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Manufacturing Chemists' Association, Inc.

(FOUNDED 1872)

1825 CONNECTICUT AVENUE, N. W.
WASHINGTON, D. C. 20009

F. H. CARMAN
TECHNICAL DIRECTOR

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January 4, 1967

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R. N. Wheeler

TO: PVC Resin Producers
Dr. C. V. Amundson (NYC)
For *Mr. R. N. Wheeler (S. Charleston)*

We are writing you to outline plans for a cooperative study of an occupational health hazard in polyvinyl chloride manufacturing, to solicit response on participation in an epidemiological study to be conducted by the University of Michigan's Institute of Industrial Health under the auspices of the Association's Occupational Health Committee, and to advise of a meeting of all interested participants on January 24, 1967.

* In the attached you will find a discussion of the background of the problem, the proposed epidemiological study, the cost and conduct of the study, and a reply form regarding the January 24 meeting.

It is desirable that participating companies send individuals who will be responsible for the medical portion of the study since clinical information will be discussed. Also, detailed planning would be facilitated if company representatives familiar with the processes could attend. In the case of those companies planning to be represented in the meeting but wishing to withhold decision about participation until that time, it is highly desirable that their representatives be able to indicate at the conclusion whether or not the company will participate.

In the reply form certain information is desired to refine the cost estimates for the study (and to complete the research contract) and for maximum planning efficiency at the meeting later this month. Please return this reply form and also advise me on the appropriate assessment classification for your company (page 3 of attachment). Any questions about the study and the plans may be directed to the writer or to Dr. William L. Sutton, Chairman, Occupational Health Committee (Assistant Medical Director, Eastman Kodak Company, Rochester, New York - Area Code 716, telephone 325-2000, ext. 2868).

The meeting will be held in the Institute of Industrial Health, University of Michigan, Ann Arbor, Michigan, beginning at 9:30 a.m. A block of rooms has been set aside at the Michigan

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Union, 530 South State Street, Ann Arbor, Michigan 48104, for the evening of January 23. Those requiring sleeping rooms are requested to write the Michigan Union direct identifying themselves with the meeting arranged by Dr. Magnuson of the Institute.

Sincerely,



F. H. Carman

FHC/bk

* Enclosures

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Background

Polyvinyl chloride (PVC) resin producers were invited to a meeting October 6 in Cleveland which was held under the auspices of the MCA's Occupational Health Committee to discuss an occupational health problem that had been recognized by a segment of the industry. This established that:

- (1) There is a distinctive condition that has been associated primarily with specific operations;
- (2) The condition had not been recognized by many producers, but could be present without being noticed since appropriate examinations had not been done;
- (3) There was inadequate information about the presence or absence of the condition among those exposed only to fabrication operations with the finished resin; and
- (4) The cause of the condition is unknown.

As a result, the Occupational Health Committee advised a three-point program which included as the first order of business an epidemiological study to determine the extent of the problem in other segments of the industry and to obtain information which might identify the possible cause.

The Epidemiological Study

In conjunction with the Occupational Health Committee, the Institute of Industrial Health of the University of Michigan has developed an epidemiological plan and the MCA Executive Committee has authorized the Committee to proceed with the project. In broad outline, it will be conducted as follows:

- (1) Populations to be studied will be drawn from member company PVC manufacturers and will consist of two main groups:
 - (a) persons working in PVC resin production and,
 - (b) persons engaged in fabrication of PVC articles (exposed to finished resins only);
- (2) The participating companies will obtain hand x-rays and completion of a self-administered health and vocational questionnaire;

- (3) The x-rays and questionnaires will be sent to the Institut of Industrial Health for interpretation and tabulation;
- (4) A team of physicians and industrial hygienists from the Institute will visit the participating plants to observe the operations, especially polymerization and polycleaning, and will receive confidential information on the processes and chemistry; this is essential to achieve the objectives of the study. The presence or absence of abnormalities will be correlated with process information in order to identify possible causes and determine whether or not there is a risk from exposure to the finished resin. Safeguards will be developed to insure that no results are identified with any company, and that no confidential process information is divulged to other participants;
- (5) Hand x-rays on an adult population of a small Michigan community (approximately 4,000 persons) will be studied as a control population.

It is hoped that this study can be completed and reported to the Occupational Health Committee and participating companies by June, 1967. The Committee tentatively plans to arrange an open scientific meeting in the summer of 1967, at which time the report of the study and reports by others who have studied this problem can be presented in an open meeting and, therefore, be made available to the occupational health profession. It is to be emphasized that neither the clinical information nor the confidential process information nor correlations between the two will be associated with specific industries or plants. The plants and participating companies will be identified only by code letters known only to the Institute of Industrial Health.

Conduct of Study and Cost

The University of Michigan's Institute of Industrial Health has prepared a rough estimate of the cost of the study based on the plan outlined above plus the assumption that there will be approximately twenty participating companies with 35 participating plants, and a total study population of some 20,000 individuals. The cost is estimated at \$75,000. This will cover the following services by the Institute:

- (1) Planning and designing the study;
- (2) Conduct of a planning and instruction meeting for participating company representatives;

- (3) Interpretation of hand x-rays submitted by participating companies (two independent radiologists);
- (4) Design, preparation, printing, tabulation and analysis of the health and vocational questionnaires;
- (5) Inspection of participating plants by a team of physicians and industrial hygienists;
- (6) Analysis and correlation of the data; and
- (7) Report of the study.

The participating companies will be responsible for identifying the exposed populations in their plants, obtaining hand x-rays and sending them to the University of Michigan along with identifying data, obtaining completed self-questionnaires from the individuals in their exposed population study group, assigning contacts to work with the Institute study personnel, and arranging with the Institute for the plant visits and for assisting the study team therein.

It is difficult to estimate the cost to a participating company. A suggested schedule of capacity classifications for suspension resin and fees that would seem appropriate is shown in the following as a probable maximum and minimum required in each group:

	<u>Plan 1</u>	<u>Plan 2</u>
Over 200 million lbs./yr.	\$10,500 each	\$8,850
100-200 million lbs./yr.	6,300	5,300
50-99 million lbs./yr.	3,200	2,650
Under 50 million lbs./yr.	2,100	1,750

Under Plan 2 we are assuming participation by 21 resin producers with estimates based on published information of probable resin capacity, while Plan 1 is based on 18 participating. It is suggested that each participating company select the appropriate classification in arriving at the probable assessment required to make up the total for the Michigan project. In a confidential letter, will you please advise F. H. Carman in the Washington office of the classification that would be applicable in your case, and this will be used in arriving at final assessments required to fund this program.

The additional direct cost will be least for those companies and plant locations where there is an in-plant medical service with radiographic facilities, in which case the time away from work will be short and there may not be a direct cost for radiographic interpretation. In some cases there may be a sizable number of the population to be studied who have had recent hand x-rays, in which case the cost will be further reduced. In those plant situations where there are no in-plant radiographic services and where the exposed individuals must be sent to local radiologists for hand x-rays, the direct cost of the x-rays and the time away from the job will be higher. In some locations it is estimated that the charges for radiographic examination of the hand may be as high as \$10 per individual.

Plants

- LC
 - Dissolver - 40 MM
 - Solvent Clean - ? 30 MM
 - Monomer -
- TC
 - Monomer - 140 MM
 - Suspension - 140 MM
 - Non solvent - 25 MM ?
 - Solvent - 100 MM ?
- ~McKibby BB. 2 & 7 - Shunting
- Bay 3 - Granular
- 9 - Regids

Ottawa - No ? Shunting & Regid

Weyne - No ? Shunting & Regid

No Monomer Plants - ?

Waco City - ?

South Charleston - ?