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SAFETY BULLETIN NO. 4B-17
December 22, 1971

REICHOLD CHEMICALS, INC.

S A F E T Y B U L L E T I N

ATTENTION: ALL GENERAL AND PLANT MANAGERS, ENGINEERS,
SAFETY DIRECTORS, SUPERVISORS, PRODUCT
MANAGERS, AND TECHNICAL SALES

**U. S. FEDERAL WILLIAMS-STEIGER OCCUPATIONAL
SAFETY AND HEALTH ACT OF 1970**

NEW FEDERAL ASBESTOS STANDARD PROMULGATED

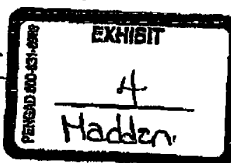
OSHA has discovered that currently effective standards for ASBESTOS DUST concentrations are dangerous to an employee's health and has instituted a new emergency standard to reduce the ALLOWABLE CONCENTRATIONS OF THIS HAZARDOUS SUBSTANCE.

The old standard was up to 12 fibers dust per milliliter of atmosphere (if the fibers are greater than 5 microns in length) for an eight-hour time-weighted average.

The new emergency standard immediately effective has reduced the permissible as not to exceed 5 fibers per milliliter for the same sized particles. Employers must provide engineering controls to abate excessive dust concentrations and provide respiratory equipment where the controls are not feasible or capable of controlling the dust levels. Requirements have also been established for the use of dust collecting devices hand type and power tools and for gathering and disposing of asbestos dust.

An atmosphere containing more than 5 fibers per milliliter but not more than 10 fibers (each greater than 5 microns in length) may be permitted up to a total of 15 minutes per hour for up to 5 hours in an eight-hour day.

Protective respirators worn by employees must be inspected, cleaned, repaired, stored and ready for use in an easily accessible place. All hand and power tools which produce asbestos dust must be provided with local exhaust ventilation and dust collectors. Asbestos cement must be mixed in closed bags or containers, waste and scrap must be collected and stored or disposed in closed bags. All clean up work must be done with vacuum cleaners. -- NO HAND SWEEPING IS ALLOWED.



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The OSHA National Consensus Standards and Established Federal Standards Title 29 Labor, Chapter 17, Part 1910 (now my Safety Bulletin No. 48-27) has been amended in Subpart G to include this new EMERGENCY ASBESTOS standard as SECTION 1910.93a "Asbestos Dust" under Section 1910.93 entitled "Air Contaminants". Amendments were made to Volume 36 of the Federal Register as 1910 on August 13, 1971, and 23207 on December 7, 1971, as new Section 1910.93a and found attached. Section 1318.95(d) of the Construction Safety Act has been amended to include 1910.93a, and Section 1910.12 has been amended to note this change.

An RCI plant using asbestos as a raw material in the manufacture of polyesters or other products should take another critical look at its own methods for keeping the dust atmosphere of asbestos below the allowable limits and making certain that the protective hoods and exhaust fans are of adequate capacity, work properly, and that cleanup procedures comply with the law. Also, make certain that employees are provided with the prescribed protective devices and are using them on the job in every situation where the device is required. The Cooke Color and Chemical Division at Hackettstown, Rockport, and Visalia should bring its operations into compliance with this law at once.

Peter Fess has advised that our polyester group has been interested in finding a replacement for CAS-D-81L, and Vinca Morrow has supplied me with a toxicology report from Union Carbide on its CALIDRIA ASBESTOS which offers promise of doing a better job at a more economical cost and is derived from the mineral chrysotile which produces a less toxic form of asbestos than normally encountered when derived from the mineral crocidolite.

Persons working with asbestos over a long period of time sometimes develop a disabling lung disease known as ASBESTOSIS from breathing the dust, and there is now evidence that some cancerous tumors have also resulted from widely varying exposures. Because asbestos under certain conditions is considered a CARCINOGEN, it is expected that the TLV of 5 for asbestos will eventually be reduced to a TLV of 2 asbestos fibers (particles) per milliliter of air. In New York City asbestos spraying of structural steel as fireproofing construction will be banned in early 1972.

Attached is a copy of the new Federal Emergency Asbestos Law Section 1910.93a. Also enclosed is a copy of the Union Carbide "Asbestos Toxicology Report" dated April 1, 1970.

C. J. Windsor
C. J. Windsor
RCI CENTRAL MANUFACTURING
White Plains, New York

RI-000010

18 661235
8 101035m

Advisory Note

(1) The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers per milliliter of air, averaged over the 8-hour period. The 8-hour time-weighted average shall be calculated by the following formula: $\frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{T_1 + T_2 + \dots + T_n}$ where $C_1, C_2, \dots, C_n$ are the airborne concentrations of asbestos dust in fibers per milliliter of air, and $T_1, T_2, \dots, T_n$ are the times in minutes that the employee is exposed to these concentrations. The sum of the T values shall not exceed 480 minutes (8 hours). If the employee is exposed to concentrations of asbestos dust in excess of 5 fibers per milliliter for any part of the 8-hour period, the employee shall be provided with respiratory protection in accordance with paragraph (c) of this section.

(2) The following methods, such as but not limited to, negative pressure respirators, and local exhaust ventilation, shall be used to meet the asbestos health protection in paragraph (1) of this section. Where such engineering methods are not feasible, or do not otherwise reduce the concentrations below those prescribed in paragraph (1) of this section, respiratory protective devices shall be provided and used in accordance with paragraph (c) of this section.

(3) (i) While the limits of exposure for asbestos dust prescribed in paragraph (1) of this section are in effect, and while (ii) of this section are in effect, no employer shall permit any employee to work in an area where the concentration of asbestos dust exceeds the permissible exposure limit.

Employment Health and Safety Code

18 661235
8 101035m

Advisory Note

(1) The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers per milliliter of air, averaged over the 8-hour period. The 8-hour time-weighted average shall be calculated by the following formula: $\frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{T_1 + T_2 + \dots + T_n}$ where $C_1, C_2, \dots, C_n$ are the airborne concentrations of asbestos dust in fibers per milliliter of air, and $T_1, T_2, \dots, T_n$ are the times in minutes that the employee is exposed to these concentrations. The sum of the T values shall not exceed 480 minutes (8 hours). If the employee is exposed to concentrations of asbestos dust in excess of 5 fibers per milliliter for any part of the 8-hour period, the employee shall be provided with respiratory protection in accordance with paragraph (c) of this section.

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(3) (i) While the limits of exposure for asbestos dust prescribed in paragraph (1) of this section are in effect, and while (ii) of this section are in effect, no employer shall permit any employee to work in an area where the concentration of asbestos dust exceeds the permissible exposure limit.

Under approved by the U.S. Bureau of Mines under the authority of 30 CFR Part 11, Bureau of Mines (30 CFR 11.101)

(1) For an atmospheric contaminant more than 800 times per milliliter of air, averaged over the 8-hour period, the 8-hour time-weighted average shall not exceed 5 fibers per milliliter of air, averaged over the 8-hour period. The 8-hour time-weighted average shall be calculated by the following formula: $\frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{T_1 + T_2 + \dots + T_n}$ where $C_1, C_2, \dots, C_n$ are the airborne concentrations of asbestos dust in fibers per milliliter of air, and $T_1, T_2, \dots, T_n$ are the times in minutes that the employee is exposed to these concentrations. The sum of the T values shall not exceed 480 minutes (8 hours). If the employee is exposed to concentrations of asbestos dust in excess of 5 fibers per milliliter for any part of the 8-hour period, the employee shall be provided with respiratory protection in accordance with paragraph (c) of this section.

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(3) (i) While the limits of exposure for asbestos dust prescribed in paragraph (1) of this section are in effect, and while (ii) of this section are in effect, no employer shall permit any employee to work in an area where the concentration of asbestos dust exceeds the permissible exposure limit.

(4) The following methods, such as but not limited to, negative pressure respirators, and local exhaust ventilation, shall be used to meet the asbestos health protection in paragraph (1) of this section. Where such engineering methods are not feasible, or do not otherwise reduce the concentrations below those prescribed in paragraph (1) of this section, respiratory protective devices shall be provided and used in accordance with paragraph (c) of this section.

(5) (i) While the limits of exposure for asbestos dust prescribed in paragraph (1) of this section are in effect, and while (ii) of this section are in effect, no employer shall permit any employee to work in an area where the concentration of asbestos dust exceeds the permissible exposure limit.

(6) The following methods, such as but not limited to, negative pressure respirators, and local exhaust ventilation, shall be used to meet the asbestos health protection in paragraph (1) of this section. Where such engineering methods are not feasible, or do not otherwise reduce the concentrations below those prescribed in paragraph (1) of this section, respiratory protective devices shall be provided and used in accordance with paragraph (c) of this section.

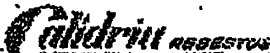
(7) (i) While the limits of exposure for asbestos dust prescribed in paragraph (1) of this section are in effect, and while (ii) of this section are in effect, no employer shall permit any employee to work in an area where the concentration of asbestos dust exceeds the permissible exposure limit.

18 661235

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Advisory Note

RI-000011



THE DISCOVERY COMPANY

UNION CARBIDE CORPORATION - MINING AND METALS DIVISION - 270 PARK AVENUE, NEW YORK, NEW YORK 10017
PLEASE REPLY TO: "CALIDRIA ASBESTOS" - P. O. BOX 579 - NIAGARA FALLS, N. Y. 14302

ASBESTOS TOXICOLOGY REPORT

It has been known for years that some persons working in asbestos production were prone to develop a disabling lung disease. In time, this condition became known as asbestosis and was related to exposure to high concentrations of asbestos dust. With further experience, it was found that men could work with asbestos without development of lung disease if dust concentrations were kept below a certain level.

It has been generally accepted that a worker will not develop asbestosis if he is exposed to no more than 5 million particles per cubic foot of air, even if this exposure continues for his entire working lifetime. Although no cases of asbestosis are known to have occurred when exposures have been maintained at or below this level, the ACGIH (which sets the threshold limit value (TLV) in the U. S. A.) has indicated they intend to lower the TLV for asbestos to 2 million particles per cubic foot in an effort to increase the safety factor incorporated in the limit. The U. S. Department of Labor has already issued a regulation under the Walsh-Healey Act placing the TLV for asbestos at 2 million particles per cubic foot for public contracts in which they have jurisdiction. This concentration of dust is generally not visible in the average work area unless a beam of light causing a Tyndall effect is present. Usually the dust concentration must be from 8-10 million particles per cubic foot (MPPCF) before its presence is visible in average lighting conditions.

Several years ago, it was reported that there was an increase in the incidence of cancerous tumors, especially of the lung, associated with asbestos. Recently there have been reports of some cancers occurring in individuals exposed to asbestos dust, but who have not developed clinical asbestosis. It is believed by most authorities that these cases have been associated with exposures significantly exceeding the Threshold Limit Value.

A type of cancer named mesothelioma has been noted to be associated with asbestos exposure in recent years. These tumors, while rather few in number to date, may occur in individuals with histories of only slight exposures, and that as much as twenty to forty years earlier. There is considerable evidence that crocidolite is most frequently associated with mesothelioma. From the data available it appears that the TLV of 5 MPPCF may not be low enough to protect against mesothelioma. Research on the problem continues.

Union Carbide's CALIDRIA Asbestos is chrysotile, not crocidolite.

RI-000012

pre-employment and periodic physical examination of workers are desirable. These should include chest X-rays to insure that the worker has no chest condition prior to work with asbestos and to determine that no lung changes are resulting from work with asbestos.

It is believed that the addition of asbestos at the proposed levels during the manufacture of products would be harmless to the consumer. Total dusting would have to be well in excess of any levels acceptable to the consumer for the asbestos concentrations to approach the Threshold Limit Value.

In conclusion, while asbestos dust in excess of the Threshold Limit Value is potentially harmful, as are many other dusts encountered in industry, it is readily controlled as other such dusts and it can be used safely with appropriate precautions.

Industrial Medicine And
Toxicology Department
Union Carbide Corporation

Revised
4-1-70

CAL-13

RI-000013

Control of asbestos dust exposure is therefore necessary. The control methods are the standard ones applicable to a variety of dusty operations. They include closed flow systems, wet processes where possible, and adequate exhaust ventilation where openings in the system are necessary. Relieving is sometimes used to improve the handling characteristics of otherwise dusty materials. Where satisfactory containment is not within the Threshold Limit Value is impractical or impossible, efficient and reliable respirators are available for the protection of the employee. A program of environmental monitoring is highly desirable to determine that Threshold Limit Values are not being exceeded. In manufacturing industries it would be desirable to know the dust concentrations where the asbestos is dumped from bags into the process. Concentrations would also be determined where dusting occurs in finishing products. While initial dust determinations should be made at frequent intervals, once the level has been established as satisfactory, the frequency may be extended to occasional tests to assure continuation of a satisfactory condition.