UNION CARBIDE

INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS — INSTITUTE PLANT P. O. BOX 2831, CHARLESTON, WEST VIRGINIA 25330

To (Name) Mr. A. R. Clark
Division
Location

Date July 8, 1976

Originating Dept.

Copy to Mr. J. H. Lloyd
Dr. R. J. Sexton
Mr. F. Williams

Subject Asbestos Exposure Associated With Automotive Brake Systems

At the request of the Plant Medical Department, measurements of personnel exposure to asbestos fibers during brake repair and inspection job tasks have been made. The spirit of cooperation on the part of Mr. L. M. Hoffman was commendable while wearing personnel samplers during three types of job tasks involving brake maintenance. Discussion of each of the job performances, together with results is as follows:

FIRST: The right rear wheel of a pickup truck was removed for inspection. It was determined that new brake shoes were required and the mechanic proceeded to vacuum the brake drum and replace the shoes. He did not wear a respirator as a need was not apparent. Time involved 24 minutes as sampling time. Asbestos fiber count was 0.4 fibers per ml of air with the threshold limit valve (TLV) being two fibers greater than five micrometers in length.

SECOND: The left rear wheel was removed for inspection and the need for replacement was apparent. At our request, the mechanic wore a 3M respirator and used compressed air to clean the brake drum before changing the brake shoes. Significant quantities of fine dust was generated, which dispersed throughout the shop. Elapsed time and/or sampling time was 19.5 minutes. Asbestos fiber count of fibers greater than five micrometers in length was 0.2 per ml of air. There was considerable dust collected on the sample but less fibers, possibly due to air dispersion.

THIRD: The right front disc brake was removed, inspected, and replaced during a sampling time of two minutes. No air or vacuum was used. The results were 1.9 fibers per ml, which likely indicates the greatest exposure potential associated with routine brake service to be the removal and replacement of the wheel for inspection when additional work is not required. This factor is time related.

We are of the opinion that even at the new two-fiber TLV, there is generally no problem with excessive exposure to asbestos in the automotive garage. Use of the recently acquired vacuum capability should continue to be required. The 3M respirators should be used on any special occasion where dust levels are suspect of being excessive.

Mr. Hoffman should be informed of the results of these measurements, and if there are questions, please call me at 6161.

H. H. Frazier

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CHEMICALS AND PLASTICS

To (Name) Mr. J. F. Ballew, Jr.
Division Building 70-108A
Location INSTITUTE PLANT

April 6, 1976

E.R. - Industrial Hygiene

Copy to Ms. B. J. Mitchell
Mr. J. G. Perkins
Mr. F. Williams

You have asked that measurements be made of personnel exposure to airborne asbestos fibers while weighing dishes are being prepared for residue analyses. Our records show that a similar measurement was made in Specifications Laboratory Room 205, March 10, 1975, and was reported to be slightly above threshold limit value (TLV).

Three determinations have recently been made by fiber count on filter samplers worn by employees while preparing sample dishes in the Analytical Laboratory Room 108. The results of these samplings are as follows:

| Date | Employee | Fiber Count/ml Air |
|---|---|---|
| 12/22/75 | C. W. Devers | 4.9 |
| 1/12/76 | D. DeLuca | 47.6 |
| 3/1/76 | J. O. Good | 7.7 |

We observed each of these samplings to be similar in technique and airborne dust was not visible in either instance. The TLV for asbestos dust exposure is currently 5 fibers greater than 5 micrometers in length per cc of air as a time weighted average (TWA) and a ceiling value not to exceed 10 fibers greater than 5 micrometers in length. As of July 1, 1976, the TLV will be reduced to 2 fibers as an OSHA allowable limit.

This job task is only infrequently performed and it is unlikely that the TLV as TWA would ever be exceeded. Our measurements, however, show that the ceiling level can be excessive. We, therefore, recommend that work involving preparation of sample dishes with asbestos fibers be performed within an exhaust ventilated hood.

H. H. Frazier

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