UNION CARBIDE **INTERNAL CORRESPONDENCE**

UNION CARBIDE CHEMICALS COMPANY • **INSTITUTE PLANT** P. O. BOX 2831, CHARLESTON, WEST VIRGINIA

To (Name) Mr. S. C. Giambruno
Company
Location Industrial Relations

Date 4 December 1962
Originating Dept. Medical Department - Plant 512
Answering letter date

Copy to Mr. L. N. Dickinson, Mr. G. H. Daniels, Mr. N. S. Eastman, Mr. R. A. Huber, Mr. B. F. King, Mr. F. B. Snyder, Dr. E. M. Best, Jr., Mr. E. G. Heinz, Mr. P. E. Henry, Mr. R. A. Neal, Mr. D. R. Matheny, Mr. N. H. Ketcham, Dr. C. U. Dernehl

Subject: Insulation Block Dust Survey
Construction Insulation Shop
Plant 511

Two reports by Mr. R. E. Peele have been issued on this subject (21 March 1962 and 20 July 1962) and sent out under my signature. On 16 May 1962, a copy of a letter from Doctor Nale to the UCC Central Purchasing Department in New York pertaining to this subject was sent to some of the people on the above distribution list. Undoubtedly, Johns Manville is extremely interested in having our Construction Department use their "Thermobestos" blocks. However, I believe that possibly unnecessary pressure is being applied to us from several sources.

The enclosed report by Mr. Peele includes information on an invitation for Mr. Peele to visit Manville, New Jersey, at Johns Manville's expense to evaluate their industrial hygiene studies. Mr. Peele points out in this report also that he has been contacted recently by the Design and Construction Department at the Technical Center who have implied that Mr. Peele should comply with Johns Manville's proposal.

It is my opinion that we should continue to do surveys, with limitations, on samples of "thermobestos" blocks that are of a new formula and are submitted to our Construction Insulation Shop at the Institute Plant for evaluation. However, I am not in favor of Mr. Peele accepting Johns Manville's invitation and would appreciate approval or disapproval for this trip from my supervision so that Mr. Peele can be informed accordingly.

Deposition Exhibit No. 3
Case No. _____ Received _____
Date 5-22-87 No. of Pages _____

Very truly yours,

R. J. Sexton, M.D.
Plant Medical Director

RJS:gh
Enclosure

A16305

UC 28.2

UNION CARBIDE

INTERNAL CORRESPONDENCE

U...ON CARBIDE CHEMICALS COMPANY • **INSTITUTE PLANT** P. O. BOX 2831, CHARLESTON, WEST VIRGINIA

To (Name) Mr. G. J. Ratcliffe
Company
Location Industrial Relations

Date 20 July 1962
Originating Dept. Medical Department - Plant 512
Answering letter date

Copy to
Mr. L. N. Dickinson
Mr. G. H. Daniels
Mr. N. S. Eastman
Mr. R. A. Huber
Mr. B. F. King
Mr. F. B. Snyder
Dr. C. U. Dernehl
Dr. E. M. Best
Mr. E. G. Heinz
Mr. P. E. Henry
Mr. R. A. Neal
Mr. D. R. Matheny
Mr. N. H. Ketcham

Subject Insulation Block Dust Survey
Construction Insulation Shop
Plant 511

Enclosed is an industrial hygiene report by Mr. R. E. Peele on the potential hazardousness of "new and improved" "Thermobestos" insulation blocks submitted by the manufacturer for evaluation by band saw processing in the Construction Department's Insulation Shop. The report points out that the three "new and improved" sample blocks, subjected to test conditions identical with those in use and reported upon in March of this year, are an improvement somewhat, but these blocks too, release quantities of asbestos dust particles into the working environment considerably above the acceptable safe limits (i.e., the T.L.V.). Therefore, definitely, the processing of "new and improved" blocks also constitute a hazard to health.

Mr. Peele recommends that "Thermobestos" blocks not be processed in the Construction Department Insulation Shop until they meet acceptable standards and I concur fully.

Very truly yours,

R. J. Sexton

R. J. Sexton, M.D.
Plant Medical Director

RJS:gl

Enclosure

Deposition Exhibit No. 1
Case No. _____
Date 5-22-87 Received _____

A 16293

INDUSTRIAL HYGIENE SURVEY

CONSTRUCTION INSULATION SHOP - BUILDING 511-2018

REPORT 62-IH-2-G-1

SUMMARY: In March of this year, following an industrial hygiene survey, it was recommended that band saw fabrication of "Thermobestos" insulation blocks in the Construction Department Insulation Shop at Plant 512 should cease completely and permanently unless the blocks, or the dust control techniques used in fabricating the blocks, are improved so that atmospheric dust concentrations are found to be within acceptable safe limits. In the following month of April, three new "Thermobestos" insulation blocks were submitted to Plant 511 for evaluation under environmental conditions identical with those experienced heretofore.

Critical analysis of the data obtained on this more recent survey revealed the existence of some degree of improvement in the dust contamination associated with the fabrication of these particular "Thermobestos" insulation blocks. However, the magnitude of the improvement did not reduce the atmospheric dust concentrations to within the recommended safe acceptable limits of 20 mppcf (million particles per cubic foot) of air. Therefore, the recommendations remain exactly as those stated in the report of the survey of March, 1962*.

INTRODUCTION: It was established unquestionably, in an industrial hygiene report submitted in March of this year, i.e., Report 62-IH-1-G-1, that an inhalation hazard to health is produced within the Construction Insulation Shop whenever "Thermobestos" insulation blocks are fabricated. Furthermore, it was recommended also that the fabrication of "Thermobestos" insulation blocks should cease until at least one of the following two conditions are met: First, that the atmospheric dust problem is reduced to below 20 mppcf of air through the use of ventilation, etc., or, second, that, if a new insulation block should be manufactured by the producer of "Thermobestos" blocks that, it would be subjected to testing under identical conditions as before thereby establishing the fact that it will not release, upon fabrication with a band saw, dust concentrations in excess of 20 mppcf of air.

The Industrial Hygiene Department's recommendations met exact compliance by those responsible persons in the Construction Insulation Shop, in that no "Thermobestos" insulation blocks have been fabricated with band saws for use in this plant since the date of the issuance of these recommendations. However, some change in procedure was indicated when, on 25 April 1962, this department was contacted by Mr. D. R. Matheny, General Foreman of the Insulation Shop. At that time, Mr. Matheny requested an evaluation of a new "Thermobestos" insulation block which had been developed by the manufacturer, in an effort to comply with the specifications as stated in the second part of the above listed recommendations.

A 16306

*Insulation Block Dust Survey, Construction Insulation Shop, Plant 511, Report 62-IH-1-G-1.

DISCUSSION: Mr. Matheny's request for services was immediately acted upon at which time two basic decisions were made: First, Friday, the 27th of April, would be the most opportune time for obtaining the information needed in the performance of this evaluation and, second, two atmospheric dust samples of each condition should be obtained with each one being taken in identical locations so as to provide greater reliability. These sampling plans had to be altered somewhat, however, on the site, when it was discovered that the manufacturer had provided only three insulation blocks each of which differed in the precise manner in which it had been produced*.

This shortage of material, with identical characteristics, complicated the sampling and evaluation procedures somewhat, since it was impossible, therefore, to obtain more than one sample of atmospheric dust being produced by any one material (in actuality, a total of only three atmospheric dust samples were collected during the test period). However, this complication was not so severe as to render the sample data of no use, as is revealed in the condensed explanation of the sampling procedure selected on this date which is as follows:

First: The data contained on page 8 of Report 62-IH-1-6-1 revealed clearly that the greatest concentrations of atmospheric dust were produced at the band saws, and that location #3, i.e., #2 band saw while sawing, definitely provided the greatest hazard to health. Consequently each of the three samples, under consideration in this report, i.e., 62-IH-2-G-1, were taken at this same location.

Second: All of the results revealed in the preceding report, i.e., 62-IH-1-G-1, were obtained during the late fall and winter, therefore, the doors to the building were closed for purposes of heat conservation. These environmental conditions were duplicated during the performance of this second survey.

Third: The operator of the #2 band saw employed sawing techniques as nearly identical with those in evidence during the preceding periods of evaluation as were possible to duplicate, i.e., position of the block with respect to the saw blade, speed of feeding the block into the saw blade, position of the operator's head with respect to the block, etc.

Fourth: Each of the dust samples obtained during the time of performing the initial survey were held in the operator's breathing zone. This feature was also duplicated for this second survey, i.e., 62-IH-2-G-1.

EVALUATION: Each of the three samples collected were evaluated in the laboratory in accordance with recommended and prescribed light field microscopic counting techniques as referred to and identified in Report 62-IH-1-G-1. It should be noted that no effort was expended to obtain anything more than a knowledge of the concentration of dust in the air since the composition and particle size of this material should not be expected to deviate to any degree from the prior recorded values. This supposition was based on two facts, (1) the

*In accordance with information received from the manufacturer each block was composed of identically the same materials and was formed in the same general manner, i.e., by the "Pan Method". However, the similarity in production differed from here on with the manufacturer being the only one in possession of the exact description and the specific alterations incorporated in each method.

A 1630

chemical make up of these materials was reported as being identical with the "Thermobestos" materials reported on in the prior survey and, (2) the sawing techniques utilized on both occasions were identical in nature.

PROCEDURES: Both sampling and analytical methods were identical in detail with those described in the earlier report, with sampling being accomplished through the use of the Mine Safety Appliance Company's Midget Impinger Pump and Apparatus and the analysis taking place in accordance with light field microscopic counting techniques.

RESULTS: Analysis of the physical data contained on page 5 reveals that the atmospheric dust concentration in mppcf (million particles per cubic foot) of air for each of the three new materials was

(a) 36.8 mppcf of air for J.M. #21,

(b) 48.1 mppcf of air for J.M.#22, and

(c) 44.1 mppcf of air for J.M. #23.

CONCLUSIONS:

(1) None of these three samples revealed a concentration as high as that recorded in the previous report for "Thermobestos" exposures in this position, i.e., 101.4 mppcf of air for Location #3. However, by the same token, none of the present three samples revealed a concentration as low as that recorded for "Kaylo" exposures in this position, i.e., 17.1 mppcf of air for Location #3.

(2) Each of the three values exceeded the established T.L.V. (Threshold Limit Value) of 20 mppcf of air by a substantial amount.

(3) None of the three insulation materials, i.e., J.M.#21, J.M.#22, and J.M.#23, as submitted by the manufacturer of "Thermobestos", should be fabricated with band saws in the Insulation Shop by our employees unless the manufacturer complies exactly with the following conditions:

The physical and/or chemical characteristics and composition of these materials are improved to the degree that some further future evaluation might reveal them to be incapable of releasing concentrations of dust into the atmosphere that are in excess of the T.L.V.

RECOMMENDATIONS:

Do not fabricate the 18" x 36" x 4" "Thermobestos" insulation blocks (J.M.#21, J.M.#22, J.M.#23) with existing equipment unless -

(1) The producer of this material can further improve his product to the point that it will not release, upon fabrication with our ventilated band saws, dust concentrations in excess of 20 mppcf of air, or,

A 1632

(2) The atmospheric dust problem can be reduced to below 20 mppcf of air through the use of improved ventilation techniques, or other safeguarding measures.

Submitted by: Robert E. Peele

Robert E. Peele
Industrial Hygienist

REP:gl

15 July 1962

A16303

INDUSTRIAL HYGIENE SURVEY

EVALUATION OF ATMOSPHERIC DUST CONCENTRATIONS

AT THE CONSTRUCTION INSULATION SHOP

Atmospheric Dust Concentration Data

on Three "Thermobestos" Materials

As Collected with the Midget Impinger Pump and Apparatus

TYPE OF DUST MATERIAL	SAMPLE							
	LOCATION	Rate in cfm	Time in Min.	Vol. in C.F.	Blank # Particles	Dilution Factor	Count # Particles	Conc. in mppcf of Air
TM #21	#2 Band Saw, Breathing Level of Operator	0.1	10	1.0	8.3	100	94.8	36.8
JM #22	Same as Above	0.1	10	1.0	8.3	250	57.8	48.1
JM #23	Same as Above	0.1	10	1.0	8.3	200	65.0	44.1

A 16304

UNION CARBIDE

INTERNAL CORRESPONDENCE

UNION CARBIDE CHEMICALS COMPANY • INSTITUTE PLANT P. O. BOX 2831, CHARLESTON, WEST VIRGINIA

To (Name) R. J. Sexton, M.D.
Company
Location Medical Department

Date 3 December 1962
Originating Dept. Industrial Hygiene - Plant 512
Answering letter date
Subject Johns Manville "Thermobestos"

Copy to

On 21 March 1962, an Industrial Hygiene Report, i.e., 62-IH-1-6-1, identified the existence of a hazard to health in the Construction Insulation Shop during such times as when insulation blocks manufactured by the Johns Manville Company are being fabricated with exhausted band saws. It was recommended at that time that 18" x 36" x 4" "Thermobestos" insulation blocks* should not be fabricated with the existing equipment unless --

(a) The atmospheric dust problem could be reduced to below 20 mppcf of air through the use of ventilation, etc., or

(b) The producer of this product begins manufacturing an insulation block which will not release upon fabrication with a band saw, dust concentrations in excess of 20 mppcf of air.

In accordance with these recommendations, the Construction Insulation Shop discontinued almost immediately the purchase of "Thermobestos" insulation blocks.

On 20 July 1962, a second Industrial Hygiene Report, i.e., 62-IH-2-G-1, was submitted subsequent to an evaluation of three new insulation materials supplied by the Johns Manville Company. This report concluded that these materials were improved over the original. However, the dust concentrations produced upon fabrication of these insulation blocks were substantially in excess of the recommended safe concentrations of 20 mppcf of air. Therefore, the recommendations contained in this report remained exactly as those stated in the initial report of March, 1962.

On 20 November 1962 the author was contacted by Mr. D. R. Matheny, General Foreman of the Insulation Shop, who stated that three Johns Manville representatives, i.e., Messers. F. E. Saxer, N. Gordon, and H. E. Kaufman, were present and had requested a meeting with the Plant Industrial Hygienist. This meeting was held in the lobby of Building 2, at which time Mr. Saxer produced the accompanying copy of portions of a report submitted by the Johns Manville Industrial Hygiene Laboratory located at Manville, N.J. Mr. Saxer stated that, in accordance with this report, they were not able to produce results which agreed with those contained in the reports submitted by this department. Therefore, they were concerned and interested in learning if their methods of reproducing

*The Johns Manville trade name for their insulation blocks

A 163J6

our environmental conditions, sampling and evaluating the dust concentrations contained therein were subject to question. At this point he stated also that this conclusion was promoted on the basis of their analysis of the atmospheric dust conditions produced by their competitors product, (i.e., Kaylo or Item # 5AT in the report) which in no way agreed with the data submitted in the Industrial Hygiene Report - IH-62-I-G-I.

It was explained at this point, that this department's interest in this problem is always confined solely to the environmental conditions as they effect the health of our workers, and that no part of the investigation should be construed as an attempt to arbitrarily promote the use of one company's product over that of another.

Upon completion of this statement, Mr. Saxer proposed that Mr. D. R. Matheny and the Plant's Industrial Hygienist make a trip to Manville, New Jersey, at Johns Manville's expense and at a time selected by Union Carbide. This visit would be for the specific purpose of observing, scrutinizing and comparing their method of atmospheric dust evaluation with that as utilitized by the Institute Plant's Industrial Hugiene Department. It was Mr. Saxer's opinion that such a visit would permit a more positive approach to the problem and remove the possibility of misunderstandings, etc., that results from written correspondence. At this point, Mr. Saxer was assured that there would be no personal objection on my part to the performance of such a service. However, a proposal of this nature would have to be submitted to the Plant Manager, Mr. L. N. Dickinson, through appropriate channels before a final decision could be made.

In conclusion, it should be stated that a phone call was received from Mr. F. G. Comerford of Design and Construction on the morning of 21 November 1962, who requested that he be brought up to date on this specific problem. This request was immediately satisified both by verbal explanation and by the promise that copies of both reports, i.e., 62-IH-I-G-I and 62-IH-2-G-1, would be mailed to him immediately. Mr. Comerford further stated that we should not back down on our requirements, but that it probably might be wise to consider their proposal in light of the many ramifications of the problem as it affects the whole company structure, i.e., purchasing, sales, manufacturing, etc.

Very truly yours,

Robert E. Peele

Robert E. Peele
Industrial Hygienist

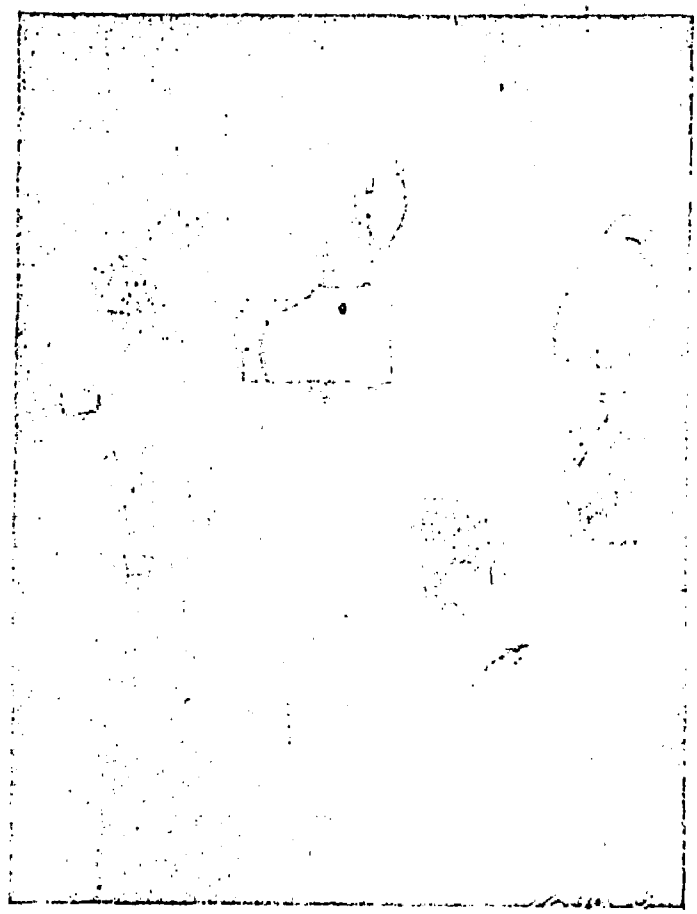
REP:gh

Enclosure

A16307

DISCUSSION

Atmospheric dust concentration tests were made on October 30, 1962, during the fabrication of insulation blocks on the DO-ALL Model L-H-V band saw in the Research Center Materials Testing Laboratory sample preparation room. The National Conference of Governmental Industrial Hygienists Test Method was followed using the Greenburgh-Smith impinger. Tests were conducted by Mr. T. F. Bednarchuk of the J-M Industrial Hygiene Laboratory at Manville. To obtain comparative data, the room ventilation was adjusted to give more than the usual amount of atmospheric dust. The test set up is shown in the photograph below.



A 16303

In addition to the room ventilating system, air was removed from directly above the block at a rate of 37 cu ft per min and from the metal housing surrounding the saw at a rate of 15 cu ft per min. The saw blade was standard and had six teeth per in. and a lineal speed of 2400 ft per min. The blocks were 18 x 11 x 4 or 6 in. and were cut so that the blade entered the 11-in. edge.

Five types of insulation were tested including standard Thermobestos, and three experimental pan cast blocks. Formulas are given in Appendix I. Prior to testing, blocks of each were conditioned by: a) drying a minimum of seven days at 250F; b) drying at 250F and conditioning for 16 days at 70 per cent RH, 70F; c) drying at 250F and conditioning for 16 days at 95-100 per cent RH, 95F.

The test data are given in Appendix II. The dust concentration tests were analyzed and indicated that the superiority reported by Union Carbide of over standard Thermobestos and the experimental pan cast blocks submitted to them is subject to question. The results also indicated that the slate dust composition, 2-AT, caused less atmospheric dust than the other types of blocks.

The effect that conditioning of the blocks had on the dust concentration in air was not apparent. This is attributed to the limited amount of material tested and the possibility that an equilibrium condition of dust concentration in the sampling area may not have been reached in some cases. In order to definitely establish the effect moisture content of the blocks has on atmospheric dust a more extensive series of tests would be required. Such tests would also serve to more definitely establish the relative dustiness of the formulas investigated.

A16309

APPENDIX II

TEST DATA

ATMOSPHERIC DUST CONCENTRATION DATA

	Experimental Pan Cast 6-in. Blocks			Std. 4-in. Thermometer	Std. 4-in.
	1-AT	2-AT	3-AT*	4-AT	5-AT
Concentration in mppcf of Air					
Dried at 250F	110.8	19.9	16.4	34.2	52.0
Conditioned at 70% RH, 70F	39.3	16.8	47.1	15.8	36.4
Conditioned at 95-100% RH, 95F	99.6	20.6	31.4	104.0	97.6
Avg. of three conditions	83.2	19.1	31.6	51.3	62.0
Moisture Absorbed During Conditioning - %					
Dry to 70% RH, 70F	2.7	2.0	2.5	6.8	3.9
Dry to 95-100% RH, 95F	13.6	12.3	17.2	15.6	12.8

*This formulation was used for samples submitted to Union Carbide for evaluation. Refer to formula No. 58, samples 21, 22, 23, Research Report No. [redacted], p 1.

B.L. Peele

A1631C

DEPOSITION EXHIBIT
Dep. Reele
Ex. No. 12

NO. 12 5/28/82

Mr. D. C. Willard

April 28, 1967

Building 8-96-2

E. Q. Hull, M.D.

Particulate Matter in Air
Asbestos Dust
Project No. IH-PAR-76-67

Dear Don:

As per our telephone conversation today, I am attaching a resume' of our determinations of dust breathed by the employees while cutting and installing "kale" insulation.

We feel that further air sampling is needed to give you more meaningful conclusions as to the best protection for the employees handling this material.

At your convenience, we will be glad to discuss these findings with you. In the meantime, if you would keep us informed of jobs pertaining to cutting, installing and removing "kayle" insulation, it would be helpful in scheduling the air sampling work.

Thanks,

Bert Murray

Deposition Exhibit No. 10
Case No. _____ Received _____
Date 5-22-87 No. of Pages _____

A163.3

PARTICULATE MATTER IN AIR

Dust Breathed by the Employees While Cutting and Installing "Kaylo" Insulation

Plant-wide Survey - Plant 514

Authors: H. H. Warwick
D. L. Murray

Date: September 21, 1965
Project No.: IH-IC-65

Doctor Hull, Plant Medical Director, requested a plant-wide industrial hygiene study to determine the potential exposure of insulators to asbestos fiber dust concentrations. Table I gives the results of seven separate tests, including 24 breathing zone level air samples and shows an average dust concentration of 5.2 million particles per cubic foot of air. A "threshold limit value" of 20 mppcf of air has been suggested.[1]

When three employees, or less, hand-cut and apply "Kaylo" insulation, the concentration of dust is considered safe from the health standpoint; however, with 6 men the dust count exceeds the TLV. It is at this phase of the operation that exhaust ventilation should be used. Excessive dust concentrations can be expected when the insulation is removed from piping and tanks. Again, exhaust ventilation should be used to move the dust away from the employees, if possible; otherwise, respirators are advised.

"Kaylo" insulation contains 12 to 13% asbestos and 5.6 to 7.4% crystalline-free silica.[2] This material is received in block and pipe form and the insulator measures and marks the material into appropriate sizes and cuts it with a hand saw. The insulation material is wired into position around the tank or pipe. The tasks of cutting and applying the "Kaylo" insulation are shown in Figures 1 and 2.

The air samples were collected with a midget impinger and a Uni-jet sampler, drawing 0.1 cubic foot of air per minute through impinger flasks containing 10 milliliters of distilled water. Dust counts, made by the Light Field Microscopic Counting Technique, appear in Table I.

This study has revealed that further research work is needed to:

1. Attain an established figure for the "threshold limit value".
2. Utilize exhaust ventilation to remove the dust from the work area.
3. Determine the particle size of the asbestos fiber where the dust count exceeds 5 mppcf.
4. Obtain Range Finding Tests on animals exposed to different percents of asbestos fiber.
5. Continue our plant-wide study in support of these conclusions.

1. Cook, Warren A., and Poole, Robert E., Letter dated February 12, 1962 - The University of Michigan School of Public Health.

2. Poole, R. E., Industrial Hygiene Survey - Construction Insulation Shop, Building 511-2010. Report 62-IH-1-G-1 (March 21, 1962).

A163.4

UCC 010596

TABLE I

PARTICULATE MATTER IN AIR

Dust Breathed by Employees While Cutting and Installing "Kaylo" Insulation

Date	Sample Number	Sampling Conditions at Breathing Level	Number of Employees	Dust Count MPCF (1)
11-16-64	1	5-min. cutting, 5-min. application inside building	2	2.1
	2	Same	2	2.6
	3	Same	2	1.7
	4	7-min. cutting, 3-min. application	2	3.0
1-19-65	5	Cutting and application during entire sampling period - inside building	6	22.5
	6	Same	6	17.0
	7	Same	6	22.5
2-18-65	8	Same	2	3.6
	9	Same	2	1.6
	10	Application of insulation - no hand saw cutting	2	0.3
	11	Same	1	0.1
3-1-65	12	Cutting and application during sampling period - outside building	2	7.6
	13	Same	2	2.4
	14	Same	2	4.0
3-22-65	15	Application of insulating - no cutting - inside building	3	1.9
	16	Same	3	13.0
	17	7-min. cutting; 3-min. application	1	7.3
5-26-65	18	Clean up of insulation from floor sweeping and shoveling - inside bldg.	2	0.0
	19	Same	2	0.1
	20	Same	2	2.5
6-14-65	21	Cutting and application during sampling period - inside building	2	1.0
	22	Same	2	5.0
	23	Same	2	2.5
	24	Same	2	1.1

(1) Million particles per cubic foot of air.

10-14-65

A16315

PROJECT No. [illegible]

INDUSTRIAL HYGIENE EVALUATION AND SURVEY

Date [illegible] Time [illegible] Project [illegible]

Department [illegible] Location [illegible] Bldg. No. [illegible]

Requested by [illegible] Reason [illegible]

General Conditions: [illegible]

Sampling Method and Equipment [illegible]

Shift: Day ___ Eve. ___ Mid ___ No. Employees ___ Sampled by [illegible]

Sample Number	Zone	Sampling Time-Min.	Flow Rate	CONCENTRATION		
				[illegible]	[illegible]	[illegible]
1		11	2 l	1.1	<0.1	<0.25
2		11	2 l	1.0	0.6	1.5
3		11	2 l	1.1	0.4	2.0
4		11	2 l	1.1	0.2	0.5

Special Conditions

[illegible]

Calculation:

5 11 2 l 1.1 <0.1 <0.25 [illegible]

Remarks: [illegible]

Sketch - See Reverse Side. Reference No. 7310 45 Analyzed by [illegible] Date [illegible]

16316

Dust Breathed by the Employees while Cutting and Installing "Kaylo" Insulation

Plant-wide Survey - Plant 514

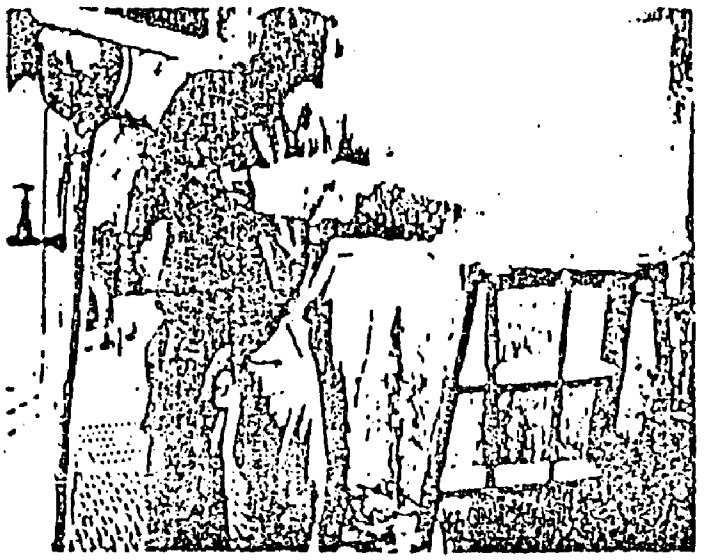


Figure 1. Sawing block sections. Breathing zone level air sample being collected in the background.

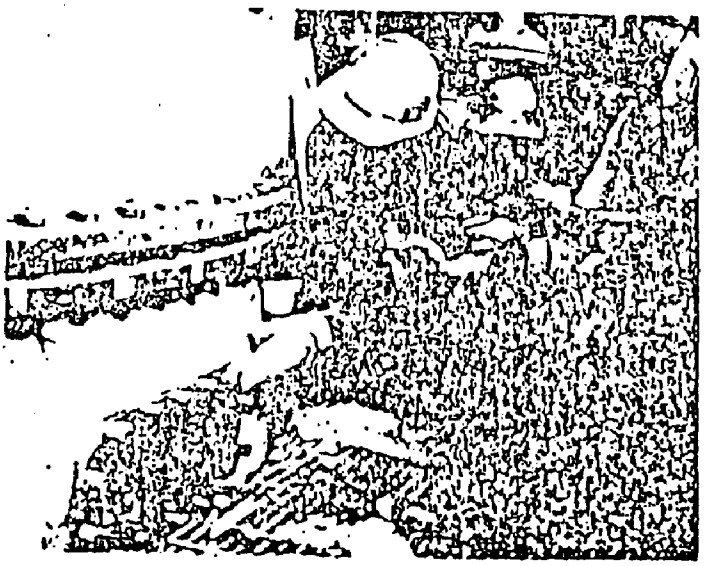


Figure 2. Applying insulation block. Breathing zone level air sample being collected in the foreground.

DLH

A163.7

UCC 010599

PLANT 54 PROJECT NO. 711-66

INDUSTRIAL HYGIENE EVALUATION AND SURVEY

Date 4-13-66 Time 10 am Project Dust in Air (Asbestos Insulation)

Department Maintenance Location 2nd floor (north end) Bldg. No. 156

Requested by Survey Reason Determination of Concentration

General Conditions: 3' blocks (2" x 6") being cut (scored) before application

Sampling Method and Equipment Midget impingers containing 10 mls dist. water Uni-Jet Sampler

Shift: Day ___ Eve. ___ Mid ___ No. Employees 5 Sampled by HHW-CGC

Sample Number	Zone	Sampling Time-Min.	L/min Flow Rate	Net CONCENTRATION Cu ft	Count	MPPCF
1		10	2.8	1.0	<0.1	<0.25
2		10	2.8	1.0	0.8	2.0
3		10	2.8	1.0	2.2	5.5

Special Conditions

Breathing level of employee as he cut insulation with hand saw. Another employee cutting nearby intermittently

Ditto

Ditto

Calculation:

$$\frac{\text{Net Count} \times 10 \times 250 \times 10^3}{1.0 \times 10^6} = \text{mppcf}$$

Remarks:

Sketch - See Reverse Side. Reference No. 6JND10 Analyzed by [illegible] Date [illegible]

A16318

MEMO AVOID ORAL INSTRUCTIONS DATE 1/31 1973

TO R. H. Steinberg

The attached is a good summation about Asbestos in insulation. Also, attached is a copy of Asbestos results from air sampling that was done by Harold Frazier (Institute I.H.) in your area last year.

I need to discuss a program with you and your key supervisors. If you will let me know when such a meeting can be scheduled, I will present the program that will put us in compliance with OSHA.

We will definitely have to improve dust removal from the collector and while placing blocks in cartons.

RECEIVED

1 1973

314-686-D

✚ DO IT THE SAFE WAY ✚ SIGNED Fred Williams

R. H. STEINBERG ph. 5129

Deposition Exhibit No. 14

Case No. _____ Received _____

Date 5-22-87 No. of Pages _____

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UCC 010601

UNION CARBIDE **INTERNAL CORRESPONDENCE**

'IEMICALS AND PLASTICS • INSTITUTE PLANT P. O. BOX 2831, CHARLESTON, WEST VIRGINIA 25330

o (Name) Mr. Fred Williams

'ivision

ocation

Date January 24, 1973

Originating Dept. Employee Relations
Hygiene/Safety

Answering letter date

'opy to Mr. R. O. Midkiff
Mr. R. E. Peele

Subject Asbestos Sampling Values
511 Insulation Fabrication Shop

Ray: The maximum exposure allowable until 1976 without respiratory protection is 10 fibers/ml; after 1976 the limit is 2 fibers/ml. Fiber Five fibers/ml is the TLV (Threshold Limit Value) until 1976.
Fred

Asbestos fiber counts for samples we have collected at the Plant 511 Insulation Fabrication Shop are submitted for your information. They may serve as guidance for any sampling program you may initiate and they should be valid as part of a records program.

Sample No.	Date	Sampling Time, min	Fiber Count/ml	Sample-Job Description
512-HHF-01	3-8-72	15	Too heavy to count	S. E. Painter - Dust collection removal for disposal.
512-HHF-02	3-8-72	5	61.5	S. E. Painter - Dust collector wearing respirator. - Job done once every two or three weeks.
512-HHF-03	3-8-72	15	24.5 min.	S. E. Painter - End of dust removal job.
512-HHF-04	11-21-72	6	4.1	L. I. Mitchell - Butt sawing.
512-HHF-05	11-21-72	6	23.4	L. I. Mitchell - Placing pairs of sawed blocks in cartons.
512-HHF-06	11-21-72	9	4.1	H. Stanley - Janitor broom sweeping.
512-HHF-07	11-21-72	15	3.9	H. E. Samples - Cementing pre-formed blocks.
512-HHF-08	12-4-72	15	0.05	L. I. Mitchell - Off bearing south saw 1st cut.
512-HHF-09	12-4-72	15	5.3	H. E. Witt - Separate sawed block - apply glue.
512-HHF-10	12-4-72	9	-	Bad filter - not counted.
512-HHF-11	12-4-72	15	11.8 min.	H. E. Samples - Removing glued blocks from stack-edging.
512-HHF-12	12-4-72	4	27.8	H. E. Samples - Sawing block.
512-HHF-13	12-4-72	13	6.5	L. I. Mitchell - Off bearing second cut - placing in carton.
512-HHF-14	12-4-72	1½	9.8	L. I. Mitchell - Unpacking a single carton - sawed 22 pcs.
512-HHF-15	12-4-72	1½	48.3	L. I. Mitchell - Filling carton with sawed blocks.

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All samples were collected on the person of the employee and each of them represents a peak exposure for the various work tasks. All work was involved with asbestos containing KAYLO block materials.

The problem area most deserving corrective measures is obviously the dumping procedure of the shop dust collecting facility. Excessive exposures are encountered in the handling, especially packing, of sawed block material.

Exposure values have not been reported to the employees nor to shop supervision.

Very truly yours,

H. H. Frazier

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