

amounts of benzopyrene in the distillate, while low-temperature oil (400-500 °) is almost free of this hydrocarbon. Similar results were obtained from air samples drawn in the vicinity of power plants which use coal.

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Determination of Air-Borne Contaminants

COLLECTION OF MIST AND DUST FOR PARTICLE SIZE MEASUREMENT, ELECTROSTATIC PRECIPITATION ON HAEMOCYTOMETER. H. G. BOURNE JR. and LEE B. FOSDICK, *Analyt. Chem.* **22**:1563-1565 (Dec.) 1950.

With commercially available apparatus, air-borne particulate matter is precipitated electrostatically on a bright line hemocytometer with the aid of two simple fixtures described by the authors. The diameter of individual particles is measured in the customary manner with a filar micrometer. The size range of atmospheric dust and in-plant dust and mist ascertained by the proposed method is compared with results obtained with Owens jet dust counter and with that of factory dust in general as reported in the literature. Advantages of the method are: Density of deposits may be controlled; solution of dust and mist is avoided, and particles are precipitated in their original state.

AUTHORS' SUMMARY.

DETERMINATION OF PARATHION IN AIR SAMPLES BY ULTRAVIOLET ABSORPTION SPECTROSCOPY. ROBERT C. HIRT and J. B. GISCLARD, *Analyt. Chem.* **23**:185-187 (Jan.) 1951.

A sensitive method for determining the concentration of parathion present as air-borne dust, mist, or vapor was needed for industrial hygiene work directed toward keeping workroom atmospheres free of this toxic material. This determination was made by the ultraviolet spectroscopic analysis of parathion in ethyl alcohol which had been used to scrub a known volume of air. The detectability is calculated to be 9 μ g. when a 50-mm. absorption cell is used. If parathion is present only as vapor, a large volume of air must be sampled because of the low vapor pressure of parathion. Data from collected samples showed that nearly all positive results in tests for parathion were due to air-borne dust or mist. This method offers a sensitive means of determining the concentration of parathion in the atmosphere, which can be used for the monitoring of manufacturing and packaging operations, as well as for laboratory studies of such factors as vapor pressure and vapor phase toxicity.

AUTHORS' SUMMARY.

DETERMINATION OF COMPOSITION OF AIR-BORNE PARTICULATE MATTER. RICHARD H. CADLE, *Analyt. Chem.* **23**:196-198 (Jan.) 1951.

Methods used for collecting particulate matter from the atmosphere in the Los Angeles area and for qualitative chemical analysis of the particles are described. Reagents which produced precipitates were found more satisfactory than those which merely produced colored compounds. The following tests were found satisfactory for particles down to 5 microns in diameter: the sulfate test using a barium chloride-acetic acid reagent, the halide and cyanide test with silver nitrate solution, the test for ammonia with Nessler reagent, the test for nitrate with a solution of nitron acetate, and the test for carbonate with concentrated nitric acid. Most of these tests are not absolutely specific but usually mean that the ion indicated is present. The following tests were found to be unsatisfactory below 100 microns in diameter: the diphenylhydrazine-sulfuric acid test for nitrates, the barium rhodizonate test for sulfates, and the zinc uranyl acetate test for sodium.

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A GRAPHICAL METHOD OF SIZING CYCLONE DUST COLLECTORS. LEONARD MONROE, *Heating & Ventilating* **47**:63-66 (Dec.) 1950.

Energy loss and cyclone proportions are briefly reviewed and discussed, along with a nomograph for sizing this type of inertial dust collector. Cylinder diameter may be estimated from the nomograph by using selected values of (1) air volume (2) a separation coefficient equal