

OWENS-ILLINOIS
TECHNICAL CENTER

FEBRUARY 21, 1957

PURPOSE

This visit was routine and part of our periodic survey.

CONTACTS

Contact was made with Mr. Lintz, Safety Director, who assisted in our survey. Also present was Mr. Hazard of Owens Industrial Relation Division, Toledo.

PROCEDURES

Air samples were collected in the midget impinger, using distilled water as the collection medium. Dust counts were made on a light field following the procedure as outlined by the United States Public Health Service.

Ledge dust samples were first treated with acid to remove the acid soluble portion and the residue was examined for free silica by means of the methenaphthol oil-insoluble method.

FINDINGS

Air Sample No. 1 - Batch House - General area air sample - Taken at the breathing level just west of the can bin during normal batch collection operations.

4.7 million particles, 10 microns or less in size per cubic ft. of air.

Air Sample No. 2 - Cellular Silicates - Cleaning, smoothing and trimming operation - Taken at the breathing level to the left of the operator during the stenciling.

1.7 million particles, 10 microns or less in size per cubic ft. of air.

Air Sample No. 3 - Cellular Silicates - Mixer charging - Taken at the breathing level, approximately 4' to the left of the charging point.

25.1 million particles, 10 microns or less in size per cubic ft. of air.

Air Sample No. 2 - Dust from the top of the hood enclosure over the cleaning, smoothing and trimming operation.

46.5% acid soluble

53.5% acid insoluble

53.5% free silica on the acid insoluble portion

DISCUSSION

The maximum acceptable concentration of a dust which is 100% free silica is set by most authorities at 1 million particles, 10 microns or less in size per cubic ft. of air.

Air Sample No. 1 has a count which is less than the permissible limit of 5 for a dust 100% silica. We know that the dust encountered in Air Sample No. 1 is not 100% silica. It would represent all acid insoluble constituents of the batch. Housekeeping conditions were too good to allow us to gather a representative ledge dust sample. The actual exposure to this dust concentration would be only about two hours per day.

Air Sample No. 2 was taken in a pilot plant operation and represents an operation where the dust slats are cleaned, smoothed and trimmed. This operation is enclosed and exhausted and a dust filter is attached just inside the enclosure which carries the word "Top" on it. The air sample was taken just to the left of this operation.

Air Sample No. 3 was also taken in the pilot plant from the Cellular Silica. It represents the mixer and lining. Silica flour is used in this mixer and the flour is so fine that it passes through all feed and 100% of it will pass through 100 mesh. This silica flour presents quite an exposure. We can raise the severity of the exposure by the dust count.

We wanted to stress the point that the Cellular Silica is only a pilot plant operation. We also wanted to emphasize the fact that the employees engaged in the Cellular Silica operations are equipped with respirators and these respirators are used for all dust operations.

We also noted the equipment and exhaust arrangement used for mixing the lead slats. This is a smaller glass which is used to seal the face plate to the funnel of a television tube (color). Lead oxide is used in the glass batch and we would say that the operation is extremely exhausted. We did notice on thing which we feel should deserve a comment. Evidently a bag of lead had broken and it was obvious that it had not been completely cleaned up. This had happened outside the hood used for mixing the lead batch and there were evidences of it being

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tracked around. Care should be taken whenever handling lead and whenever spillages are encountered they should be cleaned up immediately, preferably by vacuum cleaning.

We also checked on the use of monochlorobenzene. The majority of this work is done in an exhausted room. Most of the stations where this monochlorobenzene is used are permanent stations and we would suggest that local exhaust be provided for these stations. In talking this over with Mr. ~~Lowry~~ ^{Lowry}, we were advised that their plant called for this.

We also observed the equipment used for their plastic coating operation. This equipment is in a separate room right next to the one used to make the lead batch. Toluene is one of the solvents used and is somewhat toxic. The equipment is exhausted and a new fan was being installed at the time of our visit. This fan seemed quite large and we feel that a lot of air might have to be bled from the room itself in order to prevent too much of a negative pressure within the enclosure for the plastic. Safety cans were ordered for the solvents and these should take care of the fire exposures. The over-sized fan might be of considerable use in aiding the ventilation of the room.

None of the operations listed above can be considered as full time operations. By this I mean that they are not eight hours a day, five days a week. Most of the work is either research, experimental or small operations.

BJH:vmx/ez