



Dow U.S.A.

The Dow Chemical Company
P O Box 150
Plaquemine, Louisiana 70765-0150

May 30, 1991

Dean Walters Cell Service Building 5601

On May 30, 1991, AT-500 and conveyor in the Cell Service Block, Building 5601, was checked for face velocity. The Alnor Model 8925 Thermo Anemometer was used to take the face velocity measurements. AT-500 was checked at a(n) 24 " sash opening.

The criteria for hood classification, smoke tube observation, and flow measuring devices used in rating hood ventilation performance is attached.

Also included are recommendation(s), observation(s), testing data sheet(s) and a maintenance checklist which should be followed to maintain effective hood ventilation and appropriate classification.

Please respond in writing to Industrial Hygiene within one month as to action taken or planned in regard to these recommendations.

Please feel free to contact me with any questions.

Thank you,

Darlene S. Creel
Industrial Hygiene Department
Building 3502-W
Ext. 6181

DO A 022880
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Observations:

The laboratory hood designation, the average face velocity (FV) and minimum measurements (FVm) reported in feet per minute (FPM), and its rated classification is as follows:

Designation	Sash Hood Opening	(FPM) FV	(FPM) FVm	Classification
AT-500	24 "	163	125	

The smoke turbulence was good on AT-500.

CONVEYOR

The smoke turbulence was *GOOD*.

Recommendations:

1. AT-500 and conveyor should be put on C-9 checklist for annual check and routine maintenance done on them.
2. Practice good housekeeping inside the AT-500.

**CRITERIA FOR HOOD CLASSIFICATION, SMOKE TUBE
OBSERVATION, AND FLOW MEASURING DEVICES**

CLASSIFICATIONS:

CLASS "A" (HIGH TOXICITY USE)
CARCINOGENIC, TOXIC
HIGHLY FLAMMABLE

125-150 FT/MIN AVERAGE
FACE VELOCITY
100 FT/MIN MINIMUM READING

CLASS "B" (MODERATE TOXICITY USE)
TOXIC OR FLAMMABLE

100 FT/MIN AVERAGE FACE
VELOCITY
80 FT/MIN MINIMUM READING

INADEQUATE
DOES NOT MEET MINIMUM REQUIREMENTS

SMOKE TUBE OBSERVATIONS:

****GOOD (AIR CAPTURE BY HOOD IS STRONG AND WELL DEFINED WITH MINIMAL INTERNAL TURBULENCE, AND NO OBSERVABLE SMOKE SWIRLING BACK TO HOOD FACE WHEN PERSON STANDS AT HOOD FACE.)

****MODERATE (AIR CAPTURE BY HOOD IS POSITIVE BUT WITH SOME INTERNAL TURBULENCE OBSERVED APPROACHING THE HOOD FACE. NO SMOKE ESCAPING THE HOOD.)

****POOR (AIR CAPTURE BY HOOD IS WEAK AND/OR NOT WELL DEFINED. TURBULENCE INSIDE THE HOOD AND SMOKE OBSERVED ESCAPING HOOD FACE.)

FLOW MEASURING DEVICES:

WHEN THE STATIC PRESSURE DEVIATES (-/+) 10% FROM THE LISTED STATIC PRESSURE, ITEM #20 SHOULD BE FOLLOWED ON THE MAINTENANCE CHECKLIST ATTACHED TO THIS REPORT. THE STATIC PRESSURE READING WAS ESTABLISHED AT TIME OF PERFORMANCE CHECK AND INDICATED BY A RED LINE ON THE DEVICE. DOCUMENTATION OF AIR FLOW MONITOR DEVICE PERFORMANCE IS TO BE DONE ONCE PER WEEK. INSPECTION/ZEROING/CALIBRATION OF AIR FLOW DEVICE IS TO BE DONE ONCE PER YEAR. THIS DOCUMENTATION IS TO BE PART OF THE INDUSTRIAL HYGIENE RECORDS FOR YOUR PLANT. PLEASE FORWARD DOCUMENTATION TO THE PLANT INDUSTRIAL HYGIENE CONTACT FOR YOUR PLANT.

LOUISIANA DIVISION
INDUSTRIAL HYGIENE HOOD PERFORMANCE TESTING DATA

PLANT: Cell Service
 HOOD I.D.: AT-500

DATE: May 30, 1991
 TESTED BY: Darlene Creel

CONVEYOR----smoke observation was GOOD.

HOOD FACE VELOCITY READINGS AT A(N) 24" SASH OPENING.

125	193
160	119

SMOKE TUBE OBSERVATIONS WITH A(N) 24" SASH OPENING -

****GOOD (AIR CAPTURE BY HOOD IS STRONG AND WELL DEFINED WITH MINIMAL INTERNAL TURBULENCE, AND NO OBSERVABLE SMOKE SWIRLING BACK TO HOOD FACE WHEN PERSON STANDS AT HOOD FACE.)

Designation	Sash Hood Opening	(FPM) FV	(FPM) FVm	Classification
AT-500	24 "	163	125	

Used the Alnor Model 8925 Thermo Anemometer

FV = AVERAGE FACE VELOCITY
 FVm = MINIMUM MEASUREMENT
 FPM = FEET PER MINUTE

CONSEQUENCES OF EXPOSURE TO TOXIC AMOUNTS

NOISE

ACUTE: Short exposure to high noise levels may cause ringing in the ears and/or temporary hearing loss. Potential for damage increases as sound pressure levels increase above 90 dBA. Repeated short-term exposures may cause permanent loss.

CHRONIC: Repeated exposures may destroy hair cells which transmit sound signals to the brain and may cause permanent hearing loss.

Degree of hearing loss determined by sound level (dBA) & exposure time.

<u>Average dBA</u>	<u>% of exposed workers with hearing loss at end of working lifetime</u>
80	0-5
85	10-15
90	21-29

<u>Typical sound pressure levels (dBA)</u>	<u>Situation</u>
40	quiet room
60	window air conditioner
85	noise requiring you to raise voice to be heard at 3 feet.
95	power lawn mower
105	saws, grinders
115	sand blasters
120	pneumatic chipper or nail driver

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