

ETHYL CORPORATION

INTER-OFFICE

To C. B. Hunt Address Houston Plant

FROM R. N. Matherne Address BRT

SUBJECT Industrial ^{hygiene} Survey of October 16-18, 1985 DATE November 21, 1985

Attached is the industrial hygiene report from the survey conducted on October 16-18, 1985. This survey was conducted in the aluminum powdering and Aluminum alkyl blending area.

R. N. Matherne

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RNM:bto

Attachment

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File: Pasadena - Al Alkyls

ETH 002416

Introduction and Summary

I conducted a survey of the aluminum powdering and aluminum alkyl blending area. Personal monitoring was conducted for exposure to noise and aluminum powder. The noise exposures of the aluminum powdering operators, as expected, exceeded the OSHA limit of 90 dB(A) averaged over 8 hours. The aluminum powder (dust) exposure was well below the recommended exposure limit (TLV) of 10 mg/M³.

Recommendation

- Apply heat shielding material around the exhaust vent from the newer furnace.
- Consider insulating the small break room near the furnaces for noise so that the operators can use that room to get away from noise exposures as well as heat exposure.

Comments and Discussion

Heat

Because of the heat levels near the furnace, the operators work one hour near the furnace and one hour away from the furnace, usually in the lunch (break) room. In addition, a portable air conditioned break room was installed near the two furnaces so that the operator can take a break from the heat and still watch the furnace.

I noted radiant heat coming from the vent for the newer furnace. Shielding was placed on one side of the vent to protect electrical wiring. It was obvious to me from standing on both sides of the exhaust vent that the shielded side produced much less radiant heat than the unshielded side. Shielding applied around the open areas of the vent should reduce the heat load to the employees that work in that area.

Noise

The noise exposures of the aluminum powdering operators were between 93 and 98 dB(A) averaged over 8 hours (see Table I). The entire furnace area noise level, when it is operating, ranges from 96-109 dB(A) (see Diagram A). The operator spends only 4 hours per day in the furnace area. It should be noted that the portable break room installed near the furnace to provide a cool spot for the operators has noise levels inside between 84-86 dB(A). It is recommended that the operators continue to wear hearing protection when they are in this portable break room. Another option is to better insulate the portable break room to reduce potential exposures while in this room. The noise appears to be entering through cracks in the door seals and through the large plexiglass window. If this break room had noise levels below 85 dB(A), and preferably below 80 dB(A), they could use the room to lower their 8 hour TWA exposures.

Hearing protection is worn anytime anyone enters the aluminum powdering building. Hearing protection is not required however in the lunch room and tool room.

I evaluated the aluminum alkyl blending operator for noise exposure. His exposure on two different days was below 80 dB(A) averaged over 8 hours. No hearing protection is worn.

Aluminum Powder

I evaluated the operator's potential exposures to aluminum powder. I found that the operator was exposed to no detectable level ($<0.2 \text{ mg/M}^3$) of aluminum powder. A stationary sample, placed in the furnace area, showed about 2 mg/M^3 . The exposure limit for aluminum powder is 10 mg/M^3 .

TABLE I

Pasadena, TX
Personal Noise Monitoring

Aluminum Powdering

<u>Date</u>	<u>Name/SS#</u>	<u>Job</u>	<u>Time (Min.)</u>	<u>Wearing Hearing Protection</u>	<u>8 hr. TWA dB (A)</u>
10/17/85	Bill Hurry 462-44-3611	Aluminum Powdering	409	Yes	98
10/17/85	Will Fiegler 450-56-6005	Aluminum Powdering	409	Yes	94
10/18/85	Sam Baker 460-84-9690	Aluminum Powdering	320	Yes	93

Alkyl Blending

10/17/85	Clyde P. Sells 464-72-2933	Blending Operator	420	No	<80
10/18/85	Louis Salazar 451-72-9862	Blending Operator	320	No	<80

OSHA Permissible Exposure Limit - 90 dB(A) averaged for 8 hours.

Monitoring Method - Quest Noise Dosimeter

Monitoring performed by R. N. Matherne

TABLE II

Pasadena, TX
Dust Monitoring - Aluminum Powdering

<u>Date</u>	<u>Name/SS#</u>	<u>Job</u>	<u>Time (Min.)</u>	<u>Total Dust</u>
10/18/85	Norman Green 461-40-1074	Aluminum Powdering	304	ND
10/18/85	Area Sample	Near Furnace	209	1.7 mg/M ³

ACGIH TLV

10 mg/M³

ND - None Detected; minimum detectable
level is

0.2 mg/M³

Monitoring performed by R. N. Matherne

Monitoring Method: Matched weight filter cassette,
high flow pump.

ETH 002420

Noise Levels Measured in dB (A)

