



MANUFACTURING CHEMISTS ASSOCIATION

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May 2, 1974

To: MANAGEMENT CONTACTS OF COMPANIES SUPPORTING THE
VINYL CHLORIDE RESEARCH PROGRAM
TECHNICAL TASK GROUP ON VINYL CHLORIDE RESEARCH

Subject: NIOSH Request for Proposal for Study of
Vinyl Chloride Exposures

Gentlemen:

Enclosed herewith are the Statement of Work and Scope of Work sections of a request for proposal (No. CDC-99-OSH-128(4)) issued by NIOSH last March 28, and just now called to my attention. This material is being distributed for your information, so that you may be prepared to handle contractor visits should they select one or more of your plants for study.

Sincerely,

Kenneth D. Johnson, Ph.D.
Secretary -
Technical Task Group on Vinyl
Chloride Research

KDJ:mb

Attachment

cc : Mr. A. W. Barnes
D. P. Duffield, M.D.
Dr. Tiziano Garlanda

ASI 00007153

5/2/74

STATEMENT OF WORKA. Background and Purpose

Information recently has been made available to the National Institute for Occupational Safety and Health (NIOSH) that indicates a serious health problem potentially exists in workers involved with the polymerization of vinyl chloride to polyvinyl chloride and polyvinyl chloride copolymers. Preliminary mortality information concerning one vinyl chloride polymerization plant has revealed there is a definite excess of deaths due to angiosarcoma of the liver in workers that have been involved with this processing.

It has been reported by Imperial Chemical Industries of Great Britain that angiosarcomas of the liver develop in animals exposed to vinyl chloride. Since vinyl chloride is definitely present in the environs of the plant mentioned above, vinyl chloride has been postulated to be an etiologic agent in the above mentioned excess employee deaths.

Since there is a large work force involved with vinyl chloride polymerization processing, NIOSH immediately initiated an extensive epidemiological investigation (including environmental surveys) into vinyl chloride polymerization operations and workers thereof. Vinyl chloride exposures, of course, also can occur in the production of the monomer and may occur in the processing of the polyvinyl chloride and its copolymers and during the commercial and industrial use of these polymers. Because these polymers have widespread use and there is potential for quite a large number of persons to be exposed to vinyl chloride, in addition to those people working in polymerization operations, there is a need to document the extent of vinyl chloride exposures in operations other than polymerization processing.

The purpose of this contract is to document past and present worker exposures to vinyl chloride during (1) the monomer production and the (2) processing of polyvinyl chloride and polyvinyl chloride copolymers. In addition to documenting worker exposures to vinyl chloride, information on work practices, environmental control procedures, industrial hygiene practices and worker exposures to other known liver toxins also will be documented. These data will be utilized to ascertain the extent of worker exposures to vinyl chloride and possibly other liver toxins so that the possible health effects impact in the industry can be determined and appropriate priorities for corrective measures, if needed, can be set. If vinyl chloride exposures are considered to be significant in these areas, then a very critical look at possible general exposures will be made.

Enclosure 1

ASI 00007154

Task II. Processing of Polyvinyl Chloride and Polyvinyl Chloride Copolymers

Environmental/industrial hygiene surveys shall be conducted in production areas where polyvinyl chloride and polyvinyl chloride copolymers* are processed including, but not limited to, the following operations: (1) compounding; (2) extrusion; (3) molding; (4) calendering; (5) thermoforming; (6) binding; (7) foams; (8) fibers; and (9) plastisol processing. The surveys shall be conducted so that each processing operation is sampled at three different plants (locations). The criteria for the selection of these three plants shall include, but not be limited to: (1) information gained from preliminary site visits; (2) information gained from literature searches; (3) information gained from personal contacts; (4) representativeness of the operations to industrywide processing; (5) operations having greatest potential for worker exposures to vinyl chloride; (6) operations having the greatest gradient of worker exposures to vinyl chloride; (7) availability of historical inplant air measurements of vinyl chloride; and (8) the operations having the longest history of polymer processing. The information that shall be obtained and/or constructed shall be the same as the eight items listed above for the vinyl chloride monomer production operations. In addition, to these eight items past and present TWA worker exposures to other known liver toxins (if present) including, but not limited to, mercury, 2,2 dichlorovinyl dimethyl phosphate, ozone, dioxane, beryllium, lead, dimethylnitrosamine, arsenic, (amyl, methyl, ethyl, butyl, propyl and vinyl) acetate, copper, trichloroethylene, carbontetrachloride, arsine and tetrahydrofuran shall be measured and/or constructed.

Task III. Sample Collection and Data Analyses

All vinyl chloride sampling and analytical techniques shall be specified in the contract proposal. If sampling is required for other known liver toxins, the sampling and analytical procedures must be approved by the project officer(s) prior to use by the contractor.

The contractor should be cognizant of the fact that vinyl chloride is considered a potential human liver carcinogen and all employees and agents of the contractor should be provided with appropriate protective equipment. These equipment needs will be discussed with the project officer(s) prior to the field surveys.

The sample collection shall be conducted in such a manner as to provide statistically valid data that are representative of present worker exposures (categorized by different job-types) to vinyl chloride and other liver toxins, if found. Past worker exposures (by job-type) shall be constructed based on the information that is collected on the changes in processing, ventilation, environmental control, work practices and industrial hygiene practices that have occurred over the years and on historic

* Polyvinyl chloride-acetate, polyvinyl chloride-propylene and polyvinyl chloride vinylidene chloride