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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
CINCINNATI, OHIO 45202

HEALTH HAZARD EVALUATION DETERMINATION
REPORT NO. 73-20-80
AIRCO VACUUM METALS COMPANY
BERKELEY, CALIFORNIA
OCTOBER 1973

I. TOXICITY DETERMINATION

Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6), authorizes the Secretary of Health, Education, and Welfare following a written request by any employer or authorized representative of employees to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations used or found.

The National Institute for Occupational Safety and Health (NIOSH) received such a request from an authorized representative of employees regarding exposure to vermiculite dust and basolite powder at the Airco Vacuum Metals Company, Berkeley, California.

It has been determined in this investigation that under the conditions of use observed, vermiculite and basolite do not represent a health hazard and can be handled safely with normal precautions. It is recommended, however, that if large amounts of vermiculite or basolite have to be moved where dust can be generated, approved dust respirators should be worn by workers as a precaution. It is also recommended that a respirator maintenance program be established for respirators in current use during short-term chamber cleaning operations.

II. DISTRIBUTION AND AVAILABILITY OF DETERMINATION REPORT

Copies of this Report are available upon request from the Hazard Evaluation Services Branch, NIOSH, U.S. Post Office Building, Room 508, 5th and Walnut Streets, Cincinnati, Ohio 45202. Copies have been sent to:

- a) Airco Vacuum Metals Company, Berkeley, California
- b) Authorized Representative of Employees
- c) U. S. Department of Labor - Region IX
- d) NIOSH - Region IX

For purposes of informing the approximately five (5) "affected employees," the employer will promptly "post" this report in a prominent place(s) near where affected employees work for a period of 30 calendar days.

III. HEALTH HAZARD EVALUATION

The survey of the alleged hazard area was made by NIOSH investigator Melvin T. Okawa on May 31, 1973. The purpose of the investigation was explained to company and union representatives. The conclusions of the evaluation will follow.

Airco Vacuum Metals is a producer of stainless steel ingots which are used by various fabricating firms. The stainless steel ingots are cast from scrap metal by a unique process. Scrap metal and several alloys are melted in a chamber under a vacuum. The metal is held and metered into an electron beam chamber where it is superheated to vaporize off the impurities. Finally, it is cast into ingots and cooled. The cooling temperature and rate is crucial, and it is this process in which vermiculite and basolite are involved. Recently, Airco purchased several large "cool down" cans which hold the ingots. The cans are filled with vermiculite to control the cooling rate. Prior to the purchase of these cans, the ingots were placed out in the plant and the vermiculite was shoveled around them. Dust from vermiculite was reported to have been generated and undoubtedly some exposure to the compound existed at the time.

Presently, the vermiculite is left in the cans while the ingots are changed and very little dust becomes airborne. The basolite powder is spread on the floor in areas near the "cool down" cans and does not seem to present much of a problem.

The four to five employees normally involved in these operations were privately interviewed; none of these employees indicated knowledge or occurrence of any health problems associated with the use of these dusts.

Based upon the above observations, conditions of use and recent changes in operating procedures, it has been judged that vermiculite and basolite dusts are not hazardous as presently used or found.

IV. AUTHORSHIP

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