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analysis is also applicable to paper tape and other media of comparable thickness. The result is expressed in terms of concentration values, i. e., micrograms of particulate per cubic meter of air (micrograms/cu.m.). The proportional counter in the instrument also measures the alpha and beta radioactivity content of the dust deposit and the concentration values are in terms of micro-microcuries of activity per cubic meter of air (micro-microcuries/cu.m.). Preliminary indications are that mass loading analysis can be made of particulate concentrations within 100 micrograms /cu.m. but additional empirical data will be required to assess the effect of combined errors before the limit of sensitivity can be established. Concentrations of natural radioactivity by alpha detection can be measured as low as 35 micro-microcuries/cu.m., and artificial radioactivity concentrations by beta detection at 18 micro-microcuries/cu.m., both values being well within recommended maximum permissible levels in air. Present semi-automatic operation of the instrument permits rapid analyses of a series of samples on tape. Work is currently underway on indicated improvements to increase the sensitivity of the instrument and automatically record the data as the analysis is performed.

-- Authors' summary

- 1008 Odor Determination Techniques for Air Pollution Control. C. W. Gruber, G. A. Jutze, and N. A. Huey. J. Air Pollution Control Assn. 10, 327-330 (Aug. 1960).

The physiology of the olfactory sense is a biologic mystery and therefore leaves much to be learned concerning the nature of odors. Due to this lack of knowledge, inanimate instrumentation for measurement of odor, per se, has not been conceived. Present inanimate instrumentation is based on measurements made on the known odorant. These methods are specific for one odor, suffer from lack of sensitivity, and are incapable of handling mixed and unknown odors. Odor strength can be measured organoleptically. These methods suffer from the variations in the ability to smell. Of the present organoleptic measurement devices, the Syringe Technique and the Nader Dilution Apparatus are recommended for measurement of odor strength at the source. For measurements in the affected area of ambient odors, the Flask Dilution Technique and the Scentometer are recommended. For the purpose of source detection of ambient odors and the gathering of proof of the source, triangulation by simple wind direction data is possible. The data must be gathered at the time of 2 different occurrences of the same odor with different wind directions. Odor quality is such a problem, that for the purpose of present progress, it is best ignored.

-- Authors' summary

- 1009 Developments in the Measurement of Atmospheric Sulfur Dioxide. A. F. Welch and J.P. Terry. Am. Ind. Hyg. Assn. J. 21, 316-321 (Aug. 1960).

In the course of an air pollution research study in Nashville, Tennessee, the sodium tetrachloromercurate (TCM) method for collection and analysis of low concentrations of sulfur dioxide was found to be accurate, highly sensitive, flexible, and practical. The adaptation of this method to use with an automatic analytical instrument and methods of rapid midjet bubbler handling, washing, and filling procedures are described. The relationship between this modified TCM method and 2 other methods was investigated, using synthetic mixtures of sulfur dioxide in air. A dynamic calibration procedure showed that Thomas Autometer and the TCM results are identical. The relationship between the hydrogen peroxide and TCM methods was found to be: (hydrogen peroxide results in ppm) = $0.72 \times (\text{TCM results ppm}) + 0.04$. The lead peroxide candle method for estimation of sulfur dioxide as used in Nashville is described.

-- Authors' summary

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