EQUIPMENT NEWS

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science *does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to* Science, *Room 740, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).*

■ ION-EXCHANGE RESINS of specific utility in chromatographic separation and identification, especially of components of complex amino acid mixtures, are offered in partcile size range of 400 to 600 mesh. Amberlite CG-120 is a strongly acidic cation-exchange resin in sodium form; Amberlite CG-50 is a weakly acidic cation-exchange resin in hydrogen form. (Fisher Scientific Co., Dept. S901)

■ NUCLEAR REACTOR, for training purposes, is prefabricated and can be installed in existing buildings without excavation. The reactor is of the pool type with output of 1 watt. Exterior measurements, installed, are 10 ft high by 14 ft 7 in. by 16 ft 5 in. Water and electricity are the only utilities needed for operation. Price of the complete reactor, including shielding and instrumentation, is expected to be between $135,000 and $150,000. (ACF Industries Inc., Erco Division, Dept. S905)

■ PARTICLE SIZE DISTRIBUTION, in the range 1 to 100 μ, is recorded continuously by an instrument which records the weight of accumulated particles as they settle on a balance pan within the suspension liquid. The integral curve obtained in this way may be converted into a curve relating particle size to number of particles. Sensitivity of the balance is 30 μa/mg. Accuracy is stated to be ± 2 percent. (G. F. Bush Associates, Dept. S906)

■ FLUORIMETER extends the Galvanek-Morrison fluorimeter to detection of beryllium and uranium in solutions. Interchangeable attachments permit quick switching from solid to liquid samples. For analysis of liquids, four 3-ml cuvettes, three sample and one standard, are accommodated on a single slide. Detents locate each sample. (Jarrell-Ash Co., Dept. S908)

■ SOURCE CALIBRATOR is designed for quick determination of the radioactivity of liquid or solid radioisotope sources. Two well-type ionization chambers cover the range from 5 μc to 500 mc. Response is said to be largely independent of sample size and sample position over a wide range. Over-all accuracy is ± 5 percent. (Tracerlab, Dept. S928)

■ INFRARED CAMERA is designed to give a quantitative photographic record of the temperature distribution of the objects pictured. In operation, the camera is sighted on the object to be photographed. An internal mirror scans the object, point-by-point, reflecting radiation from the object onto an infrared detector. A light beam, modulated according to the detected signal, is similarly scanned over a photographic film which is developed to provide a visible image. Temperature differences of 0.02°C can be detected. (Barnes Engineering Co., Dept. S913)

■ VACUUM GAGE combines thermocouple gage for forepump vacuum with a Philips gage for high vacuum. Five ranges extend from 10^{-4} to 10^{-8} mm-Hg. A high-voltage RF power supply excites the ionization gage, and ionization current is measured by a vacuum-tube voltmeter with appropriate resistors. Provision is made for outgassing the heater in the Philips gage. Built-in circuits provide calibration. (Wave/Particle Corp., Dept. S910)

■ REMOTE-HANDLING TONGS are specifically designed for working with high-level radiation within shielded caves, hot cells, and irradiation chambers. The tongs are of ball-swivel construction. The ball swivel itself is completely shielded with lead, and it is mounted directly in the protective wall. A variety of interchangeable heads permits many specialized operations. These heads may be attached remotely and stored within the cell when not in use. (The Atomic Center Inc., Dept. S911)

■ METABOLIC CHAMBER is an air-tight room 13 by 9 by 8 ft with an additional outer space to house heaters, cooling coils, and circulation fans. Air circulation is 1300 ft^3/min, allowing complete exchange within 1 minute with air velocity less than 50 ft/min. Noise level is less than 40 db. Temperatures between 40° and 120°F and relative humidities of 10 to 95 percent are obtainable. Sealed passages allow wires and tubes to be brought into the chamber. (Tenney Engineering Inc., Dept. S914)

■ CERAMIC CEMENT can be used to seal most glasses, ceramics to glass, metal to glass and metal to metal. Service temperature extends to 400° to 450°C. Seals are made at 400° to 450°C, and a short heat treatment transforms the soft cement into a strong glass-ceramic. Materials to be sealed with the cement must have an expansion between 85 and 110×10^{-7} in./in. °C and must be able to withstand the sealing temperature. (Corning Glass Works, Dept. S926)

JOSHUA STERN
National Bureau of Standards

Before you buy your hematocrit centrifuge...

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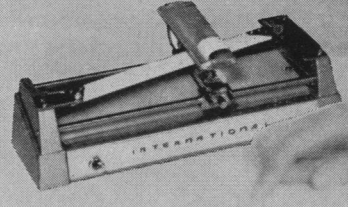
NEW PRECISION READER... MODEL CR—Fast, foolproof readings from any length capillary tube. The magnifying glass and light under tube make readings easier, faster and more accurate.



International Equipment Co.

1284 SOLDIERS FIELD ROAD, BOSTON 35, MASS.

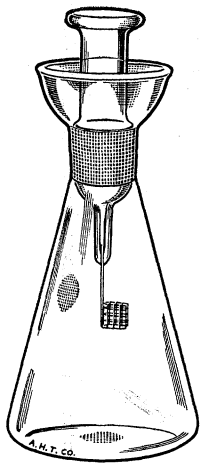
Please have your representative call as soon as possible to arrange a demonstration.

Name.....Title.....

Institution.....

Street & No.....City & State.....

- *For determination of halogens, sulfur, traces of metals, etc., in organic materials*
- *A new, simplified technique for micro and semimicro quantities*
- *End-products free from metallic contaminants*



6470-G. Complete Assembly

Thomas -Schöniger
MICRO COMBUSTION APPARATUS
. . . for catalytic combustion of organic materials in oxygen

Originated by Dr. Wolfgang Schöniger, Sandoz, A. G., Basel, Switzerland, for the rapid determination of sulfur, halogens and traces of metals in organic substances by simple combustion in oxygen. No elaborate equipment is required, negligible pressure is produced and the combustion products are free from metallic contaminants.

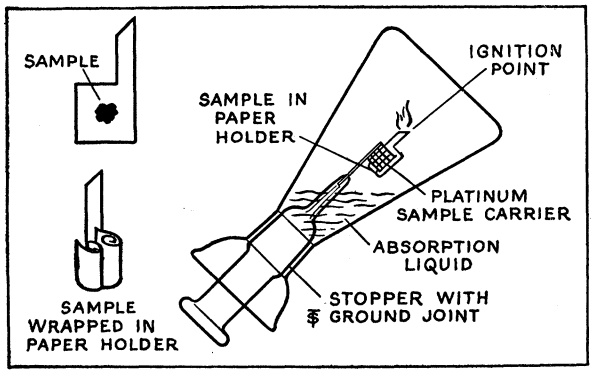
The procedure simply converts organic materials into soluble combustion products, which are then analyzed for chlorine, bromine, iodine, fluorine and sulfur by usual inorganic gravimetric or volumetric methods.

Consisting of a heavy wall, conical flask of borosilicate glass, with deep, bell-shape flaring lip and elongated interchangeable ground glass stopper with attached U-shape platinum wire gauze sample carrier, and small, specially cut, unsized low ash paper sheets which serve as holders for the sample.

In use, the sample is wrapped and folded in the paper with the narrow tail extending for ignition. Sample is then placed in the platinum carrier and the flask is charged with a small amount of absorbing liquid as required for the specific reaction and with free-flowing oxygen. The paper tail is then ignited; the stopper with flaming sample is seated in the flask and flask then inverted at an angle. The catalytic combustion proceeds at high temperatures and the combustion products are absorbed in the liquid, which forms a seal around the stopper. After cooling, the inside surfaces of the flask and stopper are thoroughly rinsed. Titrations can then be made directly in the flask. Due to the inherent fragility of glass in the presence of reduced pressure, general safety regulations should be followed, such as the use of shield, goggles, etc.

Results compare favorably, i.e., within ± 0.3%, with conventional combustion or decomposition methods. The method has been used extensively for analysis of the above elements but, because of the low cost, time and space saving features, should find wide use for materials which undergo complete combustion. The method is useful in research, in educational laboratories and in industrial control.

See Wolfgang Schöniger, "Eine mikroanalytische Schnellbestimmung von Halogen in organischen Substanzen," *Mikrochimica Acta, 1955, Heft 1, pp. 123-129;* and "Die mikroanalytische Schnellbestimmung von Halogenen und Schwefel in organischen Verbindungen," ibid. *1956, Heft 1-6, pp. 869-876.*



6470-E. Combustion Apparatus, Thomas-Schöniger (Schöniger Flask) Micro, as above described, 300 ml capacity, for samples up to 10 mg. With No. 34/28 standard taper stopper and platinum wire gauze sample carrier weighing approximately 1.5 grams, 100 Paper Sample Holders and directions for use **28.35**

6470-G. Ditto, Semimicro. Similar to 6470-E but with 500 ml flask, for samples up to 100 mg..... **29.00**

6471-F. Paper Sample Holder, only, an unsized, specially selected paper, die-cut to facilitate wrapping, folding and igniting samples in above apparatus. Per box of 100..... **.75**

Thorin Indicator, for use with above in determination of sulfates. Per 5 gram bottle..... **4.99**

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