

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
CENTER FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
CINCINNATI, OHIO 45226

HEALTH HAZARD EVALUATION DETERMINATION
REPORT HE 79-50-597

COMMERCIAL LOVELACE FREIGHT TERMINAL
DAYTON, OHIO

June 1979

I. TOXICITY DETERMINATION

Based upon the composition and the frequency and manner of use of "Zorb-All" drying agent, it is concluded that there is no health hazard associated with this substance as presently used at the Dayton terminal of Commercial Lovelace. It is recommended, however, that "Zorb-All" be cleaned up as soon as practical after its use and before a dry powder residue is formed which can become airborne and may cause irritation of eyes, nose and throat.

DISTRIBUTION AND AVAILABILITY OF DETERMINATION REPORT

Copies of this Determination Report are currently available upon request from National Institute for Occupational Safety and Health (NIOSH), Division of Technical Services, Information Resources and Dissemination Section, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days, the report will be available through the National Technical Information Service, (NTIS), Springfield, Virginia. Information regarding its availability through NTIS can be obtained from the NIOSH Publications Office at the Cincinnati address.

Copies of this report have been sent to:

- a) Commercial Lovelace Company
- b) Teamsters Union Local 957
- c) U.S. Department of Labor, Region V
- d) NIOSH, Region V

For the purpose of informing the approximately 50 "affected employees", the employer shall promptly "post" for a period of 30 calendar days the determination report in a prominent place near where exposed employees work.

III. INTRODUCTION

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 as used or found.

The National Institute for Occupational Safety and Health received such a request from an authorized representative of the Teamsters Union, to investigate "Zorb-All", a drying agent used to remove moisture and liquid from the dock floor at the Commercial Lovelace terminal in Dayton, Ohio.

IV. HEALTH HAZARD EVALUATION

A. Plant Process

The Commercial Lovelace terminal in Dayton serves as a bulk passing terminal and is capable of spotting approximately fifty trucks. All loading and sorting of cargo is done on the dock which is partially enclosed on one side by the terminal offices, and on a second side by the equipment maintenance facility. Most of the dock, however, is open to receive trucks, and therefore is subject to weather conditions.

When rain or snow occurs with strong winds, or when the concrete dock cools enough to condense moisture from the air, the floor becomes wet and slippery. To overcome the problem, and a similar problem created by spills of motor oil and other liquids, a material called "Zorb-All" is spread on the dock to absorb the liquid. During periods of heavy work load, "Zorb-All" may be left on the floor long enough for the moisture to evaporate out, leaving a dry powder which can be thrown into the air by fork lift trucks and other traffic. Dock workers are consequently exposed to this airborne powder.

B. Hazard Evaluation

On March 7, 1979, a visit was made to the Dayton terminal of Commercial Lovelace Company. The use of "Zorb-All" was discussed with company and union representatives, and also with dock workers. A visual inspection was made of the facilities. A bulk sample of "Zorb-All" was collected for qualitative analysis. Terminal employees were questioned regarding use and effects of "Zorb-All", the only negative comments elicited being claims of occasional, mild, transient eye, nose and throat irritation.

Analysis of "Zorb-All" indicated the presence of approximately 6% free crystalline silica (quartz). X-ray analysis (XRD and XRF) showed the following elements to be the major constituents: silica, potassium, calcium, titanium, iron, and aluminum. Quartz is capable of producing lung disease if inhaled in sufficient quantity over a prolonged period. The remaining constituents would be most likely classified as "nuisance" particulates. The material is supplied in granules but mechanical actions such as walking or driving tend to pulverize it to powder form. It is unlikely that a significant portion of the powder would be of respirable size, although some could become airborne and contact the mucous membranes of the eyes, nose and throat.

Due to its infrequent and short duration use, its relatively low content of toxic material, and its relatively large particle size, there appears to be no evidence to support the contention that dock workers at Commercial Lovelace are subjected to a health hazard from "Zorb-All". It is felt, however, that it might cause nose, eye and upper respiratory tract irritation, probably due to its ability to remove moisture from these areas. It is recommended that "Zorb-All" be cleaned up as soon as practical after it has served its purpose.

V. AUTHORSHIP AND ACKNOWLEDGEMENTS

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