

AMERICAN SMELTING AND REFINING COMPANY
Department of Hygiene
Salt Lake City, Utah

February 24, 1965

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Mr. E. A. Farrell
Lake Asbestos of Quebec
P. O. Box 127
South Plainfield, New Jersey

Dear Ed:

In your letter of February 15 you requested information for
W. R. Grace Co. on:

1. "Maximum dust level permitted in different states and industries or references."

Most of the states have adopted the limit recommended by the American Conference of Governmental Industrial Hygienists, a quasi-official group which has assumed leadership in establishing safe limits for many air contaminants. The ACGIH limit for asbestos dust is 5 million particles per cubic foot of air for 8-hour, continuous, daily exposures. The limit applies to samples collected with the Greenburg-Smith impinger, or by a comparable method, and counted by light field microscopy.

A complete discussion of dust sample collection and evaluation is given in "Industrial Dust" by Drinker and Hatch, published by McGraw-Hill, and in "Industrial Hygiene and Toxicology," Volume I, published by Interscience Publishers, New York.

2. "Data and references on critical particle size."

There is some controversy over the relative dangers of small particles (short fibers under 3 microns in length) and long fibers of 10 microns or more. Long fibers may provoke a fibrous reaction in lung tissue somewhat more than short fibers. But long fibers in the air have a lesser chance of getting down deeply into the lungs because of entrapment in the upper respiratory system. So the relative dangers of small and large particles tend to balance out.

EXHIBIT

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A comprehensive discussion of dust particle size and its significance is given in "Pulmonary Deposition and Retention of Inhaled Aerosols" by Hatch and Gross, Academic Press, New York, 1964.

3. "Recommendation on how to measure dust level - equipment and procedure."

Although the original Greenburg-Smith impinger method of dust sampling is recognized as standard, it has been shown that sampling with properly calibrated midget impingers, portable electrostatic precipitators and membrane (Millipore) filters will give comparable results. The important part of the dust measurement is the counting - by light field with a 16 mm objective and 10X eyepiece and a proper counting cell. Counting is an exacting and tedious procedure.

4. "Mask and filter recommendation."

Any respirator and filter combination approved by the U. S. Bureau of Mines for protection against pneumoconiosis-producing dusts will provide satisfactory protection. The respirator should be fitted carefully to each individual. If one brand does not fit snugly, another should be tried. The leading manufacturers of respiratory protective equipment are Mine Safety Appliances Company, American Optical Company, and Willson Products.

5. "References on National and State regulations related to asbestos and its products."

The only regulations of which I am aware relate entirely to the workroom air dust levels in the production of asbestos and in the fabrication and use of asbestos products. Some alarmists have raised the question of public health and asbestos dust levels in the air over streets and highways. I doubt that such cries of alarm will be taken very seriously. First, there is no credible evidence that there is any real health hazard to the general public. Second, in a mixed dust exposure such as all of us have on a busy street, the identification of asbestos dust, among all the different types of dust present, becomes practically impossible.

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Mr. E. A. Farrell

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Attached is a Hygienic Guide on asbestos published by the American Industrial Hygiene Association. I suggest that the Guide might be useful in answering routine inquiries about asbestos dust. Additional copies may be ordered from AIHA, 14125 Prevost, Detroit.

Very truly yours,



E. W. Nelson

KWN/mb
Encl.

cc: M. J. Messel (no encl)
R. D. Williams ✓
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