

Operating pressure, resistance to flow, and dynamic leakage were evaluated. The study of leakage included an investigation of the effects of valve orientation, covering, humidity, and work rate on dynamic leakage. Test results demonstrated significant differences in performance between valve types. There are 7 references. -- Authors' abst.

- 794 Hydrogen Distribution to Process Laboratories. J.W. Hammersmith and A.W. Larson. Chem. Eng. Progr. 62, 54-58 (Dec. 1966).

A system for supplying hydrogen to process laboratories facilitates the safe handling of increasing amounts of hydrogen that are demanded by petroleum and petrochemical processing. Pilot plants are supplied through individual distribution subsystems. There are 10 references. -- Authors' abst., Public Health Eng. Absts.

- 795 Fire and Hyperbaric Oxygen. D.M. Denison, J. Ernsting and A.W. Cresswell. Lancet 2, 1404-1405 (Dec. 24, 1966).

Experimental evidence shows that the risks of ignition and the subsequent burning-rate in oxygen-rich environments, such as those obtained with hyperbaric oxygen therapy, are strikingly increased when compared with normal conditions. The risk increases as more equipment fitted with electronic instruments is used. The fires are more serious because of the high burning rate, and established methods of fire extinction are ineffective under these conditions. Possible precautions are discussed. There are 11 references.

-- Summary cond., Public Health Eng. Absts.

- 796 Hazards of Potentially Explosive Materials. W.G. Sykes. Chem. Eng. Progr. 62, 49-53 (Dec., 1966).

Conventional tests for explosive sensitivity and safety with such materials as ammonium nitrate do not determine all hazards. The Primacord Wrap Test described in this paper is useful in detecting unexpected levels of sensitivity in new products. There are 7 references.

-- Author's abst., Public Health Eng. Absts.

COMMUNITY AIR HYGIENE

- 797 The Electric Automobile. G.A. Hoffman. Sci. Am. 215, 34-40 (Oct., 1966).

Advances in development of an air battery permits consideration of the electric automobile as a future replacement for the gasoline-driven automobile. The changes possible from use of electric cars, including lessened air pollution, are described. -- Public Health Eng. Absts.

- 798 Ice Nuclei From Automobile Exhaust and Iodine Vapor. V.J. Schaefer. Science 154, 1555-1557 (Dec. 23, 1966).

When exposed to a trace of iodine vapor, the submicroscopic particles of lead exhausted by automobiles produce nuclei for the formation of ice crystals. Concentrations of particles exceeding 10^6 per liter can be directly sampled from the exhaust pipe of an idling motor. Concentrations of from 10^4 to 10^5 per liter have been found in rural air downwind of auto roads; the concentration at one rural site has increased by an order of magnitude in 13 years. The phenomenon may provide a method of modifying clouds and of determining (and monitoring) the percentage of automobile exhaust in a polluted atmosphere. It may be an important factor in inadvertent modification by man of the climate. There are 7 references.

-- Author's summary, Public Health Eng. Absts.

- 799 Area-Dosage Relationships Downwind of a Point Source. P.W. Nickola and Naydene E. Nutley. Am. Ind. Hyg. Assn. J. 28, 283-290 (May-June, 1967).

A relationship is developed between the value of a dosage isopleth downwind of a point source and the area enclosed by that isopleth. Equations describing this relationship are presented for stable, slightly stable, and unstable atmospheres. The equations for estimating the enclosed area are improved by the inclusion of a wind speed in the dosage term. The choice of a representative wind speed is discussed. These empirical equations are compared to similar equations previously developed, and implications of the differences are presented. There are 9 references.

-- Authors' abst.

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