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EXHIBIT
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TO: S. W. ELLIS

FROM: R. J. MOCZYGEMBA RJM

"ALATHON"™ "F" UNIT
FIRST QUARTER INDUSTRIAL HYGIENE REPORT

1. Semi-annual monitoring of production personnel for Vinyl Acetate exposure was conducted this quarter while producing 18% and 25% copolymers. Thirty-nine samples were taken covering six jobs. The extruder job recorded the highest exposure levels with every set. The highest exposure was 2.27 ppm 12-hr. time weighted average. The TLV for Vinyl Acetate is 10 ppm.

2. Task monitoring for Vinyl Acetate continued during the first quarter. Twenty samples were taken while conducting six different tasks. Results were all below 1 ppm. Included in these results are nine samples taken during hot stripping the low pressure separators after producing 142M lbs. of homopolymer following an ALA2650 campaign.

3. While producing VAX360 and VAX3190LG (25% copolymers), monitoring was conducted in the extruder room in the vicinity of the rear seals and outside the respirator required area. Of the twenty-three samples taken, several results were at the 10 ppm TLV with some slightly exceeding it.

4. Two samples were taken for SDR dust exposure while mixing SDR solution. The results were well below the 10 mg/m^3 TLV.

RJM/kp

DUP 0814488

INDUSTRIAL HYGIENE SUMMARY - FIRST QUARTER 1983

ALATHON™ DIVISION - S. W. Ellis/C. M. Beck

1. General
   a. The 1983 Industrial Hygiene Programs for all seven proprietors were completed.

   b. The relocation of the Industrial Hygiene Laboratory to the laboratory formally occupied by the Alathon™ chemist was completed in January.

   c. The chemical inventory lists were revised according to the revised procedure (I/H #3) and guidelines approved by the Industrial Hygiene committee and issued March 1, 1983.

   d. Training of the analyst who will replace the analyst currently assigned to perform Industrial Hygiene analyses was begun and was approxiamtely 80% complete at end of the first quarter.

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2. "J" Unit

a. Hexane Purifiers - Dust and hydrocarbon monitoring

Each hexane purifier contains 8250 lbs. of silica gel and 2750 lbs. of molecular sieve. There is a potential for hydrocarbon exposure while emptying and dust exposure when emptying and refilling.

Hydrocarbon results from samples taken while emptying were 0.05, 0.05 and 0.06 ppm 8 hr. TWA hexane, well below the TLV of 50 ppm. Dust exposure results from samples taken while emptying were 0.59, 4.39 and 5.17 mg/m^3. Dust exposure results from samples taken while filling were 0.13 and 0.14 mg/m^3 8 hr. TWA. All results were well below the TLV of 10 mg/m^3. Respiratory protection was worn while emptying and filling.

Monitoring during first quarter 1983 provided sufficient data for statistical evaluation. Hydrocarbon monitoring will be discontinued. Dust monitoring will continue while emptying and refilling and respiratory protection must be worn.

b. Octene Purifiers - Dust and Hydrocarbon Monitoring

Each octene purifier contains 5250 lbs. of silica gel and 1650 lbs. of molecular sieve. There is a potential for Hydrocarbon exposure while emptying and dust exposure when emptying and refilling. Dust exposure results from samples taken while emptying were 3.27 and 6.17 mg/m^3 8 hr. TWA. Dust exposure results from samples taken while filling were 0.20 and 0.25 mg/m^3 8 hr. TWA. All results were well below the TLV of 10 mg/m^3. Respiratory protection was worn while emptying and filling.

Monitoring during first quarter 1983 provided sufficient data for statistical evaluation. Hydrocarbon monitoring will be discontinued. Dust monitoring will continue while emptying and refilling and respiratory protection must be worn.

c. Octene Pump - Hydrocarbon Monitoring

Two mechanics were monitored for hydrocarbon exposure while repairing the KOBE octene pump. Total hydrocarbons were 0.67 and 1.95 ppm, well below the TLV of 100 ppm. Monitoring will continue until sufficient data has been collected for statistical evaluation.

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2. "J" Unit (cont'd)

d. Adsorber Probing - Hydrocarbon and Dust Monitoring

Twenty-seven sets of data collected while probing the adsorbers were statiscally evaluated per Du Pont standard S12T for exposure to hexane, octene, toluene and dust. The probability of not exceeding the permissable exposure limits, with 95% confidence is 100% are below. Monitoring will be discontinued.

e. Low Pressure Separators-Stripping - Hydrocarbon Monitoring

Twenty sets of data collected while stripping the low pressure separators were statistically evaluated per Du Pont standard S12T for exposure to hexane, octene and toluene. The probability of not exceeding the permissable exposure limits, with 95% confidence is 100% are below. Monitoring will be discontinued.

DUP 0814491

3. "F" Unit

a. Task Monitoring - Vinyl Acetate

Fifteen samples were taken while conducting five different task. Results were taken while conducting five different task. Results were all below 0.27 ppm 8 hr. TWA vinyl acetate, well below the TLV of 10 ppm, 8 hr. TWA.

Four mechanics were monitored while stripping the low pressure separators. The maximum exposure was 0.04 ppm, 8 hr. TWA, vinyl acetate, well below the TLV of 10 ppm, 8 hr. TWA.

b. Extruder Room - Vinyl Acetate Monitoring

While producing VAX 360 and VAX 3190LG (25% copolymers), monitoring was conducted in the extruder room in the vicinity of the rear seals and outside the respirator required area. Of the twenty-three samples taken, four results were above the TLV of 10 ppm 8 and 12 hr. TWA but below the short term exposure limit of 20 ppm. The maximum result was 13.2 ppm. Monitoring of the extruder room operators during this time resulted in an exposure of 0.70 and 1.14 ppm, 12 hr. TWA, V.A. Comfor II respirators were worn.

c. Semi-Annual Monitoring - Vinyl Acetate

Monitoring of production personnel for vinyl acetate exposure was conducted while producing 18% and 25% copolymers. Thirty-nine samples were taken covering six jobs. The extruder room operator job recorded the highest exposure levels with every set. The highest exposure was 2.27 ppm; 12 hr. TWA, well below the TLV of 10 ppm, 8 and 12 hr. TWA.

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4. Building 582 Shop

   a. Thirty risk appraisals were reviewed and transferred to the new form provided by I/H Procedure #11.

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5. Laboratory

a. An analytical procedure was developed to analyze for toluene, methyl ethyl ketone and methyl chloroform exposure while using lockweld 600 contact cement in the Carpenter Shop.

b. Task and Stationary Monitoring - Vinyl Acetate

Two analyst were monitored for vinyl acetate exposure while inspecting unpurged pellets from "F" Unit while producing a 25% V.A. copolymer. The 12 hr. TWA was 1.19 ppm and 1.69 ppm, well below the TLV of 10 ppm. Two stationary samples taken above the inspection table were 1.53 ppm and 1.99 ppm V.A.

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6. Central Shops

a. Ventilation check were done on the kerosene hood, the Ruemelin local exhaust system, and the Rollaway portable dust collector as per biannual requirement.

b. Fumes from metal inert gas (MIG) and galvanized welding were sampled. Gravimetric analysis shows both MIG exceeding the 8 hr. TWA of 5.0 mg/m^3 for respirable particulates. A respirator was not worn for this shop task. Metal analysis is being done by Shilstone.

c. Welding gas samples have been taken on welding tasks in the shop and background levels. MIG welding produced high concentrations of carbon monoxide, although welder position and use of a helmet reduced this level tenfold. Plasma arc cutting of stainless steel produced high levels of ozone; again, breathing zone concentrations were much lower. No other welding task produced gas levels above trace concentrations.

d. A single confined space welding sample was taken on a welder in #6 softener (APH). Gravimetric results indicate a level of 85.26 mg/m^3 total particulate for the 79 minute task. The 8 hr. TWA would be 14.03 mg/m^3 had he done no other welding for the remainder of the day, which was not the case. The TLV is 5.0 mg/m^3 for respirable particulates, and 10.0 mg/m^3 for total particulates. The welder was not wearing a respirator. Metal analysis is being done by Shilstone. This sample will be repeated soon in a similar softener.

e. Soldering and brazing rod and flux analyses are in from Shilstone and being compiled for future reference.

f. Octave band analyses were done on electric and air grinders in the Fab Shop to determine the proper acoustical material for baffle insulation and curtains. Currently grinder noise levels are around 100 dBA.

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DU 009853

7. Instrument and Electrial (I&E) Shop

a. Ventilation checks were made on the spray paint booth and hood as per biannual requirement.

b. Ammonia samples were taken in the blueprint room in Building 3; 15 to 20 ppm levels are given off by prints. Engineering controls are recommended.

c. Methylene chloride and 1,1,1-trichloroethane were monitored. Solvent use in spray booth with fan on produced no detectable levels; bench ue of MC produced high levels (100-300 ppm), but task is only 5 minutes long.

d. Noise measurements were made of the spray booth fan and spraying operations. Results (88 dBA and 99 dBA, respectively) indicate the need for hearing protection by the booth operator when the booth is in use.

e. Solvent and hydrocarbon levels monitored during use of Du Pont Lucite spray enamel in spray paint hood. No detectable levels were found.

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8. Carpenter Shop

a. Ventilation checks were made on the local exhaust in the welding booth before and after a major leak in the system was repaired. An increase in exhaust velocity was noted, however, a cone is necessary to increase exhaust area.

b. Nine wood dust samples have been taken (seven personal, two area) in program to ensure compliance with exposure to hard and soft wood dust. Currently, samples being compared to a PEL of 3.0 mg/m^3, representing a 50% exposure to soft wood dust and 50% to hard wood. Latest LOGAN analysis shows a 95% confidence that 84.5% of the exposures will be below 3.0 mg/m^3. Monitoring to continue.

c. Preparations being made for spray paint study in paint booth of Building 31. Test stand built for area samples as painters are contract and cannot be monitored. Initial samples being analyzed for major components.

d. Lokweld 600 contact adhesive volatiles monitored with four area and two personal samples. Highest sample showed less than 25% combined TLV for volatile components examined. Respirator no longer required for this task in open shop conditions. Closed shop conditions (winter) should be monitored.

e. Use of respirators was reviewed and updated. A compliance plan dated March 10, 1983, was entered in the I. H. Notebooks.

Quantitative fit testing of the Carpenter and Sheet Metal Group was completed on March 23, 1983.

f. Compliance plans for noise control in Bldg. 31 and Bldg. 11 dated March 9, 1983, were entered in the I. H. Notebooks. The floor in the Carpenter Shop has been repainted and appropriate areas have been marked. Signs designating these areas have been completed. The Bldg. 11 area has also been marked and signs displayed.

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