Grade #50
#151-18	Dräger-Tube™, Ammonia 5/A, Range 5 - 700 ppm
#153-02	Graduate Brush, 1.5" x 10.75"
#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#153-31	Wash Bottle, 500 mL
#153-52-01	Hydrometer Cylinder, 250 mL, Glass
#153-66	20 cc Disposable Syringe
#153-67	60 cc Disposable Syringe
#153-73-1	Glass Tubing, 4' x .25" OD
#153-77	Latex Tubing, 3/16"
#153-79	Polyurethane Tubing
#153-84	Rubber Stopper, #8, Two Hole
#154-20	Thermometer with Metal Dial, 8" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#155-25	Digital Stopwatch
#165-40	Power Cable, 115 Volts
#168-01	Hot Plate with Thermostat, 115 Volts, 325 Watts
#285-33	*Sodium Hydroxide Solution, 20%, 8 oz. UN 1824
#295-00-002	Slim Taper File
#295-00-003	Wall Receptacle
#295-00-005	Stainless Steel Case
#295-00-006	Beaker, 1200 mL, Stainless Steel
#295-00-007	Funnel, 6" Stem, Glass
#295-00-008	Pump
#295-05	Flowmeter

Procedure

The unit must be calibrated (see page 4) in order to obtain accurate results.

1. Be sure the equipment is clean and dry.
2. Connect a power source to the power inlet on the back of the case. If you are connecting to a 230 VAC power source, be sure to use the supplied step-down transformer to avoid damaging the equipment.
3. Plug the pump and the hot plate into the two power outlets on the back of the case.



4. Obtain 10 mL mud filtrate using an API filter press.
5. Remove the reaction cylinder from the stainless steel beaker. Fill the stainless steel beaker with 800 mL of water and place it on the hot plate. Heat the water to 190° - 194°F (88° - 90°C).
6. Break both ends of the Dräger-Tube™ and insert it into the tubing on the far left-hand side of the case. Make sure the numbers increase from bottom to top. Attach the outlet tubing from the glass 250 mL cylinder.
7. Fill a 50 mL syringe with 40 mL of 20% Sodium Hydroxide (NaOH) solution. Inject the NaOH into the reaction cylinder.
8. Add 10 mL of mud to the cylinder and seal it. Attach the cylinder to the apparatus.
9. Start the air pump and timer.

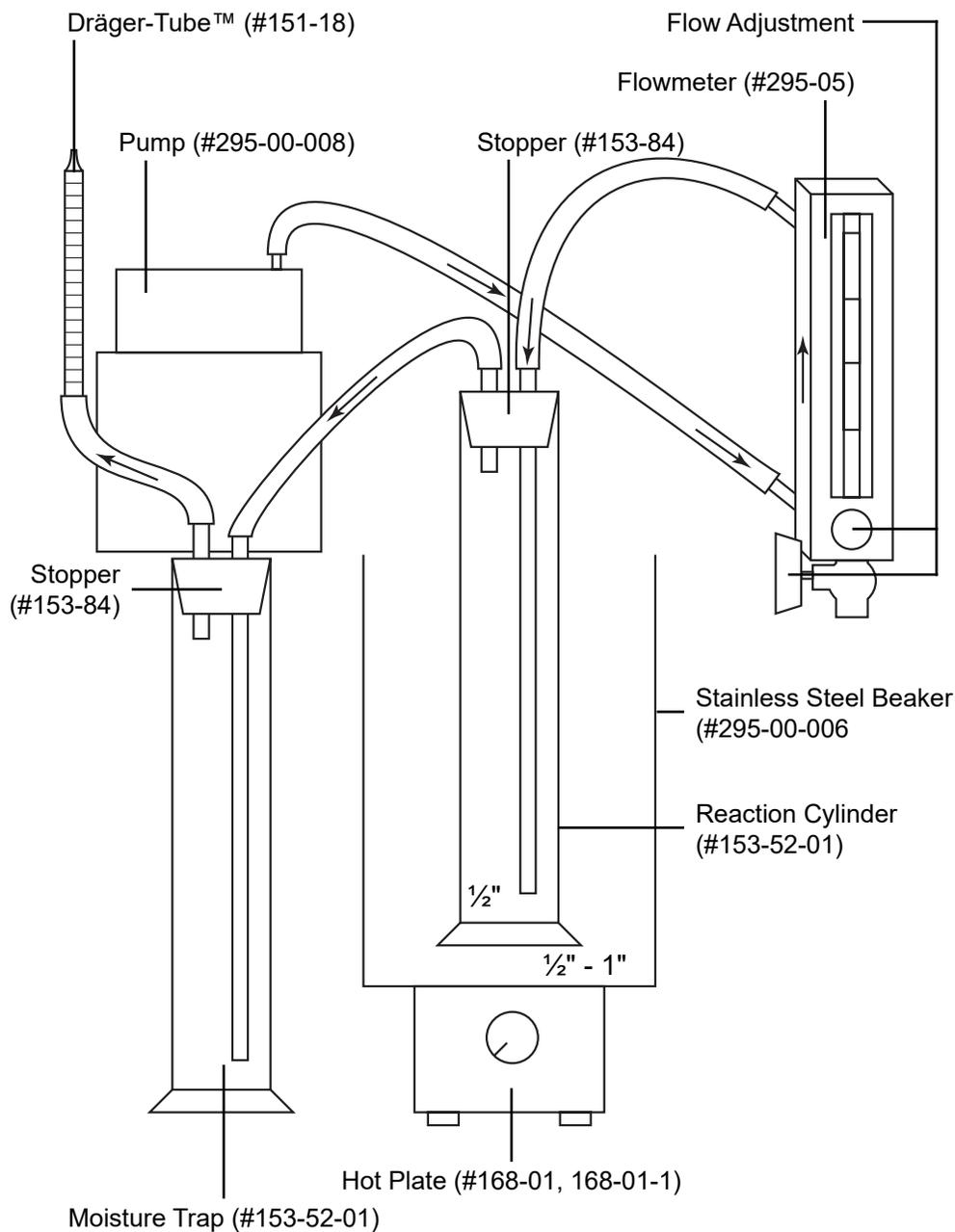
10. Record the time required for the blue color to reach the "70" mark on the Dräger-Tube™. Compare this time with the times on the calibration chart. Report the concentration of available polymer as pounds per barrel of product.
11. To clean the apparatus, remove the reaction cylinder and rinse it with water. The other cylinder may be attached directly to the air pump and flushed with air for several minutes. Both glass cylinders should be thoroughly dried before the next test.

Time to "70" Mark (Minutes)	Polyacrylamide Polymer PHPA
< 11:00	> 1
11:00 - 13:00	1
13:01 - 15:59	0.9
16:00 - 19:00	0.8
19:01 - 21:59	0.6
22:00 - 27:00	0.5
> 30:00	< 0.2

Calibration

The procedure is performed with an aqueous solution containing .5 g Partially Hydrolyzed Polyacrylamide (PHPA) polymer in 350 mL of water. Run the test on 10 mL of this fluid mixed with 40 mL NaOH. The air flow should be adjusted using the adjustment at the base of the flowmeter and the excess flow valve, so that the time required for the blue color to reach the "70" mark is 24 to 25 minutes. This will require a flow of approximately 100 cc/min. There is some batch-to-batch variations in the Dräger-Tubes™, but one calibration should be sufficient for all Dräger-Tubes™ having scale lengths of 51 to 56 mm. The unit should be recalibrated for Dräger-Tubes™ having scale lengths less than 51 or greater than 56 mm. When it is possible, always use Dräger-Tubes™ from only one batch to obtain the best accuracy. Batch numbers for Dräger-Tubes™ are located on the outside of each box. All Dräger-Tubes™ have an expiration date stamped on the outside of the box and should be used prior to this date.

Assembly Diagram



Warranty and Return Policy

Warranty:

OFI Testing Equipment, Inc. (OFITE) warrants that the products shall be free from liens and defects in title, and shall conform in all respects to the terms of the sales order and the specifications applicable to the products. All products shall be furnished subject to OFITE's standard manufacturing variations and practices. Unless the warranty period is otherwise extended in writing, the following warranty shall apply: if, at any time prior to twelve (12) months from the date of invoice, the products, or any part thereof, do not conform to these warranties or to the specifications applicable thereto, and OFITE is so notified in writing upon discovery, OFITE shall promptly repair or replace the defective products. Notwithstanding the foregoing, OFITE's warranty obligations shall not extend to any use by the buyer of the products in conditions more severe than OFITE's recommendations, nor to any defects which were visually observable by the buyer but which are not promptly brought to OFITE's attention.

In the event that the buyer has purchased installation and commissioning services on applicable products, the above warranty shall extend for an additional period of twelve (12) months from the date of the original warranty expiration for such products.

In the event that OFITE is requested to provide customized research and development for the buyer, OFITE shall use its best efforts but makes no guarantees to the buyer that any products will be provided.

OFITE makes no other warranties or guarantees to the buyer, either express or implied, and the warranties provided in this clause shall be exclusive of any other warranties including ANY IMPLIED OR STATUTORY WARRANTIES OF FITNESS FOR PURPOSE, MERCHANTABILITY, AND OTHER STATUTORY REMEDIES WHICH ARE WAIVED.

This limited warranty does not cover any losses or damages that occur as a result of:

- Improper installation or maintenance of the products
- Misuse
- Neglect
- Adjustment by non-authorized sources
- Improper environment
- Excessive or inadequate heating or air conditioning or electrical power failures, surges, or other irregularities
- Equipment, products, or material not manufactured by OFITE
- Firmware or hardware that have been modified or altered by a third party
- Consumable parts (bearings, accessories, etc.)

Returns and Repairs:

Items being returned must be carefully packaged to prevent damage in shipment and insured against possible damage or loss. OFITE will not be responsible for equipment damaged due to insufficient packaging.

Any non-defective items returned to OFITE within ninety (90) days of invoice are subject to a 15% restocking fee. Items returned must be received by OFITE in original condition for it to be accepted. Reagents and special order items will not be accepted for return or refund.

OFITE employs experienced personnel to service and repair equipment manufactured by us, as well as other companies. To help expedite the repair process, please include a repair form with all equipment sent to OFITE for repair. Be sure to include your name, company name, phone number, email address, detailed description of work to be done, purchase order number, and a shipping address for returning the equipment. All repairs performed as "repair as needed" are subject to the ninety (90) day limited warranty. All "Certified Repairs" are subject to the twelve (12) month limited warranty.

Returns and potential warranty repairs require a Return Material Authorization (RMA) number. An RMA form is available from your sales or service representative.

Please ship all equipment (with the RMA number for returns or warranty repairs) to the following address:

OFI Testing Equipment, Inc.
Attn: Repair Department
11302 Steeplecrest Dr.
Houston, TX 77065
USA

OFITE also offers competitive service contracts for repairing and/or maintaining your lab equipment, including equipment from other manufacturers. For more information about our technical support and repair services, please contact techservice@ofite.com.