

"CALIDRIA" ASBESTOS PELLETS

HEALTH AND OSHA INFORMATION

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INTRODUCTION

The Williams-Steiger Occupational Safety and Health Act was passed in 1970 with the stated objective of assuring every American worker a safe and healthy workplace. The first health standard promulgated under this act covered exposures to airborne asbestos and went into effect on June 7, 1972. OSHA proposed extensive revisions of the regulations on October 9, 1975. The proposal has been going through a variety of administrative procedures including feasibility and inflationary impact studies. The revised version is expected sometime in the first half of 1978.

Asbestos has received a great deal of attention and publicity in the last several years. Unfortunately, much of the media treatment of the subject has been emotionally oriented and distorted and, in some cases, bordering on the sensational and untrue. Many users of asbestos and products containing asbestos have been misled regarding the safety of asbestos and what is needed to comply with the OSHA requirements.

The information presented in this folder has been collected as a service to "Calidria" asbestos users. It is intended to help put both the health and OSHA compliance questions in a reasonable perspective. Included are:

1. A summary of the main provisions of the OSHA Asbestos Standard and a copy of the regulations.
2. Airborne asbestos fiber count data obtained by Union Carbide at a variety of industrial locations during the addition of "Calidria" asbestos pellets to various processes.
3. Two pamphlets, "What You Should Know About Asbestos and Health" and "Asbestos and Health" published by the Asbestos Information Association/North America. The first is an employee oriented discussion of both health and OSHA while the second addresses the health question. Additional copies are available on request.
4. A Material Safety Data sheet and analytical data on "Calidria" asbestos.

OSHA REGULATIONS

Introduction

After extensive public hearings, a Federal standard for Exposure to Asbestos Dust was published in the Federal Register, Volume 37, No. 110 on Wednesday, June 7, 1972. A copy of this standard (1910.1001) is included with the literature at the back of this booklet⁽¹⁾.

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- (1) Some states have established their own regulations and enforcement programs and have been certified by OSHA. Generally, these regulations are identical to 1910.1001 but occasionally there are important differences. This discussion applies only to the Federal standard. Information on any particular state is available upon request.

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Basically, the standard can be divided into the following five major categories:

1. Standards:

Defines the allowable airborne asbestos fiber content in the workplace.

2. Monitoring:

Defines the method of collecting samples and measuring the airborne fiber concentration.

3. Methods of Compliance:

Defines acceptable procedures to meet the allowable limits.

4. Medical:

Specifies frequency and type of medical examinations required.

5. Warning Signs and Labeling:

Specifies when warnings are necessary and the wording of such warnings.

The essential features of these categories are discussed in the remainder of this section. Before looking at these, however, it should be made clear that in the most basic sense the regulations require that every place of employment where asbestos is used must be monitored to determine the exposure level of airborne asbestos fibers. If the levels are well within the allowable limits, the only additional requirements are those relating to medical examinations. If the levels are not clearly within compliance, all provisions of the regulations apply. There has been a great deal of confusion on this distinction, occasionally even with OSHA field inspectors.

Standards

The present OSHA standards set a maximum exposure to airborne asbestos fiber of length longer than 5 μ of:

1. An 8-hour, time-weighted average (TWA) of 2 fibers/cc.
2. A ceiling concentration of 10 fibers/cc.

Note particularly the use of the time-weighted average over the 8-hour shift. An operator performing one or two short additions of RG-244 per shift, as is typical of polyester producers, would have his exposure during the dumping time averaged with zero (or a very low background level) for the rest of the shift. This, obviously, tends to greatly reduce the 8-hour TWA.

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Monitoring

The regulations require an initial monitoring to determine whether the workplace meets the required levels. Thus:

"Within six months of publication of the regulations (June 7, 1972), every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine where every employee's exposure to asbestos fibers is below the prescribed limits."

Monitoring usually is done by the membrane filter/personal air sampler, which can be obtained from a number of manufacturers.

The personal air sampler draws workplace air onto a filter which collects the particulates and fibrous dust in the air. This filter is then placed under a microscope and the number of fibers counted. After the count is complete, the actual fiber concentrations, expressed as fibers per cubic centimeter of air, are calculated by formula.

After the initial monitoring, the regulations state:

"...samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by paragraph (b) of this section."

The section that has been underlined shows that if the initial monitoring give levels that are well below the allowable limits and no change is made in the method of operation which would increase dust levels, no further monitoring is required. It is a good and recommended practice, however, to monitor at regular intervals to make sure that the limits are being met.

It should also be understood that you cannot be cited legally for exceeding the allowable limits on the basis of your own monitoring. OSHA must base any citations issued on their own tests.

Methods of Compliance

If monitoring shows a plant or operation to be in excess of the limits, a number of ways are prescribed to bring it into compliance. These include, but are not limited to, engineering controls such as isolation, enclosure, exhaust ventilation, and dust collection. Certain work and housekeeping practices and waste disposal procedures are specified. Respirators, special clothing, and change rooms are also required under certain conditions.

It is most important to understand that these compliance procedures are required only if the allowable airborne asbestos fiber limits are being exceeded or can be expected to be exceeded under reasonably foreseeable circumstances. They are not automatic requirements that apply wherever asbestos is present.

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Medical Examinations

Preplacement, annual, and termination medical examinations must be provided or offered by the employer for any employee "... engaged in occupations exposed to airborne concentrations of asbestos fibers." These medical records must be kept for 20 years and are available to the employee's physician.

This section has proved to be one of the most confusing in the regulations since it does not define any cutoff level below which examinations are not required. Finally, after five years of urging, OSHA issued a clarification. "Exposure to asbestos" is specified as any exposure which exceeds 0.1 fiber/cc $>5\mu$ in an 8-hour time-weighted average or a peak level greater than 0.5 fiber/cc $>5\mu$ based on a 15-minute sample period.

Caution Signs and Labeling

The regulations require that:

"Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section."

Wording for the signs is also specified.

There have been some cases where the OSHA inspectors have taken this to mean signs are required at any location where asbestos is present, regardless of whether or not the exposure limits are exceeded. Although this is clearly incorrect, there has been a tendency to post the signs and not contest the citation.

The regulations also require that:

"Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section will be released."

Wording for these labels is also specified.

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AIRBORNE ASBESTOS FIBER COUNTS

Table I shows the airborne asbestos fiber concentrations obtained for two types of manufacturing procedures. The upper portion of the table covers cyclic operations where a moderate amount of asbestos is added to a mixer, such as a Banbury, along with a variety of other dry ingredients. The operator is in the area steadily during a substantial portion of the shift. Air samples were collected across complete cycles and thus approximate time-weighted average concentrations.

The results of the 12 samples collected at three different manufacturing locations ranged from 0.1 to 1.3 fibers/cc. The current allowable level is 2 fibers/cc.

The lower portion of the table shows operations where a substantial quantity of asbestos is handled over a relatively short time only once or a few times during a shift. Samples were collected only during the time while asbestos and the emptied bags were handled and thus represent ceiling concentrations.

The results for eleven samples from nine locations ranged from 0.4 to 7.4 fibers/cc. The highest value was for a three-minute sample. Short sample times tend to give very erratic results. Without this single high value, the range is from 0.4 to 2.4 fibers/cc. The allowable ceiling concentration is 10 fibers/cc.

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