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PLAINTIFF'S EXHIBIT
UC-2916

INTERNAL CORRESPONDENCE

UNION CARBIDE CORPORATION • 270 PARK AVENUE, NEW YORK, NEW YORK 10017

To (Name) Mr. J. W. Rawlings
Division Mining & Metals Division
Location 38th floor
New York Office

Date September 24, 1971

Originating Dept.

Answering letter date

Subject

Copy to Mr. E. Epremian
Mr. B. Ingalls
Mr. R. J. Klotzbach
Mr. P. J. Morgan
Mr. J. L. Myers
Mr. H. B. Rhodes

Dear Mr. Rawlings:

Attached is the write-up you requested dealing with asbestos. Also attached are copies of methods for dust determinations referred to in the text.

Very truly yours,

Paul W. McDaniel

Paul W. McDaniel
Industrial Hygiene Engineer

PWM: dp

Attachments

A24019

UCC 016099

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A. Standards

The present (9-23-71) legal standards for concentrations of air contaminants in work places are given in Part 1910.93 of the Occupational Safety and Health Act as amended and published in the Federal Register, Volume 36, No. 157 - Friday, August 13, 1971. In this listing, which is informally known as "start-up limits", the standard for asbestos is given as follows:

(a) 12 fibers per milliliter of air greater than 5 microns or alternatively,

(b) 2 million total particles (including fibers) per cubic foot of air.

The listing further specifies how these values are to be determined. That is, fibers per milliliter of air are to be evaluated by the "membrane filter' method at 430X phase contrast magnification". A detailed description (unofficial) of this method is attached. Total dust particles per cubic foot of air are to be "based on impinger samples counted by light-field techniques". A description of this system as recommended by the U. S. Bureau of Mines is attached.

Either method of evaluating dust and fiber is presently acceptable, however it is the general feeling among industrial hygienists that the standard for asbestos will be lowered in the future to 5 fibers greater than 5 microns in length per milliliter of air as determined by membrane filters and phase contrast microscopy. When this occurs, the limit for asbestos based on total dust will have to be lowered proportionately or abandoned. There has been no indications which course will be followed with the total dust limit.

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The definition of an adequate air sampling program for control and evaluation of exposure of personnel to asbestos will depend on the operations involved. For stable, repeated daily operations the collection of air samples once a month will usually be enough. Samples should be collected in sufficient numbers during the work day to cover the usual variations that occur in the operations.

For operations that are highly variable samples should usually be collected on each occasion of use of asbestos unless it can be shown by experience that the work atmosphere can be expected to be about the same each time. The number of samples collected at each sampling period should be sufficient to cover the changes that might occur during the operations.

B. UCC Program at King City Mill and Mine

At King City airborne asbestos is evaluated by collection on membrane filters and counts of fibers according to the procedure given for phase contrast microscopy. Samples are collected once a month at various work locations including the cabs of tractors and other moving equipment and at plant property lines. Three 10-minute air samples collected at an air flow rate of 0.1 cubic foot per minute are usually enough to describe the conditions at each location unless the operation is highly variable. In this case samples are collected until it is felt that the number is enough to fairly represent the work environment. Effort is made to insure that the time of day when samples are collected at each location is varied from month to month.

Typical fiber counts at King City are 0-2 per milliliter of air at the wet side process locations and 3-14 per milliliter at dry side process

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locations. The broad range of results for the dry side reflects the effect of occasional bag breakage during filling or other events that would temporarily change the dust picture. Because of this possible variation in dust concentrations at dry process areas, the wearing of respirators is mandatory for exposed personnel and for any visitors to these locations.

The respirators supplied at King City are Wilson No. 600A equipped with Wilson filter No. R501 for dusts not significantly more toxic than lead. Both the respirators and filters bear the U. S. Bureau of Mines seal of approval. This combination of respirator and filter has been found to be acceptable by employees. Tests with the filters have shown them to be highly efficient (98%) in retention of asbestos fibers.

Control of dust is primarily provided by the application of local exhaust ventilation at points of dust generation. This has been found to be an effective procedure by which dust can be prevented from badly contaminating the work environment when used to best advantages through well designed and well maintained systems. Dust from the exhaust system is collected in bag collectors that have been found to be quite efficient for asbestos fiber.

Other control measures involve the wetting of ore piles and the use of covers on ore trucks. Both measures significantly help reduce possible spread of dust in outside areas.

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