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UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
270 PARK AVENUE, NEW YORK, N.Y. 10017

March 14, 1975

Mr. Lewis Cox, Special Assistant to the
Assistant Secretary for Occupational Safety and Health
Room 2115, Department of Labor
Labor Building
14th and Constitution Avenue, N.W.
Washington, D. C. 20210

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UCC-CALIDRIA

Dear Mr. Cox:

This letter covers the substance of our conversations with Messrs. McClure, Gilbert, Reis and you at the OSHA offices on March 13, 1975, regarding clarification of the OSHA Asbestos Regulations relating to medical examinations.

Union Carbide is actively engaged in the mining and milling of asbestos fiber at its plant in King City, California, and marketing its products throughout the United States and the Free World. In the main, Union Carbide's short fiber asbestos products can be characterized as serving specialty rather than commodity markets. For example, in 1974, 85 percent of our customers each purchased less than 50 tons of product.

The most important specialty product in our line is "Calidria" asbestos RG-244, a highly refined fiber that has been coated with silica. This material is currently produced at a rate of about 1,000 tons per year and in 1974 about 45% of this material was sold overseas, generating a favorable trade balance in excess of one-half million dollars. The domestic consumption of RG-244 is spread among 72 users, of which only 8 consume more than 2 tons per month. Although a 1,000 tons per year is trivial compared to conventional commodity asbestos uses, the dollar value is significant and this product is the cornerstone of our specialty business.

"Calidria" asbestos RG-244 is used principally as a viscosity control agent for polyester resin at addition levels of about 1%. It has substantial performance and economic advantages over its principle competitor, pyrogenic silica. It is noteworthy that pyrogenic silica is not currently regulated by OSHA and thus RG-244, which is strictly regulated, must overcome a serious competitive disadvantage. The "Calidria" asbestos is generally added to the resin by the original manufacturer but frequently the end user also adds smaller amounts for special adjustment of properties.

A majority of the resin is sprayed into molds, usually in conjunction with fiber glass, to form boat hulls, shower stalls, and various other reinforced plastic parts. The remainder is poured or "puttied" onto the mold or piece by hand. Some sanding or grinding frequently occurs in the finishing of the parts.

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Union Carbide Corporation has conducted air sampling programs at a variety of industrial locations (1) where "Calidria" asbestos RG-244 was mixed with resin on both a "small" and "large" scale basis, (2) where the asbestos-containing resin was sprayed, and (3) where the hardened resin parts were sanded or ground. The range of fiber counts found in each case is summarized in the following tables. Supporting data showing the details of the individual counts are available, if requested.

ADDITION OF "CALIDRIA" ASBESTOS RG-244 FIBER TO RESIN

Operation	No. of Samples	Time Per Sample (Min.)	Airborne Asbestos Ceiling Concentration (Fibers/cc >5u)
"Large Scale" dumping of 100-450 lbs. Representative of polyester manufacturing.	8	8-24	0.5-2.8
"Small Scale" dumping of 1-12 lbs. Representative of small compounders.	9	2.5-25	0.4-2.0

The table above summarizes the data for the addition of "Calidria" asbestos RG-244 fiber to the liquid resin. The addition normally takes place over a time period of less than 30 minutes, usually only once or twice a shift. We should emphasize that the values reported are ceiling concentrations which would be averaged with the much lower concentrations present when asbestos is not being used to arrive at the prescribed 8-hour, time-weighted average (TWA) concentration. The highest number found, 2.8 fibers/cc, is well below the allowable ceiling concentration limit of 10 fibers/cc specified in Occupational Safety and Health Standards Part 1910, §1910.93a.

Additional dust count data taken during spraying and grinding operations are summarized below:

USE OF RESIN CONTAINING "CALIDRIA" ASBESTOS RG-244

Operation	No. of Samples	Time Per Sample (Min.)	Airborne Asbestos Ceiling Concentration (Fibers/cc.> 5u)
Spraying of polyester resin containing up to 1.4% asbestos.	12	4-65	0-0.6
Sanding and grinding of polyester parts containing up to 3% asbestos.	15	4-49	0-0.4

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These operations are not usually continuous over an 8-hour shift but often last for extended periods. The 8-hour TWA values could thus approach the ceiling concentrations given in the table.

As would be expected, when asbestos has been wetted with resin, the fiber counts are substantially reduced. The highest value observed, 0.6 fiber/cc, is well below both the present 5 fibers/cc TWA level, as well as the 2 fibers/cc level to be imposed on July 1, 1976.

It is also important to understand in the interpretation of these data that the OSHA procedure for determining airborne asbestos concentrations does not distinguish clearly between asbestos and non-asbestos fibers. These counts were made by an experienced technician who did not include fibers which were obviously not asbestos. Any doubtful fibers, however, were counted as asbestos. It is our technical judgment that in most cases the spraying and sanding counts were in reality zero or very close thereto.

Although all of the fiber counts shown are substantially lower than OSHA standard, which becomes effective on July 1, 1976 (viz. 2 fibers/cc TWA and 10 fibers/cc ceiling), most of them are not zero. This causes a good deal of confusion amoung our customers as to whether or not employees, working in the areas where these fiber counts were obtained, are required to be provided with medical examinations since Paragraph (j)(3) of subpart 1910.93a states that the employer shall provide annual medical examinations for "each of his employees engaged in occupations exposed to airborne concentrations of asbestos fiber."

Because of the possible breadth in interpretation of "exposed to airborne concentrations of asbestos fiber," several of our major potential customers are reluctant to begin using this product although it offers substantial technical and economic advantages. While specific levels of exposure in the OSHA standard trigger certain compliance regulations, the definition of exposure as regards medical examinations is ambiguous.

The NIOSH Criteria Document on asbestos proposed the definition of "exposure to asbestos" shown below:

> "For purposes of this requirement the term 'exposed to asbestos' will be interpreted as referring to time-weighted average exposures above 1 fiber/cc. or peak exposures above 5 fibers/cc."

Such an interpretation represents an acceptable solution to this ambiguity problem. As precedent, we would mention that in the recently promulgated OSHA Standard on "Exposure to Vinyl Chloride" medical surveillance is triggered at an action level equal to one-half of the time weighted average. We see no reason why the same philosophy should not be applicable to asbestos.

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We are aware that OSHA is in the process of revising the present asbestos regulations and we certainly hope for some clarification of this matter in the amended regulations.

I appreciate your assistance in arranging these discussions.

Very truly yours,

W. C. Thurber
Product Manager - Asbestos

WCT/es

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