DOCUMENT RESUME

ED 029 475 EF 003 251

Safety Cabinet Bibliography.

Army Biological Labs., Fort Detrick, Md. Industrial Health and Safety Div.

Pub Date Apr 69

Note-6p.

EDRS Price MF-$0.25 HC-$0.40

Descriptors-*Annotated Bibliographies, *Bibliographic Citations, Cabinetmaking, Controlled Environment, *Directories, Health, Industry, *Laboratory Equipment, *Laboratory Safety, Microbiology, Safety

Annotated bibliography cites 32 sources of reference on safety cabinets for laboratory facilities. (RH)

ED029475

INDUSTRIAL HEALTH & SAFETY DIRECTORATE
HEADQUARTERS, FORT DETRICK
FREDERICK, MARYLAND

APRIL 1969

# Safety Cabinet Bibliography

1. Fricke, W.: "Schutamassmahmen bei Bakteriologischem und Serologischem Arbeiten," Gustum Fischer, Jena, Germany, 1919.

One of the earliest references to safety hoods for hazardous bacteriological procedures.

2. Van den Ende, M.: "Apparatus for the Safe Inoculation of Animals with Dangerous Pathogens," J. Hyg., 43:189-194, 1943.

British publication describing special cabinets used during the large-scale production of Scrub Typhus vaccine. Cabinets exhausted at the rate of 50 cfm and exhaust air heated to 300 to 600°C before discharge to the outside.

3. Shepard, C.C., May, C.W. and Topping, N.H.: "A Protective Cabinet for Infectious Disease Laboratories," J. Lab. Clin. Med., 30:712-716, 1945.

Reports the design and development at the National Institutes of Health of a wooden fume hood for hazardous microbiological operations such as tissue grinding and centrifuging. Exhaust air was incinerated by a gas burner.

4. Keeney, E.L.: "A Protective Cabinet for Investigators Studying Coccidioides immitis and other infectious fungi," Bull. Johns Hopkins Hospital, 78:113-118, 1946.

Describes a non-ventilated, stainless steel cabinet used at Johns Hopkins Hospital for laboratory work with infectious fungi.

5. Decker, H.M., Geile, F.A., Harstad, J.B. and Gross, N.H.: "Spun Glass Air Filters for Bacteriological Cabinets, Animal Cages, and Shaking Machine Containers," J. Bacteriol., 63:377-383, 1952.

Report of the microbiological tests done to evaluate spun glass air exhaust filters for ventilated cabinets.

EF003251

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

6. Wedum, A.G.: "Bacteriological Safety," Am. J. Public Health, 43: 1428-1437, 1953.

Describes the first bacteriological cabinets built for the U.S. Army Chemical Corps. Cabinets were of stainless steel with filter exhaust, interior ultraviolet lamps, removable glove panels and utilities. Presents research data describing the infectious hazards of bacteriological techniques.

7. Schulte, H.F., Hyatt, E.C., Jordan, H.S., and Mitchell, R.N. Evaluation of Laboratory Fume Hoods. Amer. Indust. Hygiene Assn. J. 15:195-202, (Sept) 1954.

Use of smoke to establish airflow patterns.

8. Reitman, M. and Wedum, A.G.: "Microbiological Safety," Public Health Reports, 71:659-665, 1956.

Recommends that all potentially infectious laboratory operations be carried out in ventilated safety cabinets. Describes several types of cabinets including gastight cabinets and cabinets for centrifuges and shaking machines.

9. Wedum, A.G., Hanel, E., Jr. and Phillips, G.B.: "Ultraviolet Sterilization in Microbiological Laboratories," Public Health Reports, 71:331-336, 1956.

Presentation of basic tests evaluating the germicidal effectiveness of ultraviolet radiation for use in microbiological laboratories.

10. Wedum, A.G., Hanel, E., Jr., Phillips, G.B. and Miller, O.T.: "Laboratory Design for Study of Infectious Diseases," Am. J. Public Health, 46:1102-1113, 1956.

Lists ventilated cabinets among the essential basic equipment for infectious disease units. "The Safety Cabinet is the most important single piece of equipment in preventing laboratory infections."

11. Williams, R.E.O. and Lidwell, O.M.: "A Protective Cabinet for Handling Infective Material in the Laboratory," J. Clin. Pathol., 10:400-402, 1957.

Describes bacteriological tests done to evaluate the efficiency of a small ventilated cabinet with ultraviolet lamps designed for use in tuberculosis laboratories.

12. Lind, A.: "Ventilated Cabinets in a Tuberculosis Laboratory," Bull. World Health Organization, 16:448-453, 1957.

Swedish publication describing several types of ventilated, stainless steel cabinets for use in laboratory operations with tubercle bacilli.

13. "Laboratory Hood Ventilation Design," Michigan's Occupational Health, 4:(4), 1-8, 1959.

Summarizes some basic concepts of laboratory hood ventilation, emphasizing the importance of hood location, corrosion resistance, room air balance, and exhaust duct design.

14. Couling, C.W. and Rees, R.J.W.: "A Protective Cabinet for the Post-Mortem Examination of Infected Animals," J. Hyg., 57:407-409, 1959.

Describes an animal autopsy cabinet at the National Institute for Medical Research in London.

15. Gremillion, G.G.: "The Use of Bacteria-Tight Cabinets in the Infectious Disease Laboratory," Proceedings of the Second Symposium on Gnotobiotic Technology, Univ. of Notre Dame Press, Notre Dame, Indiana, pp. 171-182, 1959.

Complete description and photographs of stainless steel cabinets and cabinet systems used at the U.S. Army Biological Laboratories, Fort Detrick, Md. A general purpose modular cabinet system is shown with discussion of how laboratory and animal work is carried out.

16. Blickman, B.L. and Lanahan, T.B.: "Ventilated Work Cabinets Reduce Lab Risks," Safety Maintenance, 120:(4), 34-36, 44-45, 1960.

Description of stainless steel, microbiological cabinets and cabinet systems. Includes a discussion of contamination reduction techniques and cabinet design and fabrication details.

17. Viles, F.J., Jr.: "Laboratory Hoods - Their Design and Application," Third National Conference on Campus Safety, Safety Monographs for Colleges and Universities, No. 6, 125-130, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill., 1960.

Discussion of ventilation requirements for laboratory hoods designed to contain air-borne contamination. Inward air velocities of 50-100 linear feet per minute are recommended.

18. Chatigny, M.A.: "Protection Against Infection in the Microbiological Laboratory, Devices and Procedures," in Advances in Applied Microbiology, Vol. 3, 131-192, Academic Press, New York, N. Y., 1961.

Contains descriptions and photographs of a number of stainless steel, ventilated cabinets and cabinet systems used at the U.S. Naval Biological Laboratories.

19. Wedum, A.G.: "Control of Laboratory Airborne Infection," Bact. Rev., 25:210-216, 1961.

Review of methods used to reduce and control laboratory infections. Ventilated safety cabinets are described as "The most important single item...." in controlling contamination at the point of origin.

20. Dolowy, W.C.: "Medical Research Laboratory of the University of Illinois," Proc. of the Animal Care Panel, 11:267-280, 1961.

Includes descriptions and photographs of ventilated work cabinets and ventilated animal housing cabinets installed in this new and modern research laboratory.

21. Jemski, J.V. and Phillips, G.B.: "Microbiological Safety Equipment," Lab. Animal Care, 13:2-12, 1963.

Describes ventilated cabinet systems used successfully to prevent infections during laboratory research with highly infectious aerosols.

22. Wedum, A.G., and Phillips, G.B.: Criteria for Design of a Microbiological Research Laboratory. J. Amer. Soc. Heat, Refrig. Air Cond. (ASHRAE) 6:46-52, 1964.

28 questions for policy decisions.

23. Horowitz, H., Heider, S.A., and Dugan, C.N. Fume Hoods for Science Laboratories. American Institute of Architects Journal, 1965 (July).

Discusses basic principles of the fume hood's design and use.

24. Papa, L.J. A Qualitative Approach to Proper Evaluation of Laboratory Fume Hoods. Air Engineering. (April) 1966:20-22, 25, 30.

Use of propane gas to evaluate containment of fumes inside the hood.

25. Doxie, F.T., and Velom, K.J. Human Factors in Designing Controlled Ambient Systems. The Western Electric Engineer 11(1): Jan. 1967.

The restrictions imposed by ported-glove enclosures and the effects of these restrictions on the operator must be thoroughly understood and considered when designing the enclosures.

26. Phillips, G.B., and Runkle, R.S.: Laboratory Design for Microbiological Safety. Appl. Microbiol. 15:378-389, 1967.

Develops and explains the concept of primary and secondary barriers for containment of microorganisms.

27. Favero, M.S., and Berquist, K.R.: Use of Laminar Air-Flow Equipment in Microbiology. Appl. Microbiol. 16:182-183, 1968.

A cabinet that provides both operator protection and product protection.

28. McDade, J.J., Sabel, F.L., Akers, R.L., and Walker, R.J. Microbiological Studies of the Performance of a Laminar Airflow Biological Cabinet. Appl. Microbiol. 16:1086-1092, 1968.

Describes methods to test product and operation protection, and results.

29. Barbeito, M.S., and Taylor, L.A. Containment of Microbial Aerosols in a Microbiological Safety Cabinet. Appl. Microbiol. 16:1225-1229, 1968.

Evaluates the degree of containment.

30. Staat, R.H., and Beakley, J.W. Evaluation of Laminar Microbiological Safety Cabinets. Appl. Microbiol. 16:1478-1482, 1968.

Discusses design weaknesses after testing a prototype and an improved model.

31. Kreider, J.W. Some Practical Aspects of the Use of Laminar Airflow Systems for Tissue Culture Manipulations. Appl. Microbiol. 16:1804-1805, 1968.

A cabinet with sterile air inside the cabinet.

32. Coriell, L.L., and McGarrity, G.J. Biohazard Hood to Prevent Infection During Microbiological Procedures. Appl. Microbiol. 16:1895-1900, 1968.

Evaluation of a 4-foot wide cabinet that provides operator and product protection.