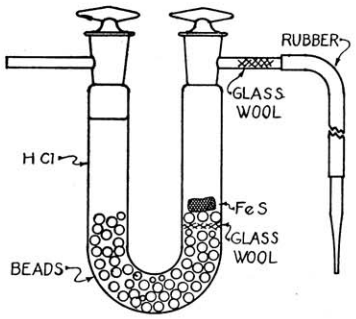
GAS GENERATOR *for* MICROCHEMISTRY

SIDNEY SUSSMAN

Polytechnic Institute, Brooklyn, New York

SEVERAL gas generators have been suggested for use in microchemistry and qualitative microanalysis (*1–6*). The generator presented here has been used for the past year at the Polytechnic Institute of Brooklyn. Although it has been used primarily for the generation of hydrogen sulfide, it may be employed as readily for the generation of any gas which may be derived from a solid and an acid.



The main body of the generator consists of a Schwartz drying tube, five or six inches in height. Both arms are filled with glass beads to a point slightly above the curved portion of the tube. In the arm in which the solid reagent is to be placed, a very thin layer of glass wool is added and is covered with a layer of glass beads upon which the solid rests. The side-arm on the gas delivery side is provided with a plug of glass wool or cotton to remove entrained spray and is connected by a rubber tubing of convenient length to a glass delivery tube. This tube is drawn to capillary dimensions in order to obtain a stream of very fine bubbles, but must be of sufficient diameter to prevent clogging by small particles of precipitate.

In operation, the quantity of hydrochloric acid used is adjusted so that none is driven out of the generator when the flow of gas is shut off. The stopcocks should be well lubricated to prevent leakage of gas.

When the device is used as a hydrogen sulfide generator, it has been found best to remove the ferrous sulfide when the generator is not in use. This eliminates a delay in the generation of gas which was noticed after the sulfide had been allowed to remain in the generator when not in use.

This generator has advantages of convenience, simplicity, and economy which make it valuable for individual use in qualitative microanalysis. Since it is a small unit constructed of a standard piece of apparatus, each student may have his individual generator. The arms of the Schwartz tube may be connected by a loop of wire and the unit is then easily hung on a nail or hook in the student's locker.

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