

PREVENTIVE ENGINEERING

- 1185 High Velocity Acid Mists Collection. R. W. Sexton.
Am. Ind. Hyg. Assn. J. 23, 396-403 (Sept.-Oct. 1962).

Efficient collection of acid and chemical mists at high gas velocities has been obtained by the development of equipment that will function mechanically at gas flow rates to 850 feet per minute. The collector designed for multi-stage operation uses a concurrent liquid wetting system with countercurrent stage operation. Numerous conditions affecting performance were explored such as selection of suitable gas sampling equipment and controlled chemical feeding procedures. The investigation included studies with the following acids: sulfuric, hydrochloric, perchloric, acetic, phosphoric and chromic—as well as ammonia, chlorine gas, ethylenediamine and nitrogen dioxide. -- Author's abstr.

- 1186 Recent Findings in the Field of Wet Dust Scrubbers. K. Semrau.
Staub 22, 184-187 (May 1962).

The efficiency of a dust scrubber on a given dust or mist is dependent upon the power dissipated in the gas liquid contacting process. Efficiency increases with an increase in the power dissipation required to attain a given efficiency increase as the particle size of the dust or mist decreases. However, the efficiency is nearly independent of the size, design, and geometry of the scrubber, also of the method by which the power is applied to the contacting process. There are 33 references to the subject. -- APCA Abstrs.

- 1187 Why Test Method is Important in Rating Air Filter Efficiency. Anon.
Heating Piping and Air Conditioning 34, 42-43, 216, 218 (July 1962).

Because of a lack of standardization in regard to methods used to test filters by various manufacturers, the purchaser has difficulty in determining the proper filter for the task. Filter efficiency may be expressed as a percentage by weight, or number of particulates, or by discoloration of the filter. To evaluate manufacturer's claims the type of dust, the point in the life of the filter, and the air velocity must be known. Since dusts are not uniform, there are factors which bias efficiencies by weight. Certain dusts agglomerate into much larger particles which tend to increase the efficiency rating. The discoloration test is based on methods developed by the National Bureau of Standards known as the Dust-Spot, Photometric, Dill Test, or Blackness Test. Samples of cleaned and uncleaned air are drawn onto filter papers and compared in a photoelectric tester. The photocells oppose each other on a galvanometer. By adjusting flow rates of the samplers a null is reached, and the efficiency of the filter is determined. Special tests involving DOP (dioctylphthalate smoke), jet or cascade impactor, radioactive dust or mist, and microorganism techniques are discussed. -- Public Health-Eng. Abstrs.