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AMERICAN MUTUAL LIABILITY INSURANCE COMPANY

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REPORT OF INVESTIGATION

SQUARE "D" COMPANY

CEDAR RAPIDS, IOWA



By

Industrial Hygienist

R. C. Unterbrink, Jr.

ENGINEERING DEPARTMENT



ACKNOWLEDGMENT

The author of this report wishes to acknowledge the courtesy extended to him by Mr. Max Garrick, Safety Director, as well as the help of Amlico Engineer, Mr. Ray Hamilton.

PURPOSE

The purpose of this visit was to evaluate the possible causes of reported cases of dermatitis in plant workers, however, during the visit another occupational disease exposure (asbestos) was discovered which will also be evaluated.

LIMITATIONS

Neither the visit of our representative under the terms of our policy nor the making of this report constitutes an undertaking to determine or warrant that your premises or operations are safe.

CONCLUSION

1. The fiberglass filter known as Glastex is probably the cause of reported dermatitis cases.
2. The use of asbestos fiber in the plant produces an inadequately controlled airborne contamination situation as evidenced by two excessive air samples obtained during the visit to the plant.

RECOMMENDATIONS (DERMATITIS)

1. All persons who physically handle the fiberglass containing material, should wear protective equipment including gloves. They should also insure that all skin areas are covered.
2. This operation should be isolated as much as possible.
3. Every effort in the way of personal hygiene should be made and most particularly, those persons who are exposed should wash the fiberglass material off their skin anytime they suspect that they have touched the material.

RECOMMENDATIONS (ASBESTOS)

1. If at all possible, a less toxic substitute should be found for asbestos.
2. If no substitute is possible, all the requirements delineated in the OSHA standard on asbestos must be complied with.

METHOD OF ANALYSIS

Membrane filters (millipore) were used in filter holders and these holders were attached to a MSA Monitaire portable electric pump which provided a source of suction.

The airborne contamination including ambient asbestos fibers were collected on these filters. They were sent to the American Mutual Home Office Laboratory for analysis by Phase Microscope counting techniques. The results of these analyses are shown on the attached air analysis table.

The current Threshold Limit Value for asbestos incorporated in the recently promulgated OSHA standard on asbestos is a limit of not more than 5 fibers longer than 5 microns in length per cubic centimeter of air. A ceiling limit also is enforced which states that at no time may the fiber count ever exceed 10 fibers per cubic centimeter of air.

DISCUSSION (DERMATITIS)

The visit was directed toward evaluation of a past dermatitis problem. While considering this, the author observed what he considered represented a far more serious potential problem and that was the use of asbestos fiber. The dermatitis problem will be considered first, however.

Complaints have arisen concerning dermatitis allegedly developed during exposure to injection molding resin containing a fiberglass filler.

The author saw the industrial hygiene report prepared by a Team of State Health Specialists and it appeared to have been done by very knowledgeable individuals. They did not reach a firm conclusion as to what caused the dermatitis and indeed this often cannot be done.

Dermatitis cases usually result from poor personal hygiene practices often aggravated by high temperatures. They usually are cured by simple application of good personal hygiene. Often no exact cause is ever found. Fiberglass is generally inert physiologically from an inhalation standpoint, but some kinds of fiberglass can cause skin irritation. Whether this is the case here or not, the author cannot say, however, since this problem only occurs at the operation that utilizes this material, it seems logical that this is the offending material. Whatever the cause, the only solution will be to utilize proper protective equipment. This would involve gloves and the covering of all exposed skin as well. Barrier creams may help. When one is using a material suspected to causing dermatitis one cannot be too scrupulous in following all precautionary measures which would preclude skin contact. If skin contact does occur, the material should be washed off at once.

DISCUSSION (ASBESTOS)

Asbestos is used as a filler in some resin mixtures used for injection molding. It appears to be used at two locations, namely the pre-former machine and one particular injection molding press. Apparently, the exposure is not constant at either of these locations.

Even though the asbestos is mixed with other compounds apparently significant amounts do become airborne at both these locations as revealed by personal air samples taken at both these locations on a day when asbestos was being used.

The recently promulgated OSHA standard on asbestos is very stringent and all users of asbestos whose airborne concentration of asbestos fibers, revealed by air sampling to exceed the Threshold Limit Value, are obligated to follow the standard to the letter.

While only two air samples were taken and certainly they do not provide as definitive a sampling as would more numerous samples, they show such a high fiber count that it appears very likely that the standard of five fibers longer than 5 microns in length per cubic centimeter of air is in fact exceeded. The standard also calls for a lowering of the Threshold Limit Value from 5 fibers to 2 fibers in 1976 which will likely preclude the use of asbestos without sophisticated exhaust ventilation.

Briefly, the standard calls for preemployment physicals, x-rays and air monitoring every six months. It also requires the operation utilizing asbestos to be isolated from other operations, for exhaust ventilation to be provided, and for ^{Wet} ~~what~~ methods be used, if possible.

Careful reading of the standard is necessary to reveal all that is required, but the requirements in general are quite extensive and if at all possible, a substitute for asbestos should be obtained.

DATE 1-16-73

PLANT Square D Company LOCATION Cedar Rapids, Iowa

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AIR ANALYSIS TABLE

[illegible]

Threshold Limit Value 5.0

A—Milligrams per Cubic Meter

B—Parts per Million

C—Million Particles per Cubic Foot

D—Micrograms per Cubic Meter E - Fibers/ml

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