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Letter to the Editor

The Disposable Glass Culture Tube as a Cuvette

Since October 1967 we have had extensive experience using disposable test tubes as disposable cuvettes in haema-

passing a broad beam of light through the cuvette lead to erratic results. Larger tubes, 16 mm and 19 mm diameters, are not uniform. The thin-walled disposable flint glass and borosilicate tubes made by Kimble have been mainly used. We have also had experience with Pyrex tubes by Corning.

The uniformity of the disposable test tubes seems equal to commercially available cuvettes and superior to re-used cuvettes that are scratched and routinely used as demonstrated in the Table below.

The disposable cuvette is faster and more trouble-free than flow-through cuvettes and has increased the output in our clinical chemistry section. The disposable test tube costs approximately 1-3 cents (US) each. Besides the convenience of being disposable, they are packaged clean and free of scratches.

new supplier. The thick-walled tubes are not optically uniform for use as disposable cuvettes.

We have not noticed any significant increase in day-to-day precision on aliquots of frozen pooled serum for the tests used in clinical chemistry. For haemoglobinometry, using a cyanmethaemoglobin method over a two-year period and aliquots of frozen citrated whole blood, our day-to-day precision, as 2SD, varied from 0.4 to 0.5 mg per 100 ml using specimens with mean values of 12 to 13 g per 100 ml.

We conclude that the use of 10 to 13 mm diameter thin-walled disposable glass tubes as disposable cuvettes is justified. Verification of our experience should be sought if one wishes to use disposable test tubes or instruments other than those found satisfactory in this communication.

Type of Tube	No. of Tubes	OD			2CV (%)
		Mean	Range	2SD	
Spectronic 20 cuvette, from daily reused supply ¹	42	0.468	0.455-0.490	0.020	4.2
Spectronic 20 cuvette, selected for adequate condition ²	32	0.464	0.455-0.480	0.014	3.0
Disposable, flint glass culture tube	275	0.455	0.442-0.465	0.010	2.2

Table Optical densities of cuvettes and disposable tubes with rotation

¹On inspection, some of these were noticeably scratched.
²These were inspected, so that they were all unscratched.

toLOGY for doing haemoglobin determinations and in clinical chemistry generally. The 13 by 100 mm test tubes are most convenient, but we have had experience with 12 by 75 mm and 10 by 75 mm tubes as well. We have extensively used the Coleman Jr, Coleman Jr II, and the Spectronic 20 spectrophotometers; some personal experience with instruments

We have recently changed over to the routine use of borosilicate as we noted the presence of residual alkali in the flint glass tubes. However, we did not encounter any interference due to residual alkali which was probably buffered by patients' specimens and/or reagents. Recently we have seen a thick-walled grade of disposable tubes from a

IRWIN SCHOEN
Division of Pathology,
Cedars-Sinai Medical Center,
P.O. Box 54723,
Los Angeles, California 90048

EDWARD L. ELLSWORTH
USPHS National Center for
Air Pollution Control,
Cincinnati, Ohio 45237

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