



DOW CHEMICAL U.S.A.

July 27, 1982

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ENVIRONMENTAL HEALTH SURVEY FOR THE PLASTICS DEPARTMENT
APRIL 19, 1982 THROUGH JUNE 30, 1982

In the future, reports will be issued quarterly to summarize industrial hygiene data generated during the quarter. The purpose of the report is as follows:

1. Present sampling data compiled on exposures during the quarter.
2. Review any problem areas detected during the quarter.
3. Review any changes in regulations, limitations or reporting requirements initiated by Dow or regulatory agencies.
4. Summarize the status of all special project work.
5. Review the status of the program and compare to annual regulatory requirements.

I. POLY A

A. Noise Exposure Survey

The threshold limit value (TLV) for noise is 85db(A). This limit is for a job where no ear protection is worn. The samples listed below are time weighted average (TWA) samples.

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
Shift Supervisor	315 minutes	19
#5 Compressor	415 minutes	83
#5 Compressor	435 minutes	43
Extrusion SOT	390 minutes	103
Extrusion SOT	375 minutes	100
#1 Compressor	310 minutes	48

The annual schedule requirement is 24 samples.

B. Chemical Exposure Survey

The chemicals that are being monitored this year are Isopar C and Isopar M. The threshold limit value (TLV) for Isopar C is 400 ppm. The threshold limit value (TLV) for Isopar M is 300 ppm. The samples listed below are excursion type samples, where the exposure was monitored for the duration of a particular job.

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Isopar C Exposure (ppm)</u>
Catalyst Mixing	80 minutes	< .1
Catalyst Mixing	65 minutes	< .1
Catalyst Mixing	45 minutes	< .1

The annual schedule requirement is 12 samples. One Isopar M excursion sample was caught on the millwright job, but no analysis has yet been made. The annual schedule requirement for Isopar M is 3 samples.

C. Dust Exposure Survey

The dust that is being monitored this year is Superfloss (SiO₂). The threshold limit value (TLV) is .1 mg/m³ responsible dust and .3 mg/m³ non-respirable dust.

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Respirable Exposure (mg/m³)</u>	<u>Non-Respirable Exposure (mg/m³)</u>
Additive Mix	8 minutes	10	20

The annual schedule requirement is 3 samples.

- (1) Testing Procedure Problem - While evaluating the dust exposure data for the second quarter, errors were discovered in the testing procedure that the Plastics Department has always used for dust excursion sampling. The Industrial Hygiene Department is currently revising the testing procedure.

II. POLY BA. Noise Exposure Survey

The threshold limit value (TLV) for noise is 85 db(A). This limit is for a job where no ear protection is worn. The samples listed below are time weighted average (TWA) samples:

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
Shift Supervisor	320 minutes	11
O.S. (B Boardman)	300 minutes	5
Tr. I & II SOT	310 minutes	52
Tr. I & II SOT	360 minutes	45

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II. POLY B (Continued)

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
Tr. III & IV SOT	310 minutes	70
Day OT	310 minutes	43
Extrusion OT	335 minutes	54
Extrusion SOT	460 minutes	28
Extrusion OS	335 minutes	45
Process Analyzer OS	300 minutes	3

The annual schedule requirement is 36 samples.

B. Chemical Exposure Survey

The chemical being monitored this year is hexane. The threshold limit value (TLV) for hexane has been changed from 100 ppm to 50 ppm. The samples listed below are excursion type samples, where the exposure was monitored for the duration of a particular job.

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Exposure (ppm)</u>
Cleaning FL 202 E & F	25 minutes	.5
Cleaning FL 202 E & F	30 minutes	< .1
Cleaning FL 202 E & F	70 minutes	.3

The annual schedule requirement is 32 samples.

C. Dust Exposure Survey

The threshold limit value (TLV) for the nuisance dust (CaSt, HDPE, Irganox) found in Poly B is 10 mg/m³ total dust.

The samples listed below are excursion samples.

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Exposure (mg/m³)</u>
Adding CaSt Tr. II	3 min.	50
" " " "	2 min.	210
" " " "	2 min.	< 10
" " Tr. III	5 min.	20
" " Tr. IV	4 min.	60
Emptying dump hopper	40 min.	20
" " "	40 min.	10
Filtering polymer in lab	60 min.	< 10
" " " "	45 min.	< 10

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The annual requirement is 32 samples.

- (1) Testing Procedure Problem - While valuating the dust exposure data for the second quarter, errors were discovered in the testing procedure that the Plastics Department has always used for dust excursion sampling. The Industrial Hygiene Department is currently revising the testing procedure.

III. POLY CA. Noise Exposure Survey

The threshold limit value for noise is 85 db(A). This limit is for a job where no ear protection is worn. These are the results of the time weighted average sampling.

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
OT Reaction Area	350 min.	69
" "	360 min.	80
" "	330 min.	35
" "	320 min.	37
" "	400 min.	21
SOT Reaction Area	365 min.	42
" "	330 min.	44
" "	383 min.	51
" "	345 min.	18
" "	390 min.	32
SOT Outside Lab	370 min.	23
" "	400 min.	19
" "	325 min.	3
" "	300 min.	10
" "	340 min.	20
" "	410 min.	29
SOT Inside Lab	355 min.	1
" "	300 min.	1
" "	315 min.	2
OS Boardman	330 min.	4
" "	295 min.	1
" "	320 min.	3
OS Extra	400 min.	10
" "	315 min.	16
Shift Supervisor	315 min.	8
" "	320 min.	14
Technical	355 min.	3

The annual schedule requirement is 108 samples.

B. Chemical Exposure Survey

Isopar E and Dowtherm® A are the chemicals being monitored this year. The threshold limit value (TLV) for Isopar E is 400 ppm. These are the results of the time weighted average (TWA) sampling for Isopar E:

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (ppm)</u>
OT Reaction Area	380 min.	< .1
SOT " "	300 min.	.3
" " "	315 min.	< .1
OS Extra	365 min.	< .1
Technical	322 min.	< .1
Cleaning FL 611 (excursion)	35 min.	< .1

The annual schedule requirement is 10 Isopar E TWA samples.

III. POLY C (Continued)B. Chemical Exposure Survey

These are the results of the Isopar E excursion sampling, where the exposure was monitored for the duration of a particular job:

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Exposure (ppm)</u>
Cleaning FL 611	35 minutes	.1

The annual schedule requirement is 5 excursion samples.

The five Dowtherm® A excursion samples that were required for this year have been changed to TWA samples. This was done because of the infrequent handling of Dowtherm® A outside of a closed system. The TLV for Dowtherm® A is 1 ppm. None of the samples have yet been caught.

C. Dust Exposure Survey

The threshold limit value (TLV) for the nuisance dust found at Poly C is 10 mg/m³ total dust. The samples listed below are excursion samples.

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Exposure (mg/m³)</u>
Mixing CaSt	90 Minutes	90
Mixing CaSt	25 Minutes	10

The annual schedule requirement is 10 excursion samples.

- (1) Testing Procedure Problems - While evaluating the dust exposure data for the second quarter, errors were discovered in the testing procedure that the Plastics Department has always used for dust excursion sampling. The Industrial Hygiene Department is currently revising the testing procedure.

IV. CPEA. Noise Exposure Survey

The threshold limit value (TLV) for noise is 85 dbA. This limit is for a job where no ear protection is worn. The sample listed below are time weighted average (TWA) samples.

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
SOT Boardman	330 min.	11
" "	315 min.	5
" "	330 min.	8
SOT Outside	295 min.	43
OS Extra	355 min.	21
" "	340 min.	3

The annual schedule requirement is 24 TWA samples.

IV. CPE (Continued)B. Sampling Schedule Change

When the sampling schedule was originally made, CPE operators were adding talc in the warehouse. PMS laborers have now taken over this job. Therefore, the 10 excursion samples that were scheduled for CPE have been added to the PMS schedule.

C. Illumination Study

An illumination study, which was conducted before daylight, showed that approximately 25% of the lights in the operating area were inoperative. Another study will be made when the lights are repaired.

V. PMSA. Noise Exposure Survey

The threshold limit value (TLV) for noise is 85 dbA. This limit is for a job where no ear protection is worn. The samples listed below are time weighted average samples.

1. Poly A Warehouse

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
OT	300 min.	30
OT	325 min.	36
Laborer	315 min.	46
SOT	320 min.	18
Shift Supervisor	320 min.	24

2. CPE Warehouse

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
OT	340 min.	88
Laborer	135 min.	18

3. Poly C Warehouse

<u>Job Classification</u>	<u>Duration of Sample</u>	<u>Exposure (% of TLV)</u>
OT	310 min.	55
Packaging Specialist	300 min.	18

The annual schedule requirements is 30 TWA samples.

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V. PMS (Continued)B. Dust Exposure Survey

The threshold limit value (TLV) for the nuisance dust found in CPE and Poly A warehouses is 10 mg/m³ total dust. The TLV for talc, which is handled at the CPE warehouse, is 3 mg/m³ respirable dust and 6 mg/m³ non-respirable dust. The samples listed below are excursion samples.

1. Poly A Warehouse

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Exposure Mg/M³</u>
Cleaning Sock Filters	6 min.	20
" " "	12 min.	180
" " "	12 min.	120

2. CPE Warehouse

<u>Job Performed</u>	<u>Duration of Sample</u>	<u>Respirable Exposure(mg/m³)</u>	<u>Non-Respirable Exposure(mg/m³)</u>
Adding talc thru bag splitter	5 Min.	10	< 10
Adding Talc thru bag splitter	5 Min.	20	< 10
Adding Talc thru bag splitter	7 Min.	20	< 10
Reblending thru Grinder	65 Min.	30	30
Reblending thru Grinder	270 Min.	< 10	10

The annual schedule requirement is 22 excursion samples.

- (1) Testing Procedure Problem - While evaluating the dust exposure data for the second quarter, errors were discovered in the testing procedure that the Plastics Department has always used for dust excursion sampling. The Industrial Hygiene Department is currently revising the testing procedure.

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