UNION CARBIDE CORPORATION

MINING AND METALS DIVISION

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JAMES W. RAWLINGS
VICE-PRESIDENT

March 30, 1972

Cargill Company
2801 Linwood Road
Linwood, California 90262

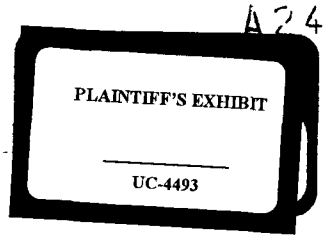
Attention: Mr. H. Nakano

Gentlemen:

Many users of asbestos have become justifiably uneasy about recently enacted and proposed federal regulations. Unfortunately, the publicity given to this governmental activity has tended to be of a sensational nature and has done little to place the question of asbestos toxicology in logical perspective. I take this opportunity, therefore, to state our firm belief that Union Carbide Corporation can comply with the regulations now applicable to our asbestos operations and with all reasonably anticipated additional regulations. Moreover, we believe that our RG-244 customers can, without undue burden, comply with these regulations as they apply to their operations. In this regard, it is our belief that if your facilities are designed to provide the protection required under present standards regulating exposure to styrene fumes and amorphous silica dust, that you will also meet the standards established for asbestos.

With regard to the toxicity of asbestos, it is important to note that asbestosis and statistical excess occurrences of bronchogenic carcinoma have been recorded only in connection with massive long term exposures to asbestos dust. The risk of this type of exposure primarily occurs in asbestos mines and mills and in manufacturing operations where asbestos usage is several thousand tons per year. The risk of long term massive exposure is <u>not</u> typical of operations utilizing RG-244. As you are well aware, RG-244 is used in relatively small quantities and is

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introduced as a small fractional addition to a strong binder resin on an intermittent basis.

At the present time, regulations pertaining to asbestos exposure are in effect under the Occupational Safety and Health Act. In addition, proposed permanent standards under this Act were published on January 12, 1972 and are now under review. Also, proposed regulations concerning asbestos emissions to the atmosphere under the Federal Clean Air Act are under review. The ultimate scope and content of the regulations and standards under review should be determined by mid-year. At that time, we will be prepared to provide compliance information and assistance to our customers relative to newly adopted regulations.

It is clear that the main thrust of the OSHA standards will be a limitation on exposure to airborne concentrations of various substances including amorphous silica, styrene and asbestos. Under the OSHA regulations now in effect, the basic asbestos exposure limit for any employee is 5 fibers per milliliter on an 8 hour time weighted average. This limit is known as a threshold limit value, or TLV. The present TLV for amorphous silica is 20 million particles per cubic foot, or 80 milligrams of SiO_2 per cubic meter with the weight usually limiting. Also, TLVs have been established for many other substances, all designated as "air contaminants", such as styrene, mica, talc and coal dust. The present OSHA regulations applicable to these contaminants indicate engineering methods should be utilized to obtain dust or fume control to the prescribed level where this is feasible. However, respirators can be used to control exposure to asbestos, as follows:

Airborne Concentration (1)

8 Hour Exposure (2)	15 Minute Exposure (3)	Required Mask Type	Typical Mask (4)
5 max.	10 max.	None Required	--
25 max.	50 max.	U.S. Bureau of Mines Schedule 21B. Negative pressure on breathing. Covers nose and mouth.	Willson Model 1009 with R 520 Filter an M-S-A No. 86432 with Type H, Ultra Filter and others.

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250 max.	500 max.	U.S. Bureau of Mines Schedule 21B. Powered filter positive pressure.	Personal Environment Systems, Inc. Hobd 330 or 351 with 1900 Series filter.
Over 250	--	U.S. Bureau of Mines Schedule 19B. Type C positive pressure, air supplied.	Willson GA2H M-S-A Lead-Foe and others.

(1) Fibers per milliliter greater than 5 microns in length, as determined by the membrane filter method at 400-450X magnification (4 millimeter objective) phase contract illumination. Reference: Federal Register, 36(234); 1910.93a (Tuesday, Dec. 7, 1971).

(2) 8-Hour time weighted average.

(3) 15 Minutes in an hour for up to 5 hours in an 8-hour day.

(4) Not a complete list, but a list will be sent upon request.

Experiments which we recently conducted indicate that the TLVs for both asbestos and amorphous silica may be exceeded during the introduction of the material into unventilated resin mixing tanks. The range of readings for asbestos and amorphous silica during the mixing operation were, respectively, 1.4 to 11.5 fibers per milliliter (average 5.0) and 24.0 million to 39.0 million particles of silica per cubic foot (average 30 million.) Other readings for asbestos fibers were as follows:

Operation	% Asbestos in Material	Fiber Count Range per ML	Avg. Fiber Count per ML
Spraying polyester resin in styrene with chopped fiber glass - boat hull and shower stall fabrication.	0.4 to 0.5	0.8 to 1.4	1.12
Hand sanding polyester furniture	0.05	<0.1	<0.1
Power sanding boat hull	0.4	2.1 to 3.0	2.5

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We, of course, recommend that you have your own operations surveyed by a qualified industrial hygienist to determine existing dust and fume levels. In this regard, we once again state our firm belief that if your facilities are designed to provide the required protection from dust and fume hazards for silica and styrene, that you will also meet the standards for asbestos.

The information set forth above is certainly not, and was not intended to be, an exhaustive analysis of present or proposed regulations and compliance procedures. We are willing, however, to meet with representatives of your company for the purpose of examining the presently applicable regulations and compliance procedures in detail.

Very truly yours,

James W. Rawlings.

JWR:mc

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