

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 78-75-508
CAL WEST PERIODICALS
OAKLAND, CALIFORNIA

JULY 1978

I. TOXICITY DETERMINATION

It has been determined that the perforated tape ("Talk Tape") used in the code punching machines at the Cal West Periodicals Company, Oakland, California, is not toxic. This determination is based on the analyses of the impregnating oil for the tape, the tapes themselves, the results of the charcoal tube samples, and the opinion of the physician assigned to the investigation from CAL/OSHA (the OSHA agency for the State of California). The National Institute for Occupational Safety and Health (NIOSH) conducted a joint investigation with CAL/OSHA to eliminate duplication of effort.

II. DISTRIBUTION AND AVAILABILITY OF DETERMINATION REPORT

Copies of this Determination Report are currently available upon request from 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) Cal West Periodicals, Oakland, California
- (b) U.S. Department of Labor, Region IX
- (c) CAL/OSHA
- (d) NIOSH, Region IX
- (e) Authorized Representative of Employees-Local #29, Office and Professional Employees Union.

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 (NIOSH) received such a request from an authorized representative of employees of Local #29 of the Office and Professional Employees Union concerning the toxic effects of a coding tape used at the Cal West Periodicals Company, Oakland, California.

IV. HEALTH HAZARD EVALUATION

A. Introduction and Description of Plant Process

On April 27, 1978, NIOSH investigator Melvin T. Okawa made an initial visit to Cal West Periodicals to conduct the Health Hazard Evaluation. An opening conference was held between management and the representative of employees. CAL/OSHA was also involved in the investigation and had made its initial visit on April 20, 1978. It was decided by NIOSH to conduct a joint study with investigators from CAL/OSHA since the process in question was small, involved three employees at most, and did not appear to be extremely hazardous upon initial inspection.

Cal West Periodicals is involved in the wholesale distribution of magazines and paperback books. In order to facilitate the distribution process, information is punched onto paper tape ("Talk Tape") using Singer Business Machines which are designed for this coding job. The information is then transferred to a computer. The coding is performed by two to three employees who are located in one room. The tape is marketed by the TRW Corporation, and Cal West has used the tape for several years.

In late March of 1978, one of the workers complained that a new shipment of this tape was making her nauseous and dizzy. Prior to this shipment, the tape did not bother her. None of the other employees have experienced problems with the tape.

TRW informed Cal West that the only difference in the tape was the color which is changed periodically. The tape is impregnated with a petroleum based oil which is apparently standard with other manufacturers of this type of tape. The TRW tape is only sold by TRW and is actually made for TRW by Paper Manufacturers Company, Philadelphia, Pennsylvania. A sample of the tape currently used and the one which allegedly caused the employee problems was obtained. Additionally, arrangements were made through the NIOSH Regional Office in Philadelphia to obtain a sample of the impregnating oil.

B. Evaluation Methods

Since CAL/OSHA had an industrial hygienist and a physician assigned to the investigation, it was decided that NIOSH would supplement their findings by obtaining the impregnating oil from Paper Manufacturers in Philadelphia. The bulk sample of oil was analyzed by the CAL/OSHA laboratory for organic compounds. Charcoal tube samples were taken at the work site during normal working conditions, and the physician was given permission to talk with the affected employee's personal physician, allergist, and ophthalmologist concerning their diagnoses.

C. Environmental Evaluation Criteria

The impregnating oil is a petroleum based compound. The CAL/OSHA laboratory, using vacuum distillation, could not find any volatile organic compounds. Using mass spectrophotometry, the laboratory determined that the oil contained a small percentage of a mixture of alkanes and crystal alkanes resembling fractionated petroleum oil. In NIOSH's "Criteria for a Recommended Standard...Occupational Exposure to Alkanes", NIOSH recommends employee exposure be controlled to less than 350 milligrams per cubic meter of air (mg/m^3) based on a time weighted average over a working shift and a ceiling concentration of 1,800 mg/m^3 as determined by a 15 minute sample.

D. Evaluation Results

1. Environmental

The industrial hygienist from CAL/OSHA took two breathing zone samples and one general air sample. The alkane levels were 3.0 and 3.1 mg/m^3 for the breathing zone samples and 3.8 mg/m^3 for the general area sample. The samples were short-term samples. The alkane concentrations were extremely low.

2. Medical

The physician from CAL/OSHA concluded that after speaking with the affected employee's personal physicians no objective evidence of an allergic reaction to the tape could be found. The physician who examined the employee during the day she became ill concluded that she was having an anxiety reaction and the symptoms she presented to him were caused by hyperventilation secondary to her anxiety. In summary, no evidence of a toxic compound in the work environment could be found by the CAL/OSHA physician.

E. Conclusions

Based on NIOSH's initial visit and the data produced by CAL/OSHA, it was determined that, under the conditions found presently at CAL West Periodicals Company, the exposures of employees to "Talk Tape" were not toxic.

V. RECOMMENDATIONS

In spite of the fact that a health hazard could not be found, management should monitor any employee complaints of symptoms in the future if they are related to the use of "Talk Tape".

VI. AUTHORSHIP AND ACKNOWLEDGEMENT

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