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Testosterone-7 α -H ³ Sulfate	10

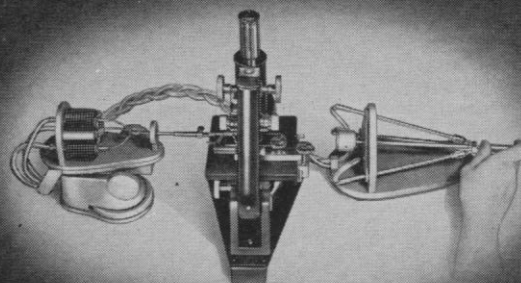
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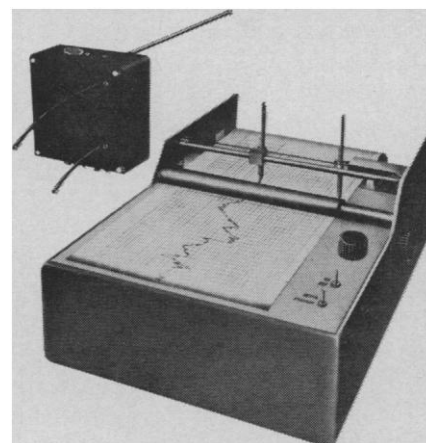
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Three low-cost, wide-chart UV FLOW ANALYZERS!

Here's great news for analysts who want to monitor column effluents, containing proteins and/or nucleotides, on a tight budget. It's the Canalco Wide-Track 85 Series—first UV flow analyzers to combine wide chart recording, highest sensitivity and real economy.

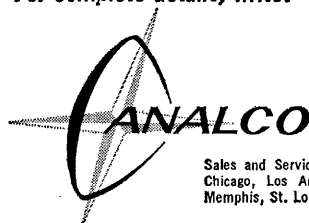
Using a true potentiometer-type recorder with chart a full 8½ inches wide, the Canalco Wide-Track 85's pick out proteins and nucleotides that other systems can't even see. Manual (or optional automatic) scale expansion gives pen deflection from baseline of a *quarter-inch* for only 0.010 mg/ml of a typical protein, or 0.05-ug/ml of a typical purine—*several times the sensitivity of any other UV flow monitor!*

Standard features of the Wide-Track 85 Series include special stabilizing circuitry, with a reference monitor that eliminates effects of line voltage changes, lamp aging and the like; event marking pen to show fraction collector actuation; linear absorption scale to maximize sensitivity in low absorption ranges; and narrow-band illumination for quantitative linearity and accuracy.



You can choose the economical Model A, with manual scale expansion, the Model SB with automatic scale expansion, or the Model BC for double-beam baseline compensation with UV absorbing solvents in gradient elutions. Prices start as low as \$895 for a complete system including wide-chart recorder.

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Is ersatz ever better?

(Or: is it excessively presumptuous to claim—as we do herein—that our new reconstituted C¹⁴ protein hydrolysate is always all ways better for protein labeling than a natural C¹⁴ protein hydrolysate?)

The problem with using a natural yeast or algal C¹⁴ protein hydrolysate for protein labeling is that you *start* your work with numerous and varied unneeded unknowns since the natural hydrolysate is relatively crude and may contain as much as 30-40% of non-amino acid material. And who needs such gratuitous complications?

The uncertainty that comes from undefined and unwanted contaminants can now be avoided by using our new reconstituted C¹⁴ protein hydrolysate which consists of C¹⁴ amino acids (and C¹⁴ amino acids *only*.) This product is exclusive with us. At least for the nonce.

Our work gets started (as *yours* shouldn't) with the typically unpredictable C¹⁴ yeast hydrolysate. But its amino acids are then separated and purified and the extraneous materials eliminated. At this point we have the individual amino acids, each with a *minimum* radiochemical purity of 99%. Thirteen of these are then recombined so as to mimic closely their proportions in the natural hydrolysate.

Two things can now be said about this reconstituted protein hydrolysate: (1) it has a 100% biosynthetically-prepared L-amino acid composition, and (2) all of the amino acids are uniformly C¹⁴ labeled. Or, more simply: this mixture is free of any non-amino acid material, hot or cold, and all of the amino acids are hot.

If you reached this point assuming that the extra processing, the extra purity, the extra convenience to you, is going to *cost* you extra—forget it. It won't. Rather surprisingly, 100 μ c of this C¹⁴ reconstituted protein hydrolysate costs only \$35. 500 μ c is \$170. 1 mc runs \$320. And 2 mc a mere

\$600. (For a pleasant surprise, compare these prices with what you now pay for the crude natural product.) Also, please note that you get a Product Analysis Report with every shipment with the specific activity of each of the component amino acids. The other specifications for this product look like this:

	sp. act. mc/mmole	μ c/mc of mix.		sp. act. mc/mmole	μ c/mc of mix.
L-Ala-C ¹⁴	> 70	80	L-Phe-C ¹⁴	> 168	80
L-Arg-C ¹⁴	> 130	50	L-Pro-C ¹⁴	> 110	50
L-Asp-C ¹⁴	> 110	125	L-Ser-C ¹⁴	> 85	80
L-Glu-C ¹⁴	> 165	125	L-Thr-C ¹⁴	> 100	80
L-Ileu-C ¹⁴	> 110	100	L-Tyr-C ¹⁴	> 150	80
L-Leu-C ¹⁴	> 130	50	L-Val-C ¹⁴	> 100	50
L-Lys-C ¹⁴	> 180	50			

mixture of purified L-amino acids is in 0.01 N HCl/ 100 μ c vials contain 100 μ c/ml / all other vials contain 1 mc/ml

One interesting final point: we also have a mixture that is comparable in essentially every respect to the reconstituted protein hydrolysate shown above but with only these four C¹⁴ essential amino acids: arginine, leucine, lysine, valine, and with total activity divided equally among these. This too is new. We call it our C¹⁴ L-Amino Acid Protein Labeling Mixture (catalog no. 3122-06). It, and the reconstituted protein hydrolysate (catalog no. 3122-08), are immediately available to you from stock. Write, or call us collect at 914-359-2700. Ask for Maryann.

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New Products

CdS exposure meter, by Watson and Sons, Ltd., intended primarily for determining exposure times in photomicrography, including phase contrast, is a battery-operated integrating meter, measuring total light over the whole field (not intended for dark-ground or fluorescence applications where total light depends more on the number of particles present than on their brightness). Instrument consists of a CdS cell mounted at the end of a coiled cable and a 9.75 by 8.25 by 5.5 inch deep (24.8 by 21 by 14 cm) cabinet containing the meter, selector switch, and calculator. The meter, a large, taut-band suspension microammeter, provides 1-percent accuracy. The selector switch chooses one of four decade ranges covering the intensity range 100,000 to 1. Meter readings are quickly converted to exposure times by the slide-rule calculator placed below the meter. Instrument can be used with any microscope by replacing the eyepiece with the photocell of the meter, applying the cell to the ground-glass screen of a plate camera, or inserting the cell into the special photometer tube of a photomicrographic microscope.—D.J.P. (William J. Hacker & Co., Inc., Dept. S542, P.O. Box 646, W. Caldwell, N.J. 07007)

Disposable membrane-filter assembly. Nalgene Filter Unit, complete, sterile, packaged, ready for immediate use and disposal, consists of a Gelman Metrical membrane, filter cup, cover, support plate, porous polyolefin support, and suction flask. Available with either a plain membrane (0.20- μ porosity) or a grid membrane (0.45- μ porosity); effective filter area, 12.96 cm²; filtrate capacity, 115 ml. Flow rates: 30 ml min⁻¹ cm⁻² at 700-mm Hg (0.2- μ membrane); 70 ml min⁻¹ cm⁻² at 700-mm Hg (0.45- μ membrane). In use,

the unit is removed from its protective bag, inserted in a clamp, and attached to a low-pressure source. After filtration, the membrane is retrieved or the filtrate is dispensed (or both). The unit is then discarded; cleaning, autoclaving, and assembly are eliminated. Especially useful in medical-research and clinical laboratories; usable for both sterile filtrations and bacteriologic-culture work. List: package of 12, \$9.—D.J.P. (Nalge Co., Inc., Dept. S461, Panorama Creek Drive, Rochester, N.Y. 14625)

Multiple microscope illuminator, Reichert Duorex, is a multiple light source designed for use with any upright microscope. Light sources include a 200-watt mercury-vapor arc burner (Osram HBO-200), a 150-watt xenon arc burner (Osram XBO-150), a 30-watt low-voltage tungsten filament, and a 100-watt iodine-quartz lamp. The tungsten-filament lamp can also be used concurrently with either mercury arc or xenon arc burner for dual illumination or "mixed" light. With these sources, microscopes can be used for fluorescence microscopy and antigen-antibody techniques, simultaneous-contrast fluorescence microscopy, photomicrography, and projection. Microscope and Duorex are quickly aligned to form one integral unit, with completely enclosed light path for true Koehler illumination. Power packs for operating mercury and xenon burners are regulated to prolong life of the burners.—D.J.P. (William J. Hacker & Co., Inc., Dept. S456, P.O. Box 646, W. Caldwell, N.J. 07007)

Pyrolyzer for infrared spectroscopy, Barnes model PY-1, is a self-contained system for high-speed reduction of obstinate samples to a form suitable for infrared analysis. Particularly useful for materials difficult to dissolve for transmission spectroscopy, or for solids that defy ATR techniques. Simple and convenient to use: samples are prepared directly for mounting in all standard spectrophotometers; no transfer of pyrolyzate from one vessel to another. Pyrolysis is accomplished by means of a high-resistance metal rib-

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Differential microcalorimeter measures heat changes as small as 0.1 mcal in samples sized from 2 to 4 ml. A mechanical device mixes up to 1 ml of a reagent with up to 3 ml of a second reagent in 0.1 seconds, with less than 1 mcal of heat resulting from mixing. The calorimeter is contained in a cylindrical, stainless-steel case 12 inches in diameter and 12 inches high (30 by 30 cm). Inside, several inches of foam insulation encapsulate an aluminum vessel jacketed to carry a heat-exchange fluid from a constant-temperature circulator; the vessel may also be temperature-conditioned by a heater coil wound around it. The calorimeter may thus operate in an ambient range from -20° to 100°C. The aluminum vessel encloses a cylindrical graphite block which contains the same capsule. A separate single-junction thermocouple is located in each capsule, with the reference in the graphite block. A mercury reservoir quickly brings the capsules to temperature equilibrium. Electrical heaters for insertion into the cups are available for calibration or measurements of heat capacity. Temperature rise may be programmed for determining melting points of nucleic acids. Sample capsules, normally of nickel, may be gold-plated or varnished to avoid damage by corrosion.—D.J.P. (Science Products Corp., Dept. S445, Route 46, Dover, N.J.).

The material in this section is prepared by Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

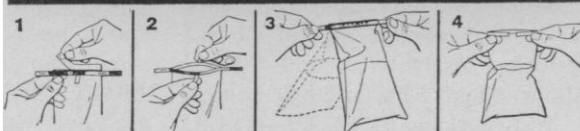
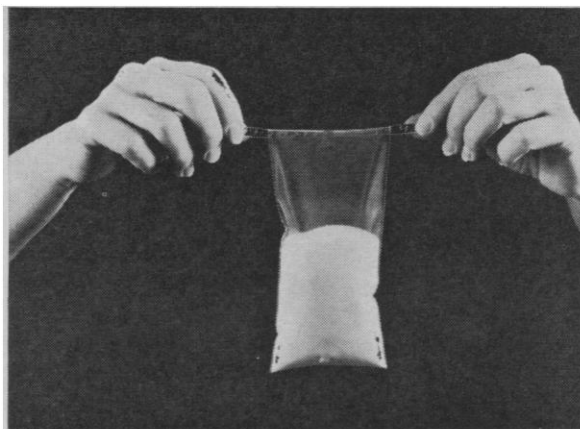
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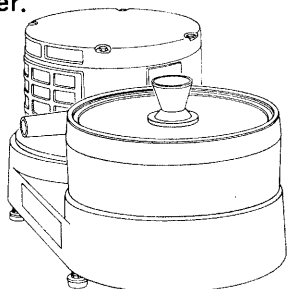
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Now you can produce jagged subsieve particles with our 600 m.p.h. *single*-impact mill.

1. The Vortec M-1, utilizing a single-impact to produce fresh sharp-edged surfaces, blasts materials onto tungsten carbide targets at over 600 m.p.h. Adjust the rotor speed of our unique system and you can get particle sizes from coarse grinds to an extra-fine grind in the subsieve range (—325 mesh).

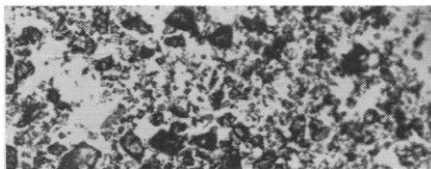
The M-1 handles abrasive materials such as silicas and aluminum oxides as well as soft materials such as talc and limestone. The M-1 Impact Mill is non-clogging, easy-to-clean, and self-cooling. Output ranges up to 2,000 pounds per hour, and the end product is not affected even by drastic changes in the feed rate. Vortec impact mills also can run in tandem or closed circuit with an equally versatile Vortec particle classifier.



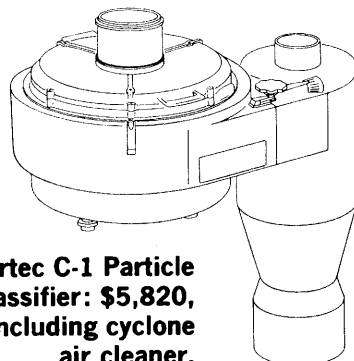
Vortec M-1 Impact Mill: \$5,470

2. These Ottawa silica particles were reduced from 100%

above 600 microns to 70% below 44 microns in a single run through the M-1 mill.



3. Now, for the first time, you can classify particle bands in the subsieve range with an accuracy of ± 2 microns (or better). While in operation, the Vortec C-1 Particle Classifier is instantly adjustable to any required separation point. Manual machine changes aren't necessary. Merely turn a dial which controls the air flow separation system. The C-1 handles low density materials such as talc, limestone, and diatomite or high density mate-



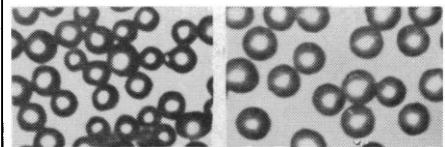
Vortec C-1 Particle Classifier: \$5,820, including cyclone air cleaner.

rials such as tungsten and nickel powder.

Vortec's particle classifier is designed for small production runs, pilot plant operation, research and development, and particle size distribution analysis for production control. Its output ranges from a few grams to 750 pounds an hour.

4. At left: Attempt to obtain tungsten powder in the 7 to 8 micron range with conventional separation causes high scatter of sizes.

At right: Vortec separation provides the desired uniform particle band.



For more detailed information or brochures on the C-1 and M-1, or if you require classifying or milling equipment with capacities to 50 tons per hour, write or call Mr. T. G. Partridge:



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A modular printout system for use with Model 139 Spectrophotometer has been introduced by us to provide a printed record of readings and their identification on standard paper tape. The system consists of a special Digital Readout,* a Printout and an Identification Sequencer.

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The Printout is fed by the Thomas Digital Readout* which latter indicates the absorbance or transmittance directly as four large digits in an illuminated window. Readings are accurate to $\pm 0.1\%$. These accessories increase speed and accuracy of readings, particularly in routine serial determinations.

9096-E30. MODEL 139 SPECTROPHOTOMETER with Printout System, range 195 to 900 $m\mu$, complete outfit as shown in illustration consisting of Spectrophotometer with standard wide-range phototube, hydrogen and tungsten lamps, 4-place cell holder, set of 4 matched fused silica 10 mm absorption cells, etc., and accessories to provide printed readings, i.e. Thomas Print-Drive Readout,* Printout and Identification Sequencer. For 115 volts, 50 or 60 cycles, a.c. **5350.00**

9096-J10. Print-Drive Readout,* Thomas, with circuitry to feed Printout. For 115 volts, 50 or 60 cycles, a.c. **900.00**

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*For use only on Model 139 Spectrophotometers sold by us which have been modified in our plant for this purpose.

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