PLAINTIFF'S EXHIBIT

UC-2892

UNION CARBIDE

INTERNAL CORRESPONDENCE

MINING AND METALS DIVISION • P. O. BOX 579, NIAGARA FALLS, NEW YORK 14302

To (Name) Mr. C. C. Masterman
Division Research and Development
Location Niagara Falls

Date June 20, 1974
Originating Dept. "Calidria" Asbestos
Answering letter date
Subject Air Sampling, Building 158

Copy to Messrs. H. B. Rhodes
J. E. Skvaria

Air samples were collected June 14 and 17, 1974 in Building 158, first and second deck, in an effort to determine the amount of airborne asbestos fiber generated during the pilot production of "Calidria" Asbestos RG-600.

Sampling and fiber counting were carried out in accordance with OSHA Regulation 1910.93a, using the Bayer, Zummalde and Brown method for counting asbestos fibers by phase contrast microscopy (Bureau of Occupational Safety and Health, Feb. 1969).

Battery powered air pumps (M.S.A. type) calibrated to 2 liters per minute were used to collect personal breathing zone and environmental samples on Millipore membrane filters of 0.8 micron porosity.

Fiber counting was performed on a Vicker's phase contrast microscope at 400X utilizing a Porton reticle for fiber sizing and field definition.

The table contains the results of the fiber counts. The figures are reported as fibers, greater than 5 microns in length, per cubic centimeter of air sampled. A fiber is defined as any material having an aspect ratio greater than 3:1.

Because of the low fiber levels present, the calculation of Time Weighted Average (TWA) would not be necessary, since the Time Weighted Average cannot be greater than the highest fiber count. However, it may be worthwhile to present the TWA formula.

$$\text{Time Weighted Average (TWA)} = \frac{(C_1T_1) + (C_2T_2) + (C_nT_n)}{\Sigma T}$$

Where C = Fiber count in fibers/cc longer than 5 microns, and,
T = Time sampled

For example, if Stan Domin dumped oven trays for 21 minutes (sample F-2), bagged for 69 minutes (samples D-34 & D-50) and spent 72 minutes preparing batches of RG-600 (samples D-31 & D-13) his Time Weighted Average for that time period would be:

$$\frac{(21)\ (0.5) + (12)\ (1.9) + (57)\ (0.8) + (8)\ (1.3) + (64)\ (1.1)}{162} =$$

$$\frac{10.5 + 22.8 + 45.6 + 10.4 + 70.4}{162} = \frac{159.7}{162}$$

= 0.99 fibers/cc TWA

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This obviously is not an eight hour Time Weighted Average since only four hours of time was used for the calculation. The eight hour TWA could be figured by someone who knows the work routine and can realistically project which operations would take place in an eight hour day.

Please keep in mind that the calculations for this test are more of an academic exercise than a necessity, since neither the 10 fiber/cc ceiling limit nor the 5 fiber/cc Time Weighted Average are close to being exceeded.

As always, if you have any questions or comments, please do not hesitate to call.

Edward J. Kleber

Attachment
/ds

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SUMMARY OF FIBER COUNTS

Field No	Sampling Time	Description	Fibers/cc 7.54
		1) Dumping Oven Trays	
E-41	15 Min.	Personal - Operator (Ken Tyson) dumping dry pellets from oven trays into drums.	1.2
F-2	21 Min.	Personal - Operator (Stan Domin) dumping oven trays as above, and also cleaning floor of spilled material after dumping is finished.	0.5
D-6	32 Min.	Environmental - Located 1-1/2 ft. north of east side of dryer 4-1/2 ft. off floor during period of no activity immediately after oven tray dumping.	0.2
		2) Pilot Production of RG-600	
D-35	8 Min.	Personal - Operator (Ken Tyson) preparing batch of RG-600. Consists of placing drum of High Purity filter cake in position for dumping, and adding 73 pounds of High Purity Open fiber through charging hole. Ventilation provided by a vacuum cleaner with a 5 inch hose placed on floor at charging hole.	3.0
D-31	8 Min.	Personal - Operator (Stan Domin) assisting in preparation of above batch of RG-600. Duties include placing drum of High Purity filter cake in place, dumping cake into charge hole and placing ventilation hose in place.	1.3
D-37	64 Min.	Personal - Operator (Ken Tyson) assuming normal duties after preparation of one batch and before next batch.	1.3
D-13	64 Min.	Personal - Operator (Stan Domin) assuming normal duties between batches.	1.1
D-38	6 Min.	Personal - Operator (Ken Tyson) preparing a second batch of RG-600.	3.0
D-30	6 Min.	Personal - Operator (Stan Domin) assisting in preparation of batch of RG-600.	2.7
		3) Bagging Finished Product	
D-34	12 Min.	Personal - Operator (Stan Domin) bagging RG-600.	1.9
D-49	12 Min.	Personal - Operator (John Adams) weighing bags, adjusting weight by adding to or removing product from bags and placing on pallets.	1.6
D-50	57 Min.	Personal - Operator (Stan Domin) continuing to bag and charging fill hopper. A23731	0.8
D-14	56 Min.	Personal - Operator (John Adams) continuing to weigh bags and filling hopper.	0.7

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