

LOUISIANA DIVISION INDUSTRIAL HYGIENE REPORT
THE DOW CHEMICAL COMPANY

LAD-95-1978-5
File Number

12/13/95
Date

Title: Results of Monitoring Conducted at the Vinyl I Facility for Tetras, Beta-Tri,
Ethylene Dichloride, Ethyl Chloride, Methylene Chloride and Vinyl
Chloride During 1978.

SUMMARY:

During 1978 monitoring was performed for Tetras, Beta-Tri, Ethylene Dichloride, Ethyl Chloride, Methylene Chloride and Vinyl Chloride at the Vinyl I Facility.

Results are presented in the attached tables.

Coversheet prepared by:

J. Paul

DISTRIBUTION:

None

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DO 143060
CONFIDENTIAL

8 HOUR TWA LIMIT = 1 PPM
EXCURSION LIMIT = 5 PPM

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR 1977 1978

DO 143061
CONFIDENTIAL

Plant and
Block No.

VINYL CHLORIDE - 1701

Chemical

VINYL

IHG
or
TLV
Units

PPM

Date 2/1/79

Year	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured 8 hr/15
1978	OFFICE	ENGINEERS & STENO	54	0.10	CONTINUOUS	15' 0.94	.27/4.33
1978	LAB	SUPERVISOR & O.S.	16	0.25	CONTINUOUS	15' 0.84	.37/1.94
1978	LAB	S.O.T. & O.T.	22	0.95	CONTINUOUS	15' 1.90	5.75/5.18
1978	SHIFT SUPERVISOR	S/S	50	0.21	CONTINUOUS	15' 0.94	.33/2.59
1978	VINYL BOARD	O.S.	36	0.20	CONTINUOUS	15' 1.17	.35/3.04
1978	EDC BOARD	O.S.	34	0.14	CONTINUOUS	15' 1.20	.22/2.53
1978	BETA-TRI BOARD	S.O.T.	18	0.35	CONTINUOUS	15' 1.75	2.92/11.20
1978	SAMPLES	O.T.	30	0.26	CONTINUOUS	15' 0.59	.55/2.68
1978	TANKS	O.T.	42	0.31	CONTINUOUS	15' 2.84	.42/15.30
1978	DAY OPERATIONS <i>incl. Mott. Controller</i>	ALL SHIFT	152	0.11	CONTINUOUS	15' 1.06	.76/9.01

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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[For I.H. Use only]

EMPLOYEE EXPOSURE SUMMARY
FOR YEAR 1977

DO 143062
CONFIDENTIAL

Plant and
Block No.

MARINE

Chemical

VINYL

IHG
or
TLV
Units

PPM

Date

2/1/79

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured
1978	DOCK	SHIP DISCONNECT	119			15' 10.73	148.33*
1978	VINYL PERSONNEL	CATCHING SAMPLES	28			15' 5.81	47.77**
*	VAPOR RELEASE DURING DISCONNECT						
**	NEW MAN ON JOB						

Units of Measure: Gas or Vapor: ppm (Volume)
 Cust (not Asbestos) or Mist: mg/Cubic Meter
 Asbestos: No. of Fibers 5 micron cc of Air Sampled
 Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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8 HOUR TWA LIMIT = 200 PPM
EXCURSION LIMIT = 250 PPM

EMPLOYEE EXPOSURE SUMMARY
FOR YEAR 1977 1978

DO 143063
CONFIDENTIAL

Plant and Block No. VINYL CHLORIDE - 1701 Chemical MeCl₂ ING or TLV Units PPM Date 2/1/79

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured 8 Hr/15'
1978	OFFICE	ENGINEERS & STENO	54	0.34	CONTINUOUS	15' 3.12	4.65/7.26
1978	LAB	SUPERVISOR & O.S.	16	0.25	CONTINUOUS	15' 3.71	.45/14.52
1978	LAB	S.O.T. & O.T.	22	0.18	CONTINUOUS	15' 1.99	.52/4.44
1978	SHIFT SUPERVISOR	S/S	50	0.19	CONTINUOUS	15' 3.59	.68/8.87
1978	VINYL BOARD	O.S.	36	0.21	CONTINUOUS	15' 3.95	.48/12.77
1978	EDC BOARD	O.S.	34	0.29	CONTINUOUS	15' 3.20	.89/7.26
1978	BETA-TRI BOARD	S.O.T.	18	0.20	CONTINUOUS	15' 2.55	.57/7.19
1978	SAMPLES	O.T.	30	0.32	CONTINUOUS	15' 1.90	1.65/6.39
1978	TANKS	O.T.	42	0.21	CONTINUOUS	15' 2.81	.34/6.39
1978	DAY OPERATIONS	ALL SHIFT	152	0.19	CONTINUOUS	15' 3.12	.60/25.40

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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[For I.H. Use only]

8 HOUR TW LIMIT = 200 PPM
EXCURSION LIMIT = 250 PPM

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR 1977 1978

Plant and
Block No.

VINYL CHLORIDE - 1701

Chemical

MeCl₂

THG
or
TLV
Units

PPM

Date 2/1/79

DO 143064
CONFIDENTIAL

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured 8 Hr/15'
1978	OFFICE	ENGINEERS & STENO	54	0.34	CONTINUOUS	15' 3.12	4.65/7.26
1978	LAB	SUPERVISOR & O.S.	16	0.25	CONTINUOUS	15' 3.71	.45/14.52
1978	LAB	S.O.T. & O.T.	22	0.18	CONTINUOUS	15' 1.99	.52/4.44
1978	SHIFT SUPERVISOR	S/S	50	0.19	CONTINUOUS	15' 3.59	.68/8.87
1978	VINYL BOARD	O.S.	36	0.21	CONTINUOUS	15' 3.95	.48/12.77
1978	EDC BOARD	O.S.	34	0.29	CONTINUOUS	15' 3.20	.89/7.26
1978	BETA-TRI BOARD	S.O.T.	18	0.20	CONTINUOUS	15' 2.55	.57/7.19
1978	SAMPLES	O.T.	30	0.32	CONTINUOUS	15' 1.90	1.65/6.39
1978	TANKS	O.T.	42	0.21	CONTINUOUS	15' 2.81	.34/6.39
1978	DAY OPERATIONS	ALL SHIFT	152	0.19	CONTINUOUS	15' 3.12	.60/25.40

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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[For I.H. Use only]

8 HOUR TWA LIMIT = 1,000 PPM
EXCURSION LIMIT = 1,250 PPM

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR ~~1977~~ 1978

DO 143065
CONFIDENTIAL

Plant and
Block, No.

VINYL CHLORIDE - 1701

Chemical

EtCl

ING
or
TLV
Units

PPM

Date

2/1/79

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured 8 Hr/15
1978	OFFICE	ENGINEERS & STENO	54	0.22	CONTINUOUS	15' 1.86	1.86/11.10
1978	LAB	SUPERVISOR & O.S.	16	0.33	CONTINUOUS	15' 1.50	1.56/5.55
1978	LAB	S.O.T. & O.T.	22	0.33	CONTINUOUS	15' 2.91	1.48/11.10
1978	SHIFT SUPERVISOR	S/S	50	0.44	CONTINUOUS	15' 2.96	3.04/19.43
1978	VINYL BOARD	O.S.	36	0.45	CONTINUOUS	15' 2.95	2.47/19.43
1978	EDC BOARD	O.S.	34	0.49	CONTINUOUS	15' 4.78	2.22/44.09
1978	BETA-TRI BOARD	S.O.T.	18	0.15	CONTINUOUS	15' 1.45	.74/5.55
1978	SAMPLES	O.T.	30	0.42	CONTINUOUS	15' 1.68	1.57/11.10
1978	TANKS	O.T.	42	0.36	CONTINUOUS	15' 4.45	4.58/24.95
1978	DAY OPERATIONS	ALL SHIFT	152	0.30	CONTINUOUS	15' 3.16	1.52/49.97

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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For I.H. Use only

8 HOUR TWA LIMIT = 50 PPM
 EXCURSION LIMIT = 75 PPM
 NIOSH PROPOSAL LIMITS:
 8 HOUR TWA LIMIT = 1 PPM
 EXCURSION LIMIT = 2 PPM

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR 1977 1978

Plant and
 Block No. VINYL CHLORIDE - 1701

Chemical EDC

IHG
 or
 TLV
 Units

PPM

Date 2/1/79

DO 143066
 CONFIDENTIAL

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	High at Exposure Measured 8 hr/15
1978	OFFICE	ENGINEERS & STENO	54	0.89	CONTINUOUS	15' 6.46	3.19/26.52
1978	LAB	SUPERVISOR & O.S.	16	1.12	CONTINUOUS	15' 3.24	3.17/7.91
1978	LAB	S.O.T. & O.T.	22	1.25	CONTINUOUS	15' 6.13	5.36/38.25
1978	SHIFT SUPERVISOR	S/S	50	1.34	CONTINUOUS	15' 10.18	3.59/50.12
1978	VINYL BOARD	O.S.	36	2.09	CONTINUOUS	15' 19.20	5.67/157.4
1978	EDC BOARD	O.S.	34	2.16	CONTINUOUS	15' 11.86	6/15/30.00
1978	BETA-TRI BOARD	S.O.T.	18	2.12	CONTINUOUS	15' 11.00	7.7./42.86
1978	SAMPLES	O.T.	30	4.54	CONTINUOUS	15' 10.46	13.18/48.80
1978	TANKS	O.T.	42	1.60	CONTINUOUS	15' 10.14	1.82/36.35
1978	DAY OPERATIONS	ALL SHIFT	152	1.79	CONTINUOUS	15' 28.65	20.77/102.88

Units of Measure: Gas or Vapor: ppm (Volume)
 Cust (not Asbestos) or Mist: mg/Cubic Meter
 Asbestos: No. of Fibers 5 micron cc of Air Sampled
 Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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For I.H. Use only

8 HOUR TWA LIMIT = 10 PPM
EXCURSION LIMIT = 20 PPM

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR ~~1977~~ 1978

Plant and
Block No.

VINYL CHLORIDE - 1701

Chemical

BETA-TRI

IHG
or
TLV
Units

PPM

Date

2/1/79

DO 143067
CONFIDENTIAL

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured 8 Hr/15
1978	OFFICE	ENGINEERS & STENO	54	0.13	CONTINUOUS	15' 2.84	.95/12.91
1978	LAB	SUPERVISOR & O.S.	16	0.14	CONTINUOUS	15' 1.28	.23/4.67
1978	LAB	S.O.T. & O.T.	22	0.23	CONTINUOUS	15' 1.88	1.20/6.05
1978	SHIFT SUPERVISOR	S/S	50	0.29	CONTINUOUS	15' 2.32	3.05/5.05
1978	VINYL BOARD	O.S.	36	0.19	CONTINUOUS	15' 1.91	1.36/5.05
1978	EDC BOARD	O.S.	34	0.21	CONTINUOUS	15' 2.11	.75/4.88
1978	BETA-TRI BOARD	S.O.T.	18	0.27	CONTINUOUS	15' 1.71	1.63/5.05
1978	SAMPLES	O.T.	30	0.36	CONTINUOUS	15' 0.95	.97/5.05
1978	TANKS	O.T.	42	0.15	CONTINUOUS	15' 2.13	.88/10.10
1978	DAY OPERATIONS	ALL SHIFT	152	0.33	CONTINUOUS	15' 2.23	9.36/13.72

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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For I.H. Use only

8 HOUR TWA LIMIT = 100 PPM
EXCURSION LIMIT = 150 PPM

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR ~~1977~~ 1978

IHG
or
TLV
Units

PPM

Date 2/1/79

Plant and
Block No.

VINYL CHLORIDE - 1701

Chemical 1,1,1,2 TETRAS

DO 143068
CONFIDENTIAL

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured
1978	OFFICE	ENGINEERS & STENO	54	0.10	CONTINUOUS	15' 0.86	1.11/5.20
1978	LAB	SUPERVISOR & O.S.	16	0.06	CONTINUOUS	15' 0.29	.14/.59
1978	LAB	S.O.T. & O.T.	22	0.04	CONTINUOUS	15' 0.40	.37/1.32
1978	SHIFT SUPERVISOR	S/S	50	0.08	CONTINUOUS	15' 0.81	.34/5.77
1978	VINYL BOARD	O.S.	36	0.11	CONTINUOUS	15' 1.41	.47/6.44
1978	EDC BOARD	O.S.	34	0.08	CONTINUOUS	15' 0.45	.14/1.07
1978	BETA-TRI BOARD	S.O.T.	18	0.06	CONTINUOUS	15' 0.78	.16/4.29
1978	SAMPLES	O.T.	30	0.26	CONTINUOUS	15' 0.93	.83/4.29
1978	TANKS	O.T.	42	0.10	CONTINUOUS	15' 0.45	.25/2.80
1978	DAY OPERATIONS	ALL SHIFT	152	0.12	CONTINUOUS	15' 1.04	2.08/8.58

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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8 HOUR TWA LIMIT = .1 PPM (DOW)
EXCURSION LIMIT = .3 PPM (DOW)

EMPLOYEE EXPOSURE SUMMARY

FOR YEAR 1977 1978

ING
or
TLV
Units

Plant and
Block No.

VINYL CHLORIDE - 1701

Chemical

1,1,2,2, TETRAS

PPM

Date 2/1/79

DO 143069
CONFIDENTIAL

Qtr.	Job or Area Description	Job Classification	No. of Samples	Personal Sample TWA	Area Grab/continuous	Excursion & Duration Minutes	Highest Exposure Measured 8 Hr/15
1978	OFFICE	ENGINEERS & STENO	54	0.04	CONTINUOUS	15' 0.15	.10/.54
1978	LAB	SUPERVISOR & O.S.	16	0.03	CONTINUOUS	15' 0.24	.08/.82
1978	LAB	S.O.T. & O.T.	22	0.05	CONTINUOUS	15' 0.13	.10/.25
1978	SHIFT SUPERVISOR	S/S	50	0.03	CONTINUOUS	15' 0.18	.08/.83
1978	VINYL BOARD	O.S.	36	0.03	CONTINUOUS	15' 0.39	.09/3.88
1978	EDC BOARD	O.S.	34	0.04	CONTINUOUS	15' 0.15	.15/.28
1978	BETA-TRI BOARD	S.O.T.	18	0.03	CONTINUOUS	15' 0.10	.08/.28
1978	SAMPLES	O.T.	30	0.04	CONTINUOUS	15' 0.14	.09/.28
1978	TANKS	O.T.	42	0.04	CONTINUOUS	15' 0.24	.22/1.94
1978	DAY OPERATIONS	ALL SHIFT	152	0.04	CONTINUOUS	15' 0.18	.10/1.94

Units of Measure: Gas or Vapor: ppm (Volume)
Cust (not Asbestos) or Mist: mg/Cubic Meter
Asbestos: No. of Fibers 5 micron cc of Air Sampled
Noise: Percent of Allowable Exposure

Time-Weighted Average (TWA): $\frac{\text{The sum of hours in each area} \times \text{average exposure for each area}}{\text{Total duration of samples}}$

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