

INTER-DEPARTMENT MEMORANDUM

EASTERN INDONESIA TALC COMPANY
JOHNSON OPERATIONS

TO:	D. A. JACOBS	FROM:	R. E. LOMAS	DATE:	AUGUST 3, 1979
SUBJECT:	MSHA CRITERIA DUST & FIBER				

Per Howard's request I am sending you a copy of MSHA's recent report of our underground dust & fiber testing results.

Please be aware that only a small fraction of the particles found in the fiber samples are identified as fibrous talc, and only that portion of the particles is used in computing the overexposure to the TLV. On the second page of MSHA's report they conclude that 13.6% of the particles found in the fiber sampler can be considered to be fibrous talc. The remaining 87% is non-fibrous dust caught in the sampler filter. Thus all fiber sample totals are multiplied by 0.136 to determine the number of harmful fibers for comparison to the TLV.

Secondly, a citation is issued when the sum of the percentages of the TLV's of total dust, fiber, and silica exceeds 120% (20% grace is included to exclude the possibility of equipment error). Thus, an operation exposing workers to 50% of the TLV in each of the three categories would be cited for exposing workers to 150% of the allowable overall limit. (The government's key words for this are "additive values greater than unity".)

Allowable TLV's Per Each Component

Dust: 20×10^6 parts/ft.³

Harmful fiber: 2 fibers of fibrous talc/cm³

Silica: None found, not included in calculations

Please see attached chart.

VOLK

BASF 00139

BASF_SAMPSON000013167

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SUMMARY OF MSHA FINDINGS

	(A)	(B)	(C)	(D)	(E) Total Additive Value (col. B + D)
	Dust ($10^6/\text{ft}^3$)	Dust % (A ÷ 20) X 100%	Fibers/cm ³ sample (X 0.136)	Fiber % (C + 2) X 100%	
R. Audet	27.8	139%	0.15	8%	147% - A
J. Boivin	11.8	59%	0.09	5%	64%
A. Boyce	21.5	108%	0.12	6%	114%
D. Dezotelle	14.4	72%	0.12	6%	78%
W. Dezaine	6.73	34%	0.18	9%	43%
S. Hutchinson	5.42	27%	0.03	2%	29%
D. Magoon	11.8	59%	0.11	6%	65%
L. Messier	10.3	52%	0.14	7%	59%
H. Putvain	5.73	29%	0.07	4%	33%
N. Rabtoy	33.6	168%	0.14	7%	175% - B
W. Richardson	17.5	88%	0.15	8%	96%
S. Wallace	7.39	37%	0.18	9%	46%

A - Citation #20581 issued 4/25/79

B - Citation #212408 issued 4/24/79

COPY
TO

JHS, File

SIGNED

R. EDWARD LOMAS

VOLK

BASF 00140

BASF_SAMPSON000013168

**U.S. DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION**

P.O. Box 1894
329 U.S. Post Office and Courthouse
Albany, New York 12201



RECEIVED
JOHNSON OFFICE
JUL 25 1979 July 19, 1979
ORIGINAL TO: _____

Mr. J. Howard Shafer, General Manager
Eastern Magnesia Talc Company, Inc.
Johnson, Vermont 06502

Dear Mr. Shafer:

The enclosed inspection report covers a Federal inspection of the Johnson Mine and Mill, I.D. No. 43-00078, Johnson, Vermont, conducted on April 24 through 27, 1979. The inspection was made pursuant to Public Law 91-173 (83 STAT. 742) as amended by Public Law 95-164 (91 STAT. 1290).

The type and number of actions taken during this inspection were:

ORIGINAL ACTIONS THIS INSPECTION	TYPE AND NUMBER OF:		
	Citations	Orders	Others
Issuances	2	0	0
Terminations			
Modifications			
Extensions			
Vacated			
ACTIONS ON PREVIOUS VIOLATIONS			
Modifications	0	0	0
Extensions			
Terminations			
Vacated			

Figures for the following are not yet available:

Incidence Rate:	Fatal	Non-Fatal
Industry		
This Operation		

Sincerely yours,

Edward J. Podgorski
Subdistrict Manager
Metal and Nonmetal Mine Safety and
Health, Northeastern District

cc: Dr. Mars Y. Longley, Director, Vermont Division of Occupational Health
Dennis Downer, President, United Cement, Lime and Gypsum Workers, Local 395

The fiber filters were counted in the Albany, NY, laboratory for fiber per cc count and the following filters were submitted to MSHA, Denver Technical Support Center for fiber identification by means of electron microscope:

<u>FILTER NO.</u>	<u>PERCENT AND TYPE OF FIBER</u>
E-15	12.5% Fibrous talc
E-18	N11 Not determined
E-19	30.0% Fibrous talc
E-20	18.2% Fibrous talc
E-22	11.1% Fibrous talc
E-25	10.0% Fibrous talc
	<u>13.6% Average</u>

The percent varied as expected due to the non-homogeneity of the atmospheres and local variances in the rock being mined. Local percentum should change from day-to-day, but the average should be reasonably consistent so the filters were all averaged and the resulting 13.6% fibrous talc was used for each location.

The percent of toxic silica was determined to be below 1% in each area sampled so toxic silica was not included in the calculations.

No 205810

CITATION (SEE REVERSE) ORDER OF WITHDRAWAL (SEE REVERSE)
DATE 01/25/79 TIME 1500
SERVED TO J.H. Stator, Gen. Manager OPERATOR Eastern Magnesite Talc Co. Inc.
MINE Johnson Mine and Mill MINE I.D. 43-00076 (CONTRACTOR)
TYPE OF ACTION 104-a VIOLATION OF SECTION _____ OF THE ACT OR
(SEE REVERSE) OF TITLE 30 CODE OF FEDERAL REGULATIONS.
PART AND SECTION 57.15-20005
TYPE OF INSPECTION 204 SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The driver of the mine was exposed to an additive mine
aerosol when working in the dust and exhaust tail. The additive value was
calculated by the following method: (talcdust) 27.501ppcf + 20msppcf. Filter
0.15 microns + 2 fibers/cc = 27.3 = 1.47 where the TLV is 200.
The results calculated on 5/12/79 indicated the violation existed on 4/15/79.

AREA OR EQUIPMENT Respiratory protection was not being worn on 5/12/79 but this citation would be
based on the violation of the standard.

INITIAL ACTION NOTICE CITATION ORDER NO. _____ DATED 01/25/79
TERMINATION DUE DATE 07/15/79 TIME _____ SIGNATURE _____ AR
ACTION TO TERMINATE _____
DATE 01/25/79 TIME _____ SIGNATURE _____ AR SEE SUBSEQUENT ACTION SHEET

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DATE 01/25/79 TIME _____ SIGNATURE _____ AR SEE SUBSEQUENT ACTION SHEET

CITATION (SEE REVERSE) ORDER OF WITHDRAWAL (SEE REVERSE)
 SERVED TO N. H. SHAPER, Gen. Manager OPERATOR EASTERN WINDING TIRE CO. INC.
 MINE WILKINSON DRIVE AND MILL MINE I.D. 43-00078- (CONTRACTOR)
 TYPE OF ACTION 104-a VIOLATION OF SECTION _____ OF THE ACT OR
 (SEE REVERSE) OF TITLE 30 CODE OF FEDERAL REGULATIONS.
 PART AND SECTION 57-5-5
 TYPE OF INSPECTION POH SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE STANDARD 57.5-5 WAS NOT COMPLIED WITH IN THAT
THE HAZARD ON NO. 20 WAS EXPOSED TO 3.6 M.P.P.C. ON
4/24/79 WHEREAS THE TLV WAS 200 M.P.P.C. THE HAZARD IMPROVED
RESULTS WERE CALCULATED ON 4/27/79, SHOWING THE HAZARD
RESOLVED ON 4/24/79

AREA OR EQUIPMENT _____
 INITIAL ACTION NOTICE CITATION ORDER NO. _____ DATED MO 1 DA 1 YR 7
 TERMINATION DUE DATE MO 05 DA 31 YR 79 TIME 0800 SIGNATURE John A. Conner AR _____
 ACTION TO TERMINATE _____
 DATE MO 1 DA 1 YR _____ TIME (24 HR CLOCK) _____ SIGNATURE _____ AR _____ SEE SUBSEQUENT ACTION SHEET

CITATION (SEE REVERSE) ORDER OF WITHDRAWAL (SEE REVERSE)
 SERVED TO N. H. SHAPER, Gen. Manager OPERATOR EASTERN WINDING TIRE CO. INC.
 MINE WILKINSON DRIVE AND MILL MINE I.D. 43-00078- (CONTRACTOR)
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 ACTION TO TERMINATE _____
 DATE MO 1 DA 1 YR _____ TIME (24 HR CLOCK) _____ SIGNATURE _____ AR _____ SEE SUBSEQUENT ACTION SHEET

ASBESTOS FIBER EVALUATION METHOD

Measurement of the airborne asbestos fiber concentration consists of drawing a sample of dust laden air through a filter, counting the fibers on the filter using a microscope, and calculating the airborne fiber concentration. The results are fibers per milliliter of air.

Samples are collected to represent personal breathing zone measurements of fibrous dusts. The filter media is 37 mm Millipore type AA mounted in an open face filter holder. The sampling air flow rate is 1.7 lpm, using a battery powered personal pump. The sampling time is a function of concentration so that the filter contains a quantity that is satisfactory for counting with a microscope. Full working shift time weighted average exposures are calculated by relating appropriate sample results to estimated exposure times on the day of the evaluation.

Counting is performed by the phase contrast illumination method (the membrane filter method) described by NIOSH in their criteria document "Occupational Exposure to Asbestos", U. S. Department of HEW, HSM 72-10267, G.P.O., Washington, D.C. 1972. This method requires phase contrast illumination, 400-450 magnification and a 4 mm objective. Fibers greater than 5 microns in length and with an aspect ratio greater than 3 to 1 are counted.

MESA Mandatory Standard 55, 56, 57.5-1 (b) states, in part, the following:

55, 56, 57.5-1 Mandatory. (b) "The 8-hour time weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 2 fibers per milliliter greater than 5 microns in length. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers longer than 5 micrometers, per milliliter of air, as determined by the membrane filter method over a minimum sampling time of 15 minutes....."

MIDGET IMPINGER MEASUREMENTS

Sampling Method

The dust concentration results included in this report were obtained by the midget impinger dust sampling method. Results are millions of particles less than 5 microns (Feret's) diameter per cubic foot of air (mppcf).

The dust sampling equipment used consisted of an air pump and midget impinger assembly. The pump and midget impinger were connected by tubing to maintain a negative pressure at the impinger nozzle inlet. The midget impinger assembly was positioned in the breathing zone of each person sampled.

Air was drawn through the 1 millimeter nozzle located 5 millimeters from the bottom of the flask. The dust particles in the air sampled were impinged on the bottom of the flask and retained in the collecting liquid, usually isopropyl alcohol. The air flow rate through the midget impinger was 0.1 cubic feet per minute at 12 inches of water vacuum.

Collected particulate matter was counted optically using a microprojector at 1,000 x magnification with Kohler illumination. The microprojector is a device that projects particle images on a ruled translucent screen that contains a comparison grid to permit particle counting.

Free Silica (SiO₂)

Toxic silica (alpha quartz) analyses were made from gross airborne samples collected by an air sampler on a membrane filter or from random settled dust samples. The particulate analysis and midget impinger time weighted average results are shown in the appended table(s).

Threshold Limit Values (TLV)

The allowable time weighted average concentrations for exposure to airborne contaminants is found in the 1973 edition of "Threshold Limit Values of Airborne Contaminants and Physical Agents" as published by the American Conference of Governmental Industrial Hygienists.

Time Weighted Average (TWA) concentrations were determined from the midget impinger results for samples collected throughout the work shift in the worker's breathing zone. Time weighted averages were calculated using the following formula:

$$\text{TWA Conc. (mppcf)} = \frac{C_1 T_1}{T} + \frac{C_2 T_2}{T} + \dots + \frac{C_n T_n}{T}$$

where:

C_1, C_2, C_n = concentration of dust measured by impinger sample
 T_1, T_2, T_n = time period for which dust concentration was C_1, C_2, \dots, C_n .
 T = total time over which dust concentration was determined
(usually an 8-hour work shift)

TWA concentrations exceeding the TLV indicate overexposure.

PERSONAL CONFIDENTIAL
Federal Bureau of Investigation
Chemicals Division

From the Office of DANIEL A. JACOBS


August 6, 1979

TO: C. C. Clarke

Chuck:

Per our conversation this p.m., the attached report looks like more potential trouble for Ental.

Please review and advise how we should pursue.


D. A. Jacobs

DAJ/mw
Attach.

cc: CYH ✓