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J. L. Nelson May 29, 1973

PROPOSED INFORMATION RESPONSE TO EMPLOYEE QUESTIONS

Attached are two documents which could be placed by our Plant Managers in the hands of their key managers as a factual guide in answering employee questions concerning vinyl chloride monomer.

The first (1) is designed to cover our present efforts to continue to reduce exposure levels in our operations and any questions that may result from our participation in the MCA epidemiological survey with Tabershaw-Cooper Associates.

The second (2) is designed for questions which may result from any publicly alleged cancer hazard from exposure to the monomer.

References to the acroosteolysis study in both may be irrevalent. However, the MCA vinyl chloride research group voted to include it in the historical account of vinyl chloride toxicology studies. As you know, no causative relationship was established between any agent or work practice and the hand symptoms. Furthermore, it is true that there has been an epidemiologically supported fact that affected employees have had a disappearance or reduction in symptoms since the study was completed.

If it is decided to proceed with this distribution of guide material, it is strongly recommended that a special meeting of our Plant Managers be called, to review all of the available information.

Ben M. G. Zwicker

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VINYL CHLORIDE EXPOSURE LEVELS

For many years the American Conference of Governmental Industrial Hygienists (ACGIH) has maintained a Ceiling and Threshold Limit Value (TLV) for vinyl chloride monomer of 500 parts per million (ppm) in the operating areas where workers are exposed up to eight hours per day, five days per week. These limits were accepted by the Department of Labor in November 1972.

So far as we know, our operations have been within these time weighted average limits and our employees operating under this standard and abiding by our special safety procedures for vessel entry have been protected against known health hazards.

In the mid-1960's we participated in an extensive personnel survey of the PVC industry. A small number of our people showed some symptoms associated in part with hand cleaning of polymerizers. Although this study was unable to confirm any causative effects, a number of steps have been taken to greatly reduce and hopefully eliminate vessel entry. We also have continued to reduce the levels of exposure to vinyl chloride monomer in our plants. We have also continued to follow the progress of affected employees in the hand sympton, and they have shown disappearance or improvement.

Animal experiments in the 1960's at concentrations lower than 500 ppm have shown sufficient physiological effects to warrant the ACGIH in 1970 to recommend reduction of the TLV level to 200 ppm for working areas. We have been performing the necessary analytical measurements in our operation areas with new portable instruments to help determine the necessary changes in procedures and equipment to assure this. Even lower levels of exposure to our people in all of our plants are being achieved.

We will continue to increase our surveillance of vinyl chloride concentrations in our working areas and may install continuous monitoring devices in some instances to help in this program. We ask for your full cooperation in our efforts to minimize release of vinyl chloride monomer in our various working areas as operating procedures may be changed to achieve a tighter ship for the protection of all of us.

P. M.

BMGZ/kcd
5/29/73

HUMAN HEALTH EFFECTS OF VINYL CHLORIDE

Employees of the B. F. Goodrich Company have produced, handled and used vinyl chloride monomer for over thirty-five years without obvious lasting health impairment. Because of the known fire hazard and anesthetic properties of this compound, we have maintained strict operating procedures to minimize exposure of our employees.

When the "poly cleaner hand symptom" arose in the mid-1960's, BFG's Industrial Hygiene Department was instrumental in getting the U.S. PVC producers together with the European representatives to survey the industry employees. Although this exhaustive study was unable to identify a causative effect, we took precautionary steps to reduce employee exposure to polymerizer hand cleaning by modifying our equipment and operating procedures. Symptoms have diminished in the few affected employees.

The above studies did stimulate additional research on physiological effects of vinyl chloride on animals. Initial rat inhalation results were reported by an Italian medical group at a level of 3%, or near the dangerous explosive limit of vinyl chloride in the air. After months of exposure at this anesthetic level, cancerous growths were observed in the test animals.

It is not possible to extrapolate the results of this Italian study to normal exposure levels because of the high concentration of exposure and the difficulty in interpreting cancer producing tests with limited numbers of test animals and species.

Additional animal exposure tests are now underway in both the U.S. and Europe at lower exposure levels, but still higher than the ACGIH limits of 200 ppm. Preliminary results on cancer reactions in the rodents used for these tests indicate the possibility of a statistically positive finding when the tests are completed. Additional test programs will be required to determine the potential of human hazard.

We know of no serious problems with our employees from the proper use of vinyl chloride in our plants. However, prudence dictates that we continue to take all precaution to minimize exposure levels, and your cooperation is expected.

P. M.

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