

TO J.P. Griffin	FIELD POINT OR DEPT. & BLDG. NO. ALTC B/418	DATE YOUR LETTER
FROM S.E. Williams	FIELD POINT OR DEPT. & BLDG. NO. ALTC B/418	DATE THIS LETTER 04-18-91
SUBJECT		

INDUSTRIAL HYGIENE UPDATE FOR THE FIRST QUARTER OF 1991

Avon Lake Technical Center personnel and area monitoring results for the First Quarter of 1991 are summarized as follows:

I. VINYL CHLORIDE (PERMISSIBLE EXPOSURE LIMIT = 1 PPM)

<u>JOB CLASSIFICATION</u>	<u>JOB AREAS</u>	<u>NO. OF SAMPLES</u>	<u>RANGE OF EXPOSURES (ppm)</u>	<u>AVERAGE EXPOSURES (ppm)</u>
Development Operator Helper	3-Liter Lab B/413	3	<0.25	<0.25
	SA-Poly B/414	2	<0.25 - 0.49	0.31
	Mass-Poly B/414	2	<0.25	<0.25
	Dispersion Pilot Plant B/414	1	0.58	0.58
	55-Liters B/414	2	<0.25	<0.25
Development Helper #2	55-Liters B/414	1	<0.25	<0.25
Process Tech.	Dispersion Pilot Plant B/414	2	<0.25 - 0.45	0.29
	55-Liters B/414	1	<0.25	<0.25
TOTAL		14		

Of the 14 personnel monitorings for Vinyl Chloride collected during the first quarter of 1991, 13 (93%) were below 0.5 ppm. One (7%) was above the Action Level of 0.5 ppm, with no individual exposures exceeding the OSHA Permissible Exposure Limit of 1 ppm.

**II. NOISE (OSHA PERMISSIBLE EXPOSURE LIMIT = 100% DOSE/90DECIBELS)
(OSHA ACTION LEVEL FOR HEARING CONSERVATION PROGRAM = 50% DOSE/
85 DECIBELS) BFG PERMISSIBLE EXPOSURE LIMIT = 50% DOSE/85DECIBELS**

<u>JOB CLASSIFICATION</u>	<u>BLDG/AREA</u>	<u>NO. OF SAMPLES</u>	<u>AVERAGE % DOSE NOISE EXPOSURE</u>
Supervisor-Estane Pilot Plant	414 Estane Pilot Plant	1	33.16
Process Assistant	414 Estane Pilot Plant	1	77.24
Development Operator #2	414 Estane Pilot Plant	1	86.16
Lab Operator (Temp)	414 Estane Pilot Plant	1	65.44
Development Assistant	426 6-Mill Area	2	51.29
Process Technician	426 6-Mill Area	1	44.30
Development Operator Helper	426 6-Mill Area	1	59.18
Process (Temp)	426 6-Mill Area	3	72.98

The Estane Pilot Plant in B/414 is an area recognized as a "High Noise Area" during an R&D Production run. The personnel noise readings were taken to ascertain the noise exposure levels received during the Estane Process run. The four personnel being monitored wore ear protection for an 8-hour shift representation. The results confirm that the exposure to noise created by the Estane Pilot Plant reached an average level of 87dBA. The Estane R&D group will look at various engineering controls (e.g. sound-deadening curtains) which can be used to reduce the noise level in the Pilot Plant. In the meantime, all persons working or observing in this area during an Estane product run are required to wear hearing protection to comply with OSHA's regulation.

The results confirm that the exposure to noise created by the 6-mill equipment reached an average level of 86dBA. The seven personnel being monitored wore ear protection for an 8-hour shift representation. The Geon R&D group has recognized the noise problem in this area. At the present time it is not feasible to provide the necessary engineering controls to reduce noise levels under the 85dBA limit. However, all persons working in this area are "Required" to wear ear protection to lower exposure level below 85dBA in order to comply with OSHA's regulation.

**III. CYCLOHEXANE (PERMISSIBLE EXPOSURE LIMIT = 300 PPM)
METHYL ETHYL KETONE (PERMISSIBLE EXPOSURE LIMIT = 200 PPM; 300 PPM SHORT-TERM)
TOLUENE (PERMISSIBLE EXPOSURE LIMIT = 100PPM; 150 PPM SHORT-TERM)**

Two personnel monitorings were taken in B/416, the Eiger Mill Room, to measure exposure levels to Cyclohexane, MEK and Toluene. These chemicals were used during the Brookfield Viscosity Tests and the Solubility tests on Estane material.

The personnel exposure level range to:

- Cyclohexane was (less than) <0.1 ppm to 0.15 ppm.
- MEK was 2.4 ppm to 2.5 ppm.
- Toluene was 0.16 ppm to 0.20 ppm.

The job classification is Laboratory Technician.

IV. ASBESTOS (PERMISSIBLE EXPOSURE LIMIT = 0.2 F/CC)

<u>BLDG.</u>	<u>AREA</u>	<u>FIBERS/CC</u>
Avon Lake Business Bldg.	Second Floor Middle of Hallway	0.03
Avon Lake Business Bldg.	Second Floor Middle of Hallway 14" From Floor Surface	0.03
Avon Lake Business Bldg.	Second Floor Office Area North Side of Bldg.	0.02

Three area samples were monitored for Zeon Chemical Inc. in the Avon Lake Business Bldg. to check the area exposure to asbestos. Although asbestos was identified from samples taken from the pipe insulation on the second floor, it was confirmed that no undesirable effects of asbestos fibers existed in the ambient air. The average area exposure level was 0.03 F/CC.

V. 2,6-DIISOPROPYLPHENYL ISOCYANATE (PERMISSIBLE EXPOSURE LIMIT = 0.02PPM, USED AS A GUIDE - PEL NOT ESTABLISHED BY OSHA)

Five area monitorings were taken in the Estane Pilot Plant Extruder Area to measure the extent of an area exposure level potential involving DIPI, which is one of the ingredients in the Stabaxol-P product used for making Estaloc. The average area exposure level to DIPI was 0.002 ppm.

VI. LEAD (PERMISSIBLE EXPOSURE LIMIT = 0.05 MG/M³)

Eight personnel samples were taken for ALGC, B/452, Geon West P-Line to measure exposure levels to lead. The two Flexible Products, 78870 NAT 021 and 84607 Black 289 were being produced during the Lead monitoring. Of the eight personnel monitorings for Lead collected, three were below 0.3 mg/m³, three were above the Action Level of 0.3 mg/m³ and two were at and above the OSHA Permissible Exposure Limit of 0.05 mg/m³. The personnel exposure level range was (less than) <0.003 mg/m³ to 0.09 mg/m³.

Two operators wore a half-mask using a GMA Organic Vapor Cartridge and the other six operators wore a half-mask using a Cartridge Filter Type H TC-21C-135.

VII. BUTADIENE (PERMISSIBLE EXPOSURE LIMIT = 1000 PPM)

The ACGIH Threshold Limit Value (TLV) for Butadiene is 10 ppm. A 2 ppm PEL is expected to be the OSHA's Standard that will be enforced by mid-year 1991.

<u>JOB CLASSIFICATION</u>	<u>JOB AREAS</u>	<u>NO. OF SAMPLES</u>	<u>RANGE OF EXPOSURES (ppm)</u>	<u>AVERAGE EXPOSURES (ppm)</u>
Development Operator #2	Hycar Pilot Plant	1	22.5	22.5
Development Operator Helper	Hycar	3	0.35-12.7	4.5

Four Personnel samples were taken in B/421, 3rd Floor, Hycar Pilot Plant to measure exposure levels to Butadiene vapors. The personnel exposure level range was 0.39 ppm to 22.5 ppm.

The Process operations group has initiated capital work to improve ventilation at the suspected sources of Bd exposure. The duct work under the 15 gallon reactors will be modified with a new fan being installed to solely deal with this source. Upon completion of this engineering work, additional monitoring will be conducted.

VIII. FIBERGLASS (PERMISSIBLE EXPOSURE LIMIT = 15 MG/M FOR TOTAL DUST)

Five personnel and six area monitorings were done for ALGC, B/452, Geon West, 2nd Floor K-Tron Dumping Station and the Buss Condux L-Line on the 1st floor. The monitoring was done to ascertain the extent of an exposure to Fiberglass in this working environment. Due to failure of equipment at Brecksville Analytical Lab, the results could not be analyzed properly and accurately. Monitoring will be repeated in the future.

IX. A = ALLYL ALCOHOL (PERMISSIBLE EXPOSURE LIMIT = 2 PPM) B = ALLYL CHLORIDE (PERMISSIBLE EXPOSURE LIMIT = 1 PPM)

<u>JOB CLASSIFICATION</u>	<u>JOB AREAS</u>	<u>NO. OF SAMPLES</u>	<u>RANGE OF EXPOSURES</u> (ppm)	<u>AVERAGE EXPOSURES</u> (ppm)
Laboratory Technician	Lg. Henschel B/426	1A 1B	<0.3 <0.2	<0.3 <0.2
Development Operator #1	Banbury B/426 6-Mill Area	1A 1B	<0.3 <0.2	<0.3 <0.2
Laboratory Technician	Cuber B/426 6-Mill Area	1A 1B	<0.3 <0.2	<0.3 <0.2
Process Operator (Temp)	6-Mill B/426	1A 1B	<0.3 <0.2	<0.3 <0.2

Four personnel monitorings were taken in the Extruder Building 426 to measure exposure levels of the off-gases (Allyl Alcohol and Allyl Chloride) from the resin (110X905) used in the Compound 165-61-23-1 (GM-Low Glass Air Bag Cover Cmpd) during the production process. The personnel exposure level range to - Allyl Alcohol was (less than) <0.3 ppm, and Allyl Chloride was (less than) <0.2 ppm.

All four individuals wore a half-mask using an Organic Vapor Cartridge R-21.

X. STYRENE (PERMISSIBLE EXPOSURE LIMIT = 50 PPM; 100 PPM SHORT TERM)

Two personnel monitorings were taken in the Latex Polymerization Lab, B.423, to measure exposure levels to Styrene. The average exposure level was (less than) <0.1 ppm. The sample length was 422 minutes to represent a full 8-hour shift.

The job classifications were Laboratory Technician and Development Assistant.



Stephen E. Williams

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