PLAINTIFF'S
EXHIBIT
DUP-1391

DU PONT
ESTABLISHED 1802

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE 19898

ENGINEERING DEPARTMENT

CC: D. C. Windsor - ~~SAP~~

SAFETY & FIRE PROTECTION
REF TO
APR 7 1972
AM ANS PM
7 8 9 10 11 12 1 2 3 4 5 6

Asbestosis

April 6, 1972

DR. CHARLES F. REINHARDT
HASKELL LABORATORY

The attached letter from Felix Stein of the University of Pittsburgh regarding asbestos sampling technique will undoubtedly have some bearing on our future procedure.

Engineering Standard S4T, "Control and Measurement of Asbestos Dust", is in final typing and should be issued in the near future.

If the procedure developed by Haskell does not include Stein's references from OSHA you may wish to consider them. In any case would you let me have your thoughts on the matter so that we may answer Stein in behalf of the Construction Division? The sending of two unused filters with each sample seems like an expensive requirement.

Thanks for your assistance.

CONSTRUCTION DIVISION

Ingo

Ingo Zeise
Asst. Division Safety Engineer

IZ:rbw
Attach.

DUP 1111037

00128..

BETTER THINGS FOR BETTER LIVING THROUGH CHEMISTRY

DU 055030

From: Mr. Felix Stein
602 Meckler Dr.
Pittsburgh, Pa. 15220

3-31-72

To: Engineering Department,
Louviers Building
Wilmington, De.
Constr. Div. Safety Office

Gentlemen:

New guide lines have been recently published by the Occupational Safety and Health Administration regarding the sampling and analysis of air-borne asbestos fibers. For your information a copy of the new method is enclosed.

The changes as outlined in the enclosed publication are from technical standpoint minor and therefore I believe that the results of the asbestos fiber counts will not be significantly different as determined by either method.

However, the newly recommended procedure is legally the correct uniform way to monitor your environment in the plant.

The new sampling rate is 2.0 lpm with an open face filter and with each batch of samples two filters should be submitted to me which were subjected to exactly the same handling except that no air was drawn through them.

In regard to the analytical procedure used by me, the change is only in the magnification for the microscopic fiber analysis. The new recommended magnification is lower than the one I used so far. This will result in a somewhat lower fiber count since some of the thinnest fibers will be no longer visible for me.

Please let me know if and when you wish to change over to the new procedure. I am ready at any time to make the change and I will be glad to assist you if you have any questions regarding the sampling.

With best regards,

Felix Stein

DUP 1111038

DU 055031

SAMPLING DATA SHEETS FOR HEALTH HAZARDS PREPARED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

OSHA SAMPLING DATA SHEET NO. 1

Substance:
Carbon monoxide.

Standard: 29 CFR 1910.93(b), Table G-1, of August 13, 1971
8-hour time-weighted average: 50 ppm (55 mg/m³).

Sampling Equipment:
(1) CO meter. (Portable. Hopcalite – reagent type) – Follow directions. (Primary Method)
(2) Certified or NIOSH approved detector tubes and a hand operated pump (not squeeze bulb) may be used for compliance purposes. (Secondary Method)

Analytical Procedure:
(1) Direct reading instrument based on measurement of heat of reaction produced by oxidation of CO to CO_2. Follow instructions.
(2) Detector tubes are read for length of stain, strokes of pump are noted and appropriate corrections made for pressure (or altitude) above 5000 feet (1500 m). The tubes are not to be used when below 0 degree F (-18 C) or above 125 degrees F (52 C).

Sampling Period:
(1) Hopcalite: maximum feasible number of readings should be averaged to determine average exposure. Time [illegible] dependent on variability and cyclical nature of exposures.
(2) Detector tubes: direct reading, length-of-stain detector tubes (certified on NIOSH approved) may be [illegible] compliance purposes, if at least one sample per [illegible] per exposed worker or close group of [illegible] an 8-hour day more frequent samplings per [illegible] preferred, especially for exposures over 50 ppm. [illegible] sistent samplings (one per hour is considered the [illegible] reasonable number).

[illegible] Danger Situations:
[illegible]ons above 500 ppm (10 x TLV) for any [illegible]me are considered to be an imminent danger.

[illegible] Violation:
[illegible]ations above 150 ppm (3 x TLV) for a total [illegible] or more in an 8-hour workday are considered

[illegible] Violation:
[illegible]ations above 50 ppm, but below 150 ppm for [illegible] weighted average are considered nonserious

[illegible] Violation:
[illegible]

Standard: 29 CFR 1910.93(n), of December [illegible], 1971
8-hour time-weighted average*: 5 fibers per milliliter greater than 5 microns in length.
Excursion limit*: 10 fibers per milliliter, up to [illegible] minutes in an hour for up to 5 hours per 8-hour day.
*Unprotected or improperly protected worker exposures.

Analytical Method:
Fibers counted at 400-450 magnification, using phase contrast illumination, with sample mounted in high viscosity solution of membrane filter material.

Sampling Equipment:
Personal sampling pump plus Millipore type AA filter (37 mm, 0.8 micron pore size). Face cap is removed, filter used open face during sampling. Sampling rate 1 l/m.

Sample Size:
Minimum period of 15 minutes for evaluation of excursion limit. Several samples of up to 4 hours for evaluation of 8-hour average. Samples with a visible deposit may be too heavy to count. Compare with a clean filter. Heavy concentrations of visible dust in the air (over 500 fibers/ml) may require short sampling periods of only 5 minutes, or less.

Blanks:
With each batch of samples submit two filters which are subjected to exactly the same handling as for the samples except that no air is drawn through them. Label these as blanks.

Shipping:
The cassettes in which the samples are collected should be shipped in a suitable container, designed to prevent damage in transit.

Imminent Danger Situations:
Generally not applicable.

Serious Violation:
5.1 or more fibers per ml, greater than 5 microns in length, for an unprotected or improperly protected worker, for an 8-hour time-weighted average, except for certain proven excursions as noted in the emergency standard which may raise the 8-hour time-weighted average to 5 fibers per ml.

Nonserious Violation:
Not applicable.

De Minimis Violation:
Not applicable.

[illegible] SAMPLING DATA SHEET NO. 2

OSHA SAMPLING DATA SHEET NO. 3

Substance:
Crystalline silica.

DUP 1111039

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