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®

THE WEEKLY SUMMARY OF CURRENT SCIENCE

Celestial Diamond Ring

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A SCIENCE SERVICE PUBLICATION

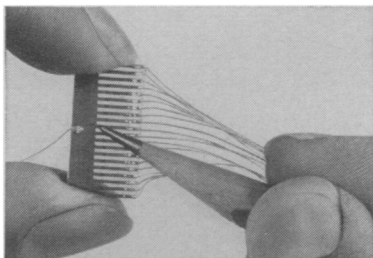
Kodak reports to laboratories on:

the most sensitive lead sulfide photoconductive cell available...
keeping bronzing lacquers from gelling

Ektron detectors

We are going to stop being coy about it and come right out and say that a certain manufacturer of materials for "chemical photography" whose name appears at the bottom of this page is now also manufacturing the most convenient device for the *electrical* detection of radiant energy.

It is called the *Kodak Ektron Detector*. It is the most sensitive lead sulfide photoconductive cell presently available. Its response to a 2500 K tungsten light source is about the same as that of a red-sensitive gas-filled phototube of comparable sensitive area under comparable conditions. But vibration doesn't bother it, for it consists merely of a prepared surface, operating right out in the open. Even more important, the sensitive surface can be of any size or shape. The 20 little black dots on this $\frac{3}{4}$ -inch slip of glass, for example, are individual photoconductive cells.



So far you've read only half the story, possibly the less significant half. Though the *Kodak Ektron Detector* competes with the phototube and photomultiplier on their home grounds in the visible spectrum, it reaches its maximum sensitivity at 2μ in the infrared. At 2.7μ , operating at room temperature, it gives a hundred times the response of a good laboratory bolometer. All in all, the useful response extends from 0.3μ in the ultraviolet to 3.5μ in the infrared. Usable frequency response

is from steady illumination to 5,000 radiation pulses per second.

Two of the biggest vistas that open up:

1) Rugged, low-cost switching in which light replaces moving parts. Better yet, forget about visible light and operate your source cool enough to last just short of forever.

2) Simple automatic control for the process industries, based on the characteristic near-infrared absorbance bands of your process liquid, gas, or solid. (Even manufacturers of laboratory spectrophotometers have been turning to *Kodak Ektron Detectors* because where else can they get such high gain out to 3.5μ ?)

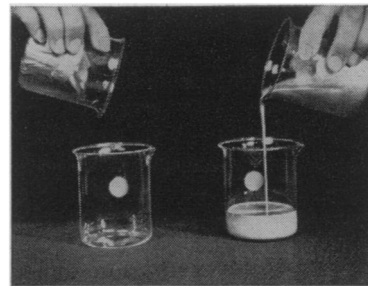
This thing is more than a gleam in our eye. We are in production and can accept orders today. You transact your business with a man named W. F. Swann at Eastman Kodak Company, Rochester 4, N. Y. He can tell you about the various structural types of Kodak Ektron Detectors, the many sizes and shapes in which we make them, and the story on matched sets and multiple-detector units. Figure from \$14 to \$24 apiece for the various standard Kodak Ektron Detectors you'll need for working out your ideas. We can talk later about quantity prices.

For gilt

Cellulose acetate butyrate is our pigeon. The fortunes of war and commerce during the past century have often revolved around the results of modifying cellulose chemically. In our own case, it was a happy day when first we looked into the possibilities of introducing butyryl groups among the acetyls in cellulose acetate. That was quite a while ago. Ever since, we have been investigating the dickens out of all possible ratios of acetyl, butyryl, and native hydroxyls on the cellulose structure. The latest facet of our latest triumph concerns bronzing lacquers.

Have you ever found that a can of such stuff, carefully stoppered at the end of work, has turned to a

useless jelly overnight? Such is the exasperating way of cellulose nitrate when it serves as a carrier for metal powder.



Now, in the beaker at the right is some lacquer made instead with a new low-viscosity cellulose acetate butyrate we call *Half-Second Butyrate* (from the length of time taken by a standard ball to fall through a standard length of a standard solution of the ester). Both it and its nitrate-based equivalent on the left were prepared 24 hours before the picture was made and treated alike.

This is nothing. We have in one of our laboratories a durable lacquer made with *Half-Second Butyrate* as the powder vehicle over a year ago and given every opportunity to gel under the standard procedure for this sort of test. It hadn't gelled yet at last report.

Though steam radiators are not as common as they used to be, the market for bronzing lacquers remains healthy. Furthermore, the new Half-Second Butyrate has bright prospects for the high strength and flexibility of its films down to low temperatures, for its low flammability, color retention, and resistance to ultraviolet. It is the only film former with such characteristics that sprays easily. Eastman Chemical Products, Inc., Chemicals Division, Kingsport, Tenn. (Subsidiary of Eastman Kodak Company), will be pleased to send data on formulation for paper lacquers, plastic lacquers, wood lacquers, metal lacquers, heat-sealing adhesives, melt coatings for both cloth and paper.

Prices quoted are subject to change without notice.

This is one of a series of reports on the many products and services with which the Eastman Kodak Company and its divisions are . . . serving laboratories everywhere

Kodak
TRADE-MARK