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BUSINESS CONFIDENTIAL

PROJECT REPORT

DETERMINATION OF AIRBORNE ASBESTOS FIBERS
BUILDING 30
MARIETTA PLANT

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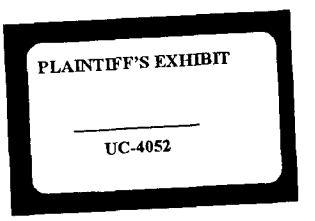
SUMMARY Air samples were taken during the addition of CALIDRIA asbestos to polysulfone resin on May 17, 1972, at the Marietta Plant. The asbestos was added to a feed hopper equipped with a local exhaust hood. All of the samples taken gave fiber counts well below the standard of 5 fibers/cc larger than 5 micrometers in length established by the Department of Labor for an eight-hour time weighted average exposure. Using the maximum fiber/cc values found and estimating the amount of time the employee spends in each location, the approximate time weighted average exposure found during this visit would be 0.15 fibers/cc greater than 5 micrometers in length.

INTRODUCTION At the request of Mr. R. O. Lohman, Safety Director of the Marietta Chemicals and Plastics Plant, the employee exposure to asbestos fibers was monitored during the addition of asbestos to polysulfone resin. The asbestos being added was Union Carbide CALIDRIA Asbestos, RG 101.

DISCUSSION The Occupational Safety and Health Act Asbestos Standard was published in the June 7, 1972, Federal Register(1) to become effective July 7, 1972. The 8-hour time weighted average limit of 5 fibers longer than 5 micrometers (μ), per cubic centimeter (cc) of air will be effective until July 1, 1976. At that date the 8-hour time weighted average will be reduced to 2 fibers. A ceiling limit of 10 fibers, longer than 5 μ per cc of air is permitted both before and after July 1, 1976.

The new asbestos standard states that no asbestos, cement, motar, grout, plaster or similar materials containing asbestos can be removed from shipping bags or other containers without being wetted, enclosed or ventilated.

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In a previous visit to sample asbestos[2], the exhaust hooded feed hopper could not be used due to presence of large lumps in the asbestos. The highest figure obtained at that time was 3.5 fibers $> 5\ \mu$ in length per cc of air (not time weighted). This occurred during the opening and dumping of the asbestos into a fiber pack. The recent production run was made with CALIDRIA asbestos which had been sieved to provide material in the range of 4 to 325 mesh. The exhaust hooded feed hopper was used and Table I gives the results of air samples taken in the breathing zone of the employees during the opening and dumping of asbestos into the hopper. The exhaust system reduced the exposure to a maximum of 0.3 fiber/cc found during this visit.

The other results shown in Table I show no significant exposure to asbestos fibers in the operating level as well as the second level feed hopper. By observing the employee, a maximum of two hours is spent on the second level around the area of the feed hopper during an eight-hour shift. The remainder is in the low level control panel area. Using the maximum fibers per cc values found in each of the locations, the eight-hour time weighted average exposure to asbestos fibers would be a maximum of 0.15 fibers/cc greater than 5 micrometers in length. Under present conditions, the 1976 standard could be met with this system.

There was a considerable amount of spillage of the asbestos because of torn bags. This material was covered with floor sweeping compound. The emergency standard[3] did not allow dry sweeping of asbestos; either wetting or vacuum cleaning was required. The new standard does not refer to this type cleaning. However, we feel that vacuum cleaning would be the preferable method to clean up spills as dry sweeping will tend to generate airborne fibers.

BIBLIOGRAPH

(1) Federal Register, Vol. 37, No. 110 - Wednesday, June 7, 1972, pp 11318-11322.
(2) Neff, J. E., "Determination of Airborne Asbestos Fibers, Polysulfone Unit, Marietta Plant", Project Report File No. 16634 (Dec. 1971).
(3) Federal Register, Vol. 36, No. 234 - Tuesday, December 7, 1971, Part 1910 Emergency Standard for Exposure to Asbestos Dust, pp. 23207 - 23208.

NOTEBOOK REFERENCE: 9JEN104

ATTACHMENT: 1 Table

J. E. Neff

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TABLE I

RESULTS OF AIR SAMPLING FOR ASBESTOS FIBERS DURING
ADDITION OF "CALIDRIA" ASBESTOS TO POLYSULFONE RESIN

Sample	Location	Sampling Time, Min.	Time Start	Fiber/cc > 5μ in length
1M	Operators' breathing zone during addition of 1 bag asbestos and the general area around feed hopper	12	9:43 AM	0.3
2M	Lower level around Cumberland cutter discharge chute	12	10:32 AM	0.1
3M	Operators breathing zone during addition and disposal of 1 bag of asbestos	3	10:15 AM	0
4M	General area around feed hopper. 1 bag asbestos dumped during this period	18	1:25 PM	0
5M	Lower level around panel board	15	1:45 PM	0.1

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