

of an automatic spot evaluator which can read approximately 12 samples per minute. Tests revealed that the flow rate varied significantly between samplers and between filter tape rolls, and that the flow rate decreased at a predictable rate during the sampling cycle. The variation in flow rate of areas within the roll was not significant for the tape used in this study. An A.I.S.I. sampler calibration procedure was developed which is both simpler and more accurate than previous procedures.

-- Authors' summary

- 1004 Development of a Freeze-Out Technique and Constant Sampling Rate for the Portable Uni-Jet Air Sampler. A. L. Lynch and R. C. Charsha.
Am. Ind. Hyg. Assn. J. 21, 325-329 (Aug. 1960).

The Uni-Jet Air Sampler was adapted to the freeze-out technique for collecting micro concentrations of air contaminants having a wide range of volatilities. A small wide mouth vacuum flask was used to contain the coolant. The collection efficiencies for 1 to 5 ppm of nitrobenzene in air were 85 % to 95 % at -21°F. and -116°F. Under similar conditions, the collection of carbon bisulfide required liquid nitrogen temperature, -321°F, to reach an efficiency of 85 to 90%. The midget impinger was modified by reversing the flow and adding 3 mm. glass beads to increase condensation surfaces. The entire sampling unit is small enough to be held in one hand, and easily portable for field work. Volatile scrubbing solutions may be cooled below ambient temperature by vaporizing liquid Freon-12 in a coil surrounding the midget impinger, and connected to the aspirator of the Uni-Jet Air Sampler. Flow control of liquid Freon-12 into the coil by a standard refrigerator valve will produce a constant aspirator vacuum, and the effect of a variable aspirator orifice. The air flow through a standard midget impinger can be maintained at peak efficiency of 0.1 cubic foot per minute for 97 % of the time required for expansion of a one-pound charge of Freon-12. The maximum constant flow through a Greenberg-Smith impinger was 0.33 cubic foot per minute while 98 % of the propellant was consumed. Rates as low as 20 ml. per minute at near zero flow resistance were attained.

-- Authors' summary

- 1005 Air Flow Calibration of Direct Reading Colorimetric Gas Detecting Devices. H. L. Kusnetz.
Am. Ind. Hyg. Assn. J. 21, 340-341 (Aug. 1960).

The necessity for checking carefully the air flow characteristics of direct reading colorimetric gas detecting devices has been shown. Construction of a simple buret using a soap bubble as the indicating medium has been described. Such a device could be made part of field equipment.

-- Author's summary

- 1006 The Determination of Organic Vapors in Air by Gas Chromatography Using a Direct Injection Method. B. Levadie. Am. Ind. Hyg. Assn. J. 21, 322-324 (Aug. 1960).

The polyethylene glycol 400 column offers a practical solution to the annoying problem of moisture in the chromatography of airborne vapors. It permits the application of direct injection of the sample into the column and thus expand the usefulness of this type of analysis for the industrial hygienist. This technique is simple. With a set of standards prepared directly from the solvents themselves, the need for test tank standardization of the chromatograph is eliminated. By changing the operating conditions of the column, perhaps by modifying it, the sensitivity of this method possibly can be developed to detect much lower levels of traces than the author has shown, without the need of resorting to costly detection systems and complicated sampling arrangements.

-- Author's conclusions

- 1007 A Mass Loading and Radioactivity Analyzer for Atmospheric Particulates. J. S. Nader and D. R. Allen. Am. Ind. Hyg. Assn. J. 21, 300-307 (Aug. 1960).

A prototype mass loading and radioactivity analyzer for atmospheric particulates was developed. Beta gauge technique using carbon-14 is applied to measurement of the thickness of particulate deposits collected on membrane tape. This technique for mass loading

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