

RJ Lee Group Comments

I am speaking in the time allotted to Dr. Richard Lee, Dr. Matt Sanchez
and myself, Dr. Bryan Bandli

We are all employees of RJ Lee Group, Monroeville, PA

Collectively we have more than 70 years experience in the development of methods for
asbestos analysis, and in the performance of analysis of samples for asbestos

RJ Lee Group (RJLG) has been recognized by EPA for the quality of their work and for the
contributions to the development of standard methods for the analysis of asbestos

RJ Lee Group (RJLG) scientists have published extensively in the peer reviewed literature

RJ Lee Group has extensive experience testing talc for asbestos

RJ Lee Group has worked with both defense and plaintiff lawyers

Both Drs. Bandli and Sanchez are currently working as defense experts in cosmetic talc
litigation

The Current Proposal Repeats Past Mistakes

- Our experience dates to the Reserve Mining case when TEM was first used to analyze samples for asbestos and methods were still being defined
 - The predicted outbreak of asbestos disease or mesothelioma in Silver Bay, Duluth, and Minneapolis never materialized
- Asbestos methods were in their infancy during this time period
- Grouping a hazardous substance with one that does not have similar toxicological properties prohibits the ability to monitor harmful effects
 - EMPs do not possess the same toxicity as asbestos
- Current analytical protocols designed to assess occupational exposure in the workplace:
 - These methods are not adequate for EMPs
- For MSHA and OSHA rules on the subject
 - 30 CFR Parts 56, 57, and 71 - 2008
 - 29 CFR Parts 1910 and 1926– OSHA 1992

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Parts 1910 and 1926

[Docket No. H-033-d]

Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite

AGENCY: Occupational Safety and Health Administration, Labor.

ACTION: Final rule.

SUMMARY: In this final standard the Occupational Safety and Health Administration (OSHA) amends its present standards for regulating occupational exposure to asbestos in general industry (29 CFR 1910.1001) and construction (29 CFR 1928.56).

OSHA has reviewed available relevant evidence concerning the health effects of nonasbestiform tremolite, anthophyllite and actinolite and has also examined the feasibility of various regulatory options. Based on the entire rulemaking record before it, OSHA has made a determination that substantial evidence is lacking to conclude that nonasbestiform tremolite, anthophyllite and actinolite present the same type or magnitude of health effect as asbestos. Further, substantial evidence does not support a finding that exposed employees would be at a significant risk because nonasbestiform tremolite, anthophyllite or actinolite was not regulated in the asbestos standards.

OSHA hereby lifts the Administrative Stay, removes and reserves 29 CFR 1910.1101, and amends the revised asbestos standards to remove nonasbestiform tremolite, anthophyllite and actinolite from their scope.

DEPARTMENT OF LABOR

Mine Safety and Health Administration

30 CFR Parts 56, 57, and 71

RIN 1219-AB24

Asbestos Exposure Limit

AGENCY: Mine Safety and Health Administration, Labor.

ACTION: Final rule.

SUMMARY: The Mine Safety and Health Administration (MSHA) is revising its existing health standards for asbestos exposure at metal and nonmetal mines, surface coal mines, and surface areas of underground coal mines. This final rule reduces the permissible exposure limits for airborne asbestos fibers and makes clarifying changes to the existing standards. Exposure to asbestos has been associated with lung cancer, mesothelioma, and other cancers, as well as asbestosis and other nonmalignant respiratory diseases. This final rule will help improve health protection for miners who work in an environment where asbestos is present and lower the risk that miners will suffer material impairment of health or functional capacity over their working lifetime.

U.S. GOVERNMENT PRINTING OFFICE: 2000-10-10

Page 1 of 1

56970

NEWS from CPSC

U.S. Consumer Product Safety Commission

Office of Information and Public Affairs

Washington, DC 2020

FOR IMMEDIATE RELEASE

June 13, 2000

Release # 00-123

CPSC Contact: Russ Radt

(301) 504-0580 Ext. 116

CPSC Releases Test Results on Crayons

Industry to Reformulate

Washington, D.C. -- The U.S. Consumer Product Safety Commission (CPSC) today released results of tests on crayons after concerns were raised about asbestos in some popular brands.

CPSC found a trace amount of asbestos in two Crayola crayons made by Binney and Smith and one Prang crayon made by Dixon Ticonderoga. However, the amount of asbestos is so small it is scientifically insignificant.

In Crayola crayons and Prang crayons, CPSC also found larger amounts of another fiber, called "transitional" fiber, which is similar in appearance to asbestos fiber. While there are potential concerns about these fibers if children are exposed to them, CPSC tests concluded that the risk a child would be



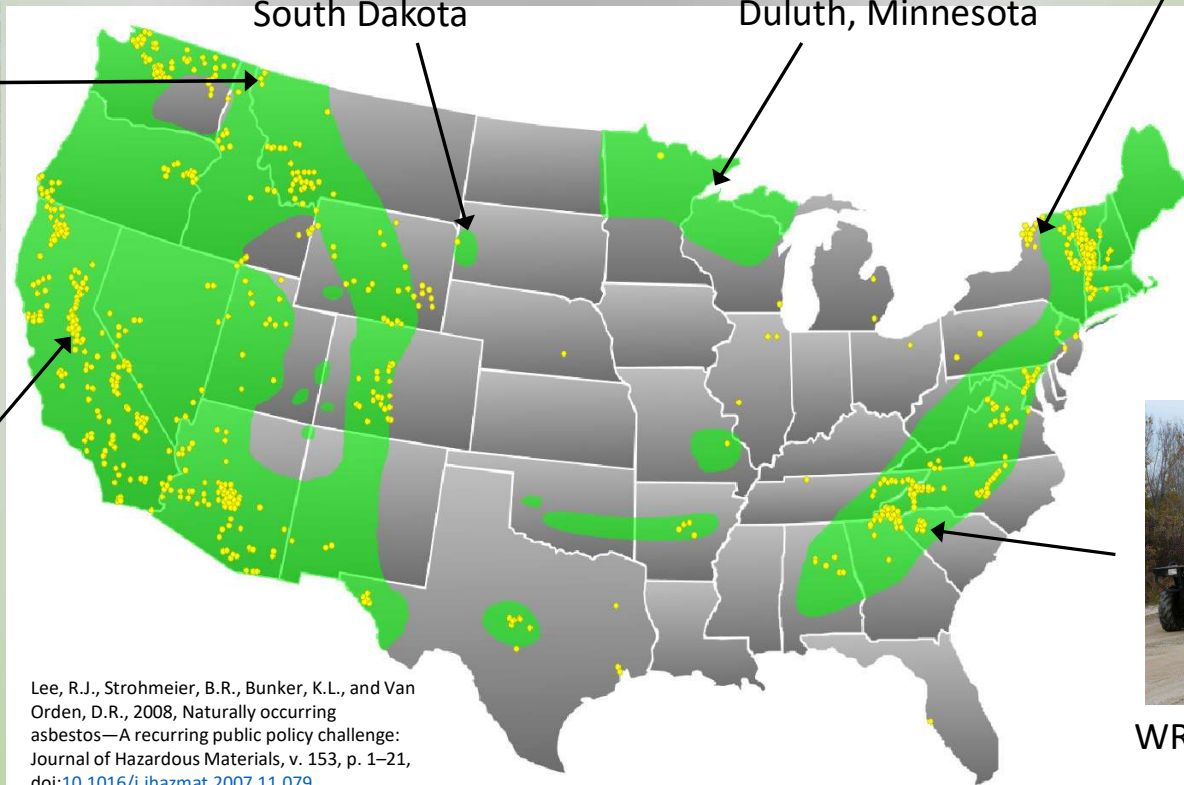
Homestake Gold Mine
South Dakota



Reserve Mining Company
Duluth, Minnesota



R.T. Vanderbilt Co.
New York
Tremolitic Talc



Lee, R.J., Strohmeier, B.R., Bunker, K.L., and Van Orden, D.R., 2008, Naturally occurring asbestos—A recurring public policy challenge: *Journal of Hazardous Materials*, v. 153, p. 1–21, doi:[10.1016/j.jhazmat.2007.11.079](https://doi.org/10.1016/j.jhazmat.2007.11.079).



WR Grace
Libby, Montana



El Dorado Hills, CA



WR Grace Exfoliation Plant
Enoree, SC

CURRENT INTELLIGENCE BULLETIN 62

Asbestos Fibers and Other Elongate Mineral Particles: State of the Science and Roadmap for Research

Revised Edition

Epidemiological evidence clearly indicates a causal relationship between exposure to fibers from the asbestos minerals and various adverse health outcomes, including asbestosis, lung cancer, and mesothelioma. However, NIOSH has viewed as inconclusive the results from epidemiological studies of workers exposed to EMPs from the nonasbestiform analogs of the asbestos minerals. Populations of interest for possible epidemiological studies include workers at talc mines in upstate New York and workers at taconite mines in northeastern Minnesota. Others include populations exposed to other EMPs, such as winchite and richterite fibers (asbestiform EMPs identified in vermiculite from a former mine near Libby, Montana), zeolites (such as asbestiform erionite), and other minerals (such as fluoro-edenite). Future studies should include detailed characterizations of the particles to which workers are or have been exposed.

Inclusion of all EMPs is misguided

Lack of uniform policies and different interpretations of regulatory rules and scientific results have resulted in wide discrepancies in asbestos assessments and recommended remedial actions in many areas

Asbestos counting rules often simply specify the size and shape of “fibers,” i.e., aspect ratio $\geq 3:1$, $\geq 5 \mu\text{m}$ length, parallel sides

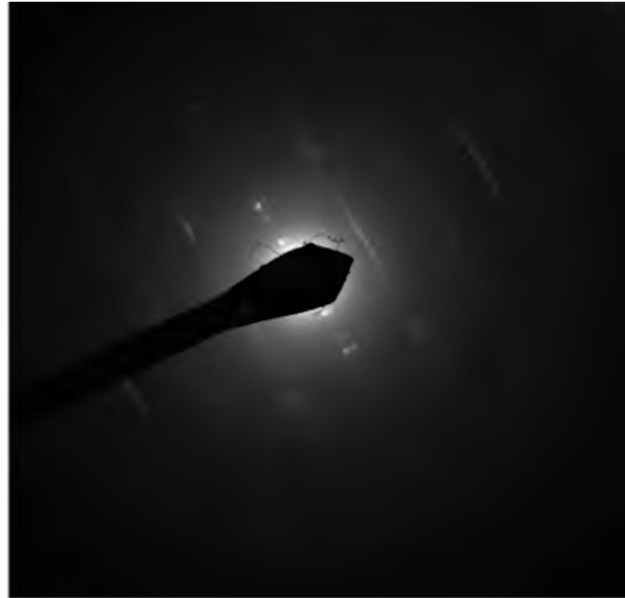
Overestimation of environmental asbestos levels and exposure risk based on incorrect science will mistakenly alarm the public and divert attention and financial resources from more socially important endeavors

Underestimation of environmental asbestos levels and exposure risk can result in failures to properly protect the public health

Can we find
zero?

- Zero is not an achievable detection limit
 - Need to establish a threshold that is protective and technically attainable
- To measure as close to zero as possible requires more advanced lab practices and analytical techniques
- Using TEM alone requires extreme extrapolation and caution interpreting results

To accurately
identify EMPs
will require
paradigm shift
among labs



Lab, two different particles, both identified as
chrysotile, only one is

Procedure for the Analysis of Talc for Asbestos

James R. Millette, Ph.D., D-IBFES
Millette Technical Consulting¹

Talc Pseudo-Hexagonal Pattern

Table 4 in the draft Yamate document (23) lists $[-1\ 4\ 2]$ as a reference zone axis for anthophyllite. With d_1 and d_2 both at 4.56 angstroms and an angle of 60° , this pattern is very close to the zone axis measured on a typical pseudo-hexagonal pattern obtained from a talc plate. Therefore, a fiber cannot be considered to be anthophyllite on the basis of a zone axis index match of the $[-1\ 4\ 2]$ alone. Fortunately, a talc fiber can be differentiated from an anthophyllite fiber because the talc pattern remains evident as the talc particle is tilted, but the pattern changes when an anthophyllite fiber is tilted.

INTERNATIONAL STANDARD

**ISO
10312**

First edition
1995-05-01

D.2.2 ED techniques

The ED technique can be either qualitative or quantitative. Qualitative ED consists of visual examination, without detailed measurement, of the general characteristics of the ED pattern obtained on the TEM viewing screen from a randomly oriented fibre. ED

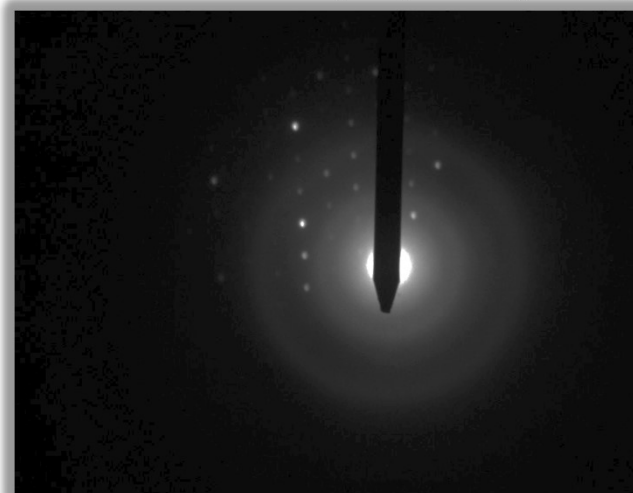
METHODOLOGY FOR THE MEASUREMENT OF AIRBORNE ASBESTOS BY ELECTRON MICROSCOPY

by

George Yamate
Satish C. Agarwal
Robert D. Gibbons

9. Identification of Unknown Fibers

0° tilt – Anthophyllite [142]



6° tilt – Anthophyllite [142]

