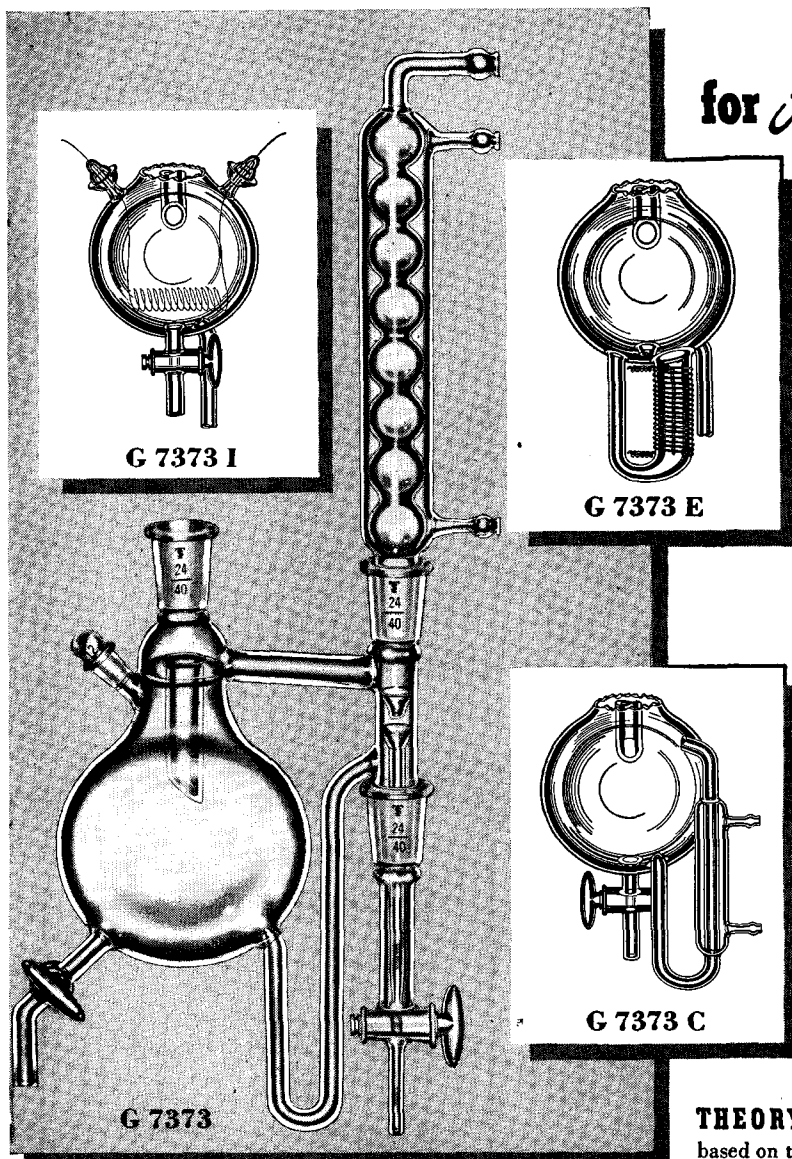


the New, Improved *Othmer* Still

for *Accurate* Determination of Vapor-Liquid Equilibrium

For the design of equipment and the analysis of problems in the field of distillation and related unit operations, vapor-liquid equilibrium data are essential. The most *accurate* and *convenient* way of obtaining these data are with an equilibrium type still as exemplified by the all-glass Othmer design.

The new improved Othmer Still* is the latest development of Dr. D. F. Othmer, of the Polytechnic Institute of Brooklyn, one of the foremost authorities on equilibrium stills. The Emil Greiner Company has manufactured many of these stills, which have found wide application in engineering research and have become standard pieces of laboratory equipment. We have also cooperated with Dr. Othmer in the manufacture of modifications of his still for specialized applications. For this reason, we are prepared to provide free consultation for the development and manufacture of any specialized stills you may require, in addition to the Standard Othmer stills listed.



G 7373—Distilling Apparatus, Improved Othmer, Vapor-Liquid Equilibrium, Pyrex Brand Glass, for direct external heating. Complete with reflux condenser, F-24/40 joint, and distillate trap receiver, F-24/40. F-24/40 on top of boiler flask and F-12/18 with plug at side. Each55.50

G 7373 C—Additional Reflux Cooler for G 7373, small heat

exchanger on reflux tube to boiler. Each9.50

G 7373 E—Additional External Electrical Heater for G 7373, 250 watt nichrome wire wound on one leg of "U" shaped projection. Each 10.50

G 7373 I—Additional Internal Electrical Heater for G 7373, 250 watt nichrome element is inserted through two 18-9 ball joints with sealed-in platinum contact wires. Each11.00

Note: Additional cooler or heaters if desired must be ordered at the time of ordering STILL, since they are incorporated as an integral part of the STILL.

Inquiries as to specially constructed STILLS are invited.

THEORY OF OPERATION The operation of these stills is based on the reflux equilibrium principle. Vapors in equilibrium with the boiling liquid mixture in the boiler are completely condensed into a distillate trap and the overflow from the trap is refluxed to the boiler. When the composition and quantity of vapor leaving the boiler is exactly equal to the composition and quantity of distillate returning to the boiler, equilibrium is established and the boiling point remains constant under the total pressure imposed on the systems. Samples of the liquids in the boiler and trap are then removed for chemical or physical chemical analysis to determine the compositions of the respective liquid and vapor phases in equilibrium.

*Othmer, D. F., *Anal. Chem.* 20, 763 (1948)

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