

FILE NAME: Asbestos Sacks and Bags (ASB)

DATE: 1948 Nov 12

DOC#: ASB095

DOCUMENT DESCRIPTION: Report - WI Dept of Health K-Lo Dust Survey
of Algoma, WI Plywood & Veneer Plant



The State of Wisconsin
WISCONSIN STATE BOARD OF HEALTH
INDUSTRIAL HYGIENE UNIT
STATE OFFICE BUILDING
1 WEST WILSON STREET
MADISON 2

EXHIBIT 14
CHRISTIE VANDENBERG
Date 7-25-85

K-LO DUST SURVEY

Plant: Algoma Flywood & Veneer

Location: Algoma, Wisconsin

Date of Survey: November 12, 1948

Official Contacted: Mr. G. R. Meroer, Superintendent

The purpose of this study was to determine atmospheric concentrations of dust in the vicinity of the K-LO bagging operation and during unloading of K-LO from freight cars.

At the time of this study, the bagging operations were provided with local exhaust ventilation consisting of a double hood or plenum chamber partially surrounding the bags during filling. Air entered the hood through a series of 1/2 inch holes spaced on approximately 6 inch centers. Visual inspection showed a considerable amount of the dust generated during bagging operations was not being caught by the hood.

Air samples were collected with a midjet impinger apparatus and dust counts were made by an approved light field microscopic technique.

Results of the dust counts are listed in the following table.

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Sample No.	Description	Dust Count MPCFs
1	Bagging K-10 sanding dust -- breathing zone of operator -- door open. Bag dropped off during sampling.	40.5
2	Same as sample no. 1 but during normal operation, door open	25.1
3	General room atmosphere -- south end of room	23.9
4	Same as sample no. 2, but door closed	28.1
5	Loading bagged K-10 on truck	23.7
6	Unloading K-10 from box car -- breathing zone of worker inside car	10.9
7	Same as sample no. 6	10.1
8	Unloading K-10 -- breathing zone of workers outside of car	3.7

*MPCF = Millions of Particles Per Cubic Foot of Air

CONCLUSIONS

Although the dust concentrations of 24 to 40 million might not cause an acute health hazard because workers are exposed for only about one and one-half hours per day and because the asbestos dust is diluted with calcium silicate and wood, such concentrations are nevertheless a borderline situation from the asbestosis standpoint and can cause respiratory irritations.

The double hood now being used is not utilizing available power to get the maximum benefit.

Concentrations of K-10 dust at the car unloading operations were not high enough to constitute a health hazard under present conditions of exposure of about four or five days per month.

RECOMMENDATIONS

It is recommended that the present bagging exhaust hoods be modified by removing the perforated inner wall.

INDUSTRIAL HYGIENE DIVISION

William Z. Fluck
William Z. Fluck
Engineer

WZF:vs
12/22/48

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Industrial Hygiene Statistics
Data Description: 12-Nov-48

OEL	DESCRIPTIVE STATISTICS
5	Number of samples (n) 8
	Maximum (max) 40.5
	Minimum (min) 3.7
	Range 36.8
	Percent above OEL (%>OEL) 87.500
	Mean 20.750
	Median 23.800
	Standard deviation (s) 11.849
	Mean of logtransformed data (LN) 2.826
	Std. deviation of logtransformed data (LN) 0.773
	Geometric mean (GM) 16.860
	Geometric standard deviation (GSD) 2.165

Sample Data
(max n = 50)
No less than (-1)
or greater than (+)

40.5
25.1
23.9
28.1
23.7
10.9
10.1
3.7

TEST FOR DISTRIBUTION FIT

W-test of logtransformed data (LN)	0.980
Lognormal ($\alpha = 0.05$)?	Yes
W-test of data	0.944
Normal ($\alpha = 0.05$)?	Yes

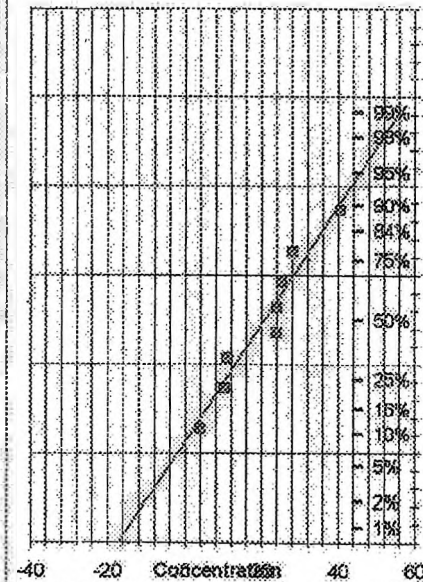
LOGNORMAL PARAMETRIC STATISTICS

Estimated Arithmetic Mean - MVUE	21.761
LCL _{1,95%} - Land's "Exact"	14.227
UCL _{1,95%} - Land's "Exact"	52.671
95th Percentile	60.158
UTL _{0.5%,95%}	198.151
Percent above OEL (%>OEL)	94.238
LCI _{1,95%} %>OEL	74.074
UCI _{1,95%} %>OEL	99.250

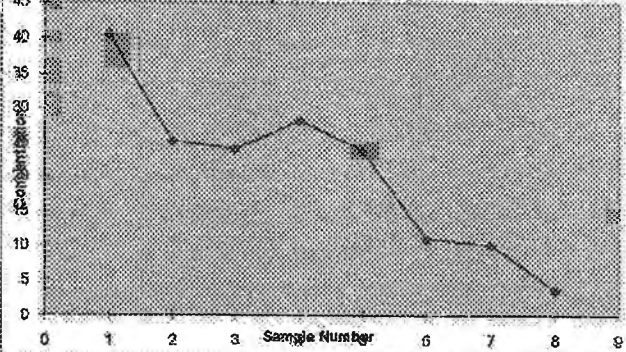
NORMAL PARAMETRIC STATISTICS

Mean	20.750
LCL _{1,95%} - t statistics	12.813
UCL _{1,95%} - t statistics	28.687
95th Percentile - Z	40.241
UTL _{0.5%,95%}	58.52
Percent above OEL (%>OEL)	90.811

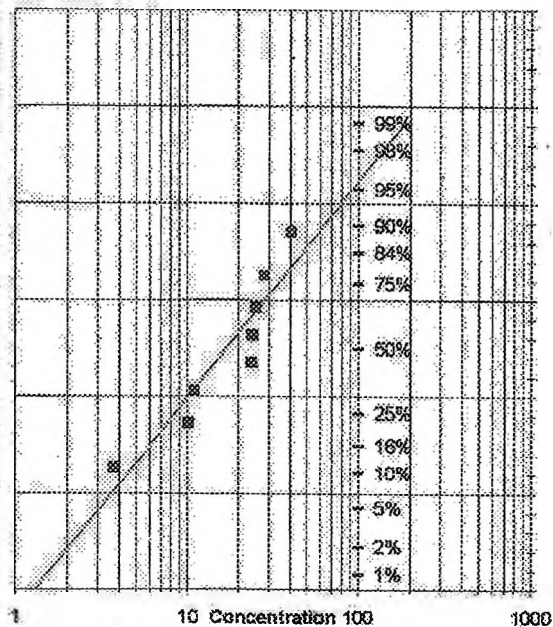
Linear Probability Plot and
Least-Squares Best-Fit Line



Sequential Data Plot



Logprobability Plot and
Least-Squares Best-Fit Line



Idealized Lognormal Distribution

