

TO	R. L. Toole	FIELD POINT OR DEPT. & BLDG. NO. Long Beach	DATE YOUR LETTER
JM	R. W. Modrell	FIELD POINT OR DEPT. & BLDG. NO. Akron - D/0020, 5-H	DATE THIS LETTER 12-3-80
SUBJECT	INDUSTRIAL HYGIENE SURVEY - NOV. 3-4, 1980		

This industrial hygiene visit to the Long Beach plant had been previously scheduled by Mr. Tom Bialke, but the visit was consolidated with other travel plans to conserve travel funds.

During the visit, attention was given to the handling of lead compounds during weighing operations. Significant lead exposures existed at this operation. Vinyl chloride monitoring was conducted on two employees in D/5636 and no VC exposure was detected for these two individuals. Of particular interest during the visit was the evaluation of personnel exposures to di-2-ethylhexyl phthalate (DOP). No significant DOP exposures existed for personnel working on the Henschel mill line during the processing of DOP plasticized stock. Recent toxicological findings on antimony were discussed with plant personnel and monitoring data, previously acquired by the plant, were reviewed. No excessive exposures to antimony have been identified so far.

Recommendations:

1. Continue efforts to reduce and control personnel lead exposures. Recent monitoring data have shown excessive exposures at the pigment weighing operation and at the Henschel mixer. Reevaluate engineering controls and work practices.
2. Make certain blood lead analyses are maintained current as required by the CAL-OSHA lead standard.
3. Consider incorporation of the zinc protoporphyrin analyses on blood samples along with blood lead analyses as now required in the plant's medical surveillance program for employees exposed to lead.
4. Perform additional limited monitoring for antimony to make certain all personnel exposures are below 500 ug/M³.
5. Where possible, expedite installation of the air pallet system for handling lead compounds. When the system is operational, initiate a comprehensive lead monitoring program to evaluate effectiveness of the system in controlling personnel lead exposures.

Results and Discussion:

Lead and Antimony-Cadmium:

Two weighmen in D/5637 were monitored for lead exposures during the weighing of S-2 (lead sulfate) and S-10 (lead stearate). Results of the monitoring are shown in the following table.

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ATMOSPHERIC LEAD CONCENTRATIONS*

<u>Sample Identification</u> <u>Employee/Date/SS No.</u>	<u>Rate</u> <u>(Lpm)</u>	<u>Duration</u> <u>(min.)</u>	<u>Lead</u> <u>Concentration</u> <u>(ug/M³)</u>
C.L. Henderson; 11/4/80; 436-98-6911 Weighman, D/5637	2.1	313	169
A.R. Johnson; 11/4/80; 561-02-6978 Weighman, D/5637	2.2	327	177

* Monitoring performed with calibrated duPont Constant Flow samplers, Model P-2500 and 37 mm, 0.8 micrometer, MCE filters.

Lead exposure to these two individuals was clearly in excess of the OSHA permissible exposure limit of 50 ug/M³. Past monitoring data have shown excessive lead exposures for the job of weighman and the present data corroborate this condition. The plant has made a conscientious effort to counsel and instruct employees in proper work practices for handling lead compounds and this effort must continue. The use of personal protective equipment must also be continued to ensure that actual employee exposures to lead remain controlled. Blood lead levels of personnel working in lead exposure areas should be closely followed. With the present two employees, Mr. A.R. Johnson received a blood lead analysis on 9-26-80 and results were satisfactory (26 ug/100 grams); Mr. C.L. Henderson's last analysis was on 5-8-80 and results at that time were also satisfactory (35 ug/100 grams). However, six months have elapsed since Mr. Henderson's last analysis and another analysis is due.

The air pallet system for lead handling is intended to be operational at Long Beach in the first quarter 1981. It is anticipated that this system will greatly reduce, if not eliminate, significant lead exposure to personnel. After the system is installed and operating, extensive lead monitoring will be needed to evaluate effectiveness of the system in controlling lead exposures.

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It was intended to conduct monitoring for antimony oxide during this visit; however, there was no production schedule requiring use of this material and monitoring was not performed. Plant personnel had previously conducted monitoring for lead, antimony and cadmium during the period 9-17-80 to 9-26-80 and results of this monitoring were available for review (Samples 101-1, 102-2, 103-2, 104-3, 105-1, 106-3, 109-1, 110-2; Brecksville Log #208-80, 10-27-80). For the eight samples atmospheric lead concentrations ranged from 9.0 to 370 ug/M³; two samples, 101-1 and 103-2 exceeded the permissible exposure limit of 50 ug/M³. Both samples were personal monitor samples of R. McKenzie, Henschel operator. Atmospheric antimony concentrations ranged from

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Lead and Antimony-Cadmium (con't)

10 to 149 ug/M³ and cadmium from 0.1 to 1.3 ug/M³. Neither antimony nor cadmium exceeded the recommended maximum exposure concentrations of 500 ug/M³ and 50 ug/M³ respectively. The high lead results for the Henschel operator indicated that this exposure source needs to be reevaluated and corrective action taken to better control dust emissions.

Vinyl Chloride

Two employees in D/5636 were monitored for vinyl chloride exposure and results are shown in the following table.

VINYL CHLORIDE CONCENTRATIONS*

Sample Identification Employee/Date/SS No.	Sample Parameters		Vinyl Chloride Concentration (ppm)
	Rate (Lpm)	Duration (min)	
M. Bors; 11-4-80; 568-41-1696 OVA Monitor, D/5636	0.052	342	< 0.33
M. Cihonski; 11-4-80; 196-46-3063	0.058	329	< 0.31

* Monitoring performed with calibrated duPont Constant Flow Samplers, Model 125, using MDA, 150 mg, standard size charcoal tubes.

No vinyl chloride was detected on the charcoal tubes within the sensitivity of the method, i.e. approximately 0.3 ppm. These employees experienced no significant vinyl chloride exposure during the sampling period.

Di-2-ethylhexyl phthalate (DOP) / Total Particulate

There has been recent concern about the toxicological properties of DOP and steps are being taken to evaluate worker exposure to this material at various operations. During the visit, the Henschel mill line was processing Compound 83718 containing P-75 (DOP) plasticizer. Total particulate samples were obtained on three individuals working on the line and two area samples were obtained near the mill. After total particulate had been measured on these samples gravimetrically, the samples were analyzed specifically for DOP by gas chromatography. Results of the total particulate measurements are presented in the following table.

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DOP/Total Particulate (con't)

DOP TOTAL PARTICULATE CONCENTRATIONS*

Sample Identification <u>Employee/Date/SS No.</u>	<u>Sample Parameters</u>		Particulate Concentration (mg/M ³)
	<u>Rate</u> (Lpm)	<u>Duration</u> (min.)	
L. Hurd; 11/3/80; 551-82-1802 Relief Millman	2.1	428	0.80
C. Watson; 11/3/80; 564-76-0658 Millman	2.2	423	0.75
A. Solorio; 11/3/80; 566-98-4486	2.4	424	2.39
Area sample, face of mill hood	2.3	362	0.31
Area sample, face of mill hood, by conveyor	2.5	365	0.26

* Monitoring performed with calibrated duPont Constant Flow Samplers, Model P-2500 and 37 mm, 5.0 micrometer PVC filters.

Particulate on the samples of Hurd and Watson, as well as the two area samples at the mill represents principally fume exposure. These particulate (fume) concentrations are minimal, particularly in view of the current recommended exposure limit for DOP of 5 mg/M³. All of the total particulate weight cannot be attributed to DOP, but it is likely that DOP will account for 40 to 65% of the particulate on the filters. Results of the specific gas chromatographic analysis for DOP will be forwarded when they become available. It is evident, however, that personnel exposures to DOP, as well as to total fume, are significantly less than the current recommended DOP exposure limit. If the recommended exposure limit is lowered as a result of recent toxicological studies, it may be necessary to reassess personnel exposure conditions.

The particulate sample for A. Solorio, Henschel operator, is representative of dust exposure rather than fume. The recommended "nuisance dust" exposure limit of 10 mg/M³ is applicable to materials being handled at the Henschel mixer and the Henschel operator's dust exposure of 2.39 mg/M³ is below this limit.

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Housekeeping and general appearance throughout the plant were excellent. Personnel were cooperative and I especially want to thank Messrs. Bud Birch and Wayne Smith for their hospitality and assistance.

R. W. Modrell
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cc: R.W.Birch; H. Waltemate; E.C. Martinelli; T.S. Bialke;
R.A.Guyton/H.W.Dietz; D/0020 Staff *(file)*

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TABLE I.

NOISE DOSIMETER RESULTS
Long Beach - Oct. 25-26, 1978

<u>Employee</u>	<u>Job Class</u>	<u>115 dBA Exceeded</u>	<u>% 8-hr. Exposure 90 dBA Base</u>
J. Chappel	Charge Oper. Trainee	No	60
A. Perry	Charge Operator	No	63
J. Holloway	" "	Yes	37
M. Parra	Column Operator	Yes	53
E. Avila	Bagger	Yes	38
C. Bentley	Compounder	No	23
R. Gilbert	Henschel Operator	No	90

TABLE II.

VINYL CHLORIDE MONITORING

<u>Name</u>	<u>Job Class</u>	<u>Sample Time (min.)</u>	<u>Concentration (ppm)</u>
L. Nester	Poly Operator	326	0.1
J. Valdez	Poly Entry	325	0.2
J. Holloway	Charge Operator	326	0.4
General Area, 3rd Flr., Poly Bldg.		326	0.4

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