TABLE I

Analytical Data

Characteristics	Calculated	Determined
Iodine value	68.2	69.2
Hydroxyl value	450.00	452.00
Saponification value	150.00	151.00
C	67.7%	66.7%
H	10.8%	10.7%
Monoricinolein[a]		98%
Melting point		39.1C

[a] AOCS Cd-11-57.

Figure two is an infrared spectrum of a 2% solution of the sample in chloroform, taken on a Perkin-Elmer grating infrared spectrophotometer, Model 257, using a 1-mm sodium chloride cell.

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Gas Flowmeter From a Leak Detector and Potentiometer

CARRIER-GAS FLOW from a flame ionization detector (FID) is often troublesome to measure because the burner housings must be opened or partially dismantled. A Gow-Mac Leak Detector (GM-LD), formerly Gas Hound, can be operated as a specialized flowmeter that particularly applies to this measurement problem.

A 50K ten-turn potentiometer with locking duodial when wired in the meter line of the GM-LD allows its sensitivity to be attenuated so that, on the "low" range, large amounts of helium carrier-gas may be monitored against a background of air from the FID. Usually the measurement is made with no hydrogen flowing through the burners. However if the flames are adjusted to combust the hydrogen stoichiometrically, helium measurements may be made while the burners are operating. Results are best without hydrogen since no water vapor will be introduced into the GM-LD.

A typical GM-LD/flowmeter calibration procedure is as follows:

1) Hydrogen and helium to detector temporarily shut off.
2) Airstream through burner housings adjusted to 200 cc/min with the aid of a soap-film flowmeter.
3) Helium carrier turned on and adjusted to 70 cc/min (soap-film meter).
4) GM-LD used to monitor FID effluent from any convenient opening in the burner housing while 50K potentiometer is adjusted so that 70 cc/min helium in 200 cc/min air causes full-scale meter deflection. The potentiometer adjustment is locked and recorded so that it may be returned to this value without recalibration. Measurements should be made at the same opening in the FID housing so that readings are not influenced by variations in probe location.
5) Helium flow reduced, measured with the soap-film meter, and recorded;
6) GM-LD meter deflection at this lower helium flow recorded; and
7) Repeat steps 5 and 6.

Typical calibration data are:

Actual He Flow (measured with soap-film meter) cc/min	GM-LD Meter Deflection (divisions right)
8	12
16	19
24	24
31	28
38	32
46	35
53	38
59	42
66	44
72	47

This table or a plot from its data allows a quick and fairly accurate measurement of column flow without dismantling the FID assembly. The adjustable 50K resistance, when turned to its lowest value, restores the GM-LD to its former sensitivity.

Addition of this single potentiometer is a simple modification that has made the GM-LD in this laboratory a more useful instrument.

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