Reading File
January-February, 1976

UNION CARBIDE

Mr. Robert S. Clark
Technical Center
South Charleston
Bldg. 770-201

January 30, 1976

Medical Department

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Numerical Cbd Ord r
For Volume 38

Dear Mr. Clark:

We recently received a listing in numerical code order of the current methods for the Industrial Hygiene Handbook. Please be advised that the following methods are missing in our handbook.

Method No.	Partial Title
38C-1P4-R2b	Sulfur dioxide
38C-1P4-R2.1a	Sulfur dioxide
38C-2A2.40-R2	Vinyl acetate
38C-9C1-R2b	Vinyl chloride
38C-10X2-R2.1	Particulate & organic matter
38C-10X2-R2.2	Particulate matter
38C-10X2-R2.3a	Particulate fallout
38C-19B1-R2.2	Dimethylformamide
38C-22S4-R2	Tetramethylsuccimonitrile
38C-22T1-R2	Acrylonitrile
38C-29B82-R2	Lead
38C-29F1-R2	Sulfuric acid mist
38C-27P1-R2	Cobalt carbonyl
38C-U1A15-R2a	Carbaryl (SEVIN)
38C-Y4A-R2	3,4 Benzopyrene
38C-11A1-R3	ETHYLENE GLYCOL

Very truly yours,

C. U. Dernehl, M. D.
Associate Corporate Medical Director

CUD:lm

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UNION CARBIDE

Mr. J. H. Skahill
Battery Products Division
1205 Broadway
Red Oak, Iowa

January 23, 1976

Medical Department

Mr. R. Christie/Mr. T. Burke
Mr. E. Domokos
Mr. E. F. Griffin
Mr. G. L. Harshaw
Mr. P. J. Kennedy
Dr. J. J. Welsh/Dr. K. S. Lane

Industrial Hygiene Survey;
Red Oak - December 10-11, 1975

BUSINESS CONFIDENTIAL

Dear Mr. Skahill:

A routine periodic industrial hygiene survey was conducted at the Red Oak plant on December 10-11, 1975. All plant areas were inspected, and air samples were collected for airborne dusts, fumes and vapors. These air samples were analyzed for total dust, arsenic, manganese, lead, vinyl chloride monomer, perchlorethylene and methyl isobutyl ketone (MIBK).

This second set of air samples collected here for arsenic analysis yielded results which were quite comparable to those of the first set. The results of air samples collected for approximately 6½ hours each on a Mix Screener and a Ceramic Molding Machine Operator showed a time-weighted average exposure of less than 0.001 mg/M^3 to arsenic. Thus, each of the 4 shift-length air samples collected in this mixing and forming area during 1975 gave results of less than 0.001 mg/M^3 as the time-weighted average concentration for exposure to airborne arsenic. This is less than 0.2% of the existing OSHA standard for arsenic, and less than 50% oven of the proposed new threshold limit value.

The time-weighted average concentrations for the exposure of the Mix Screener and the Ceramic Molding Machine Operator to airborne manganese dusts were 0.30 and 0.29 mg/M^3, respectively. Thus, the average exposure measured here during 1975 for each of 3 job classifications (also Mix Operator) was less than 10% of the threshold limit value for manganese in workroom air.

A personal air sample was collected for approximately 6 hours on one of the operators on the finishing line. This gave a time-weighted average concentration for lead of less than 0.004 mg/M^3. This calculates to be less than 2% of the existing threshold limit value for lead in workroom air. This was the only such sample collected here for lead analysis during 1975.

The exposure to total dust and fume continues to be acceptably low at operations in the Red Oak plant. During this visit the time-weighted average exposures to total dust and fume for the Ceramic Molding Machine Operator, Mix Screener, and Finishing Line Operator were 2.09, 1.71, and 0.06 mg/M^3, respectively.

The air sample collected for approximately 7-hours (12/10/75) on the Extrusion Machine Operator contained less than 0.05 parts per million (by volume) of vinyl chloride monomer. Thus, none of the air samples collected on this operator has ever contained as much as the OSHA action level of 0.5 parts per million (by volume) of vinyl-chloride monomer as a time-weighted average concentration.

During the afternoon of 12/10/75, spot air samples were collected for perchlorethylene in the aisle beside both the Blakeslee and the Phillips Degreasers. No concentration as high as 10 parts per million (by volume) was found. This indicated that the local exhaust ventilation systems of both degreasers were functioning properly.

A personal air sample, collected on the Roll-Coat Operator during the day shift on 12/11/75, gave a time-weighted average concentation of 90 parts per million (by volume) for methyl isobutyl ketone in workroom air. Spot air samples, collected both forenoon and afternoon on this same day, had indicated 100 ppm (the OSHA TLV) as the concentration at the time of each sample. Additional shift length air samples are needed here to better evaluate the concentrations of both MIBK and toluene to which this operator is exposed.

I greatly appreciate the courtesies extended to me during my visit. If I can be of further assistance, please let me know.

Very truly yours,

E. G. Brown
Industrial Hygienist

EGB/eg
Enclosures

UNION CARBIDE

Total Dust and Fume
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	Concentration mg/M3*	Remarks
Mix Screener	1.93	Personal Sample, 12/10/75, A.M. 3 hrs., 36 min.
Mix Screener	1.44	Personal Sample, 12/10/75, P.M. 2 hrs., 56 min.
No. 5 Cramic Molding Machine Operator	2.88	Personal Sample, 12/10/75, A.M. 2 hrs., 45 min.
No. 5 Cramic Molding Machine Operator	1.49	Personal Sample, 12/10/75, P.M. 3 hrs., 38 min.
Operator on Finishing Line	0.06	Personal Sampl , 12/11/75, A.M. & P.M. 6 hrs., 5 min.

* The threshold limit value for carbon black is 3.5 milligrams per cubic meter of workroom air (OSHA-1975). No more than 5-10% of the above total dust and fume should be acetylene black.

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Vinyl Chloride Monomer
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	VCM ppm*	Remarks
On person of extrusion machine operator	0.05	12/10/75, A.M. & P.M. 6 hrs., 56 min.

* The current OSHA standard for vinyl chloride monomer in workroom air is 1 part per million (by volume) as an 8-hour, time-weighted average concentration.

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Manganese
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	Manganese mg/M^3	Remarks
Mix Screener	0.32	Personal Sample, 12/10/75, A.M. 3 hrs., 36 min.
Mix Screener	0.28	Personal Sample, 12/10/75, P.M. 2 hrs., 56 min.
No. 5 Cramic Molding Machine Operator	0.35	Personal Sample, 12/10/75, A.M. 2 hrs., 45 min.
No. 5 Cramic Molding Machine Operator	0.25	Personal Sample, 12/10/75, P.M. 3 hrs., 38 min.

* The threshold limit value for manganese in workroom air is 5 milligrams per cubic meter (OSHA-1975). This is a ceiling value, not to be exceeded.

Arsenic
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	Arsenic mg/M^3*	Remarks
Mix Screener	< 0.001	Personal Sample, 12/10/75, A.M. 3 hrs., 36 min.
Mix Screener	< 0.001	Personal Sample, 12/10/75, P.M. 2 hrs., 56 min.
No. 5 Ceramic Molding Machine Operator	< 0.001	Personal Sample, 12/10/75, A.M. 2 hrs., 45 min.
No. 5 Ceramic Molding Machine Operator	< 0.001	Personal Sample, 12/10/75, P.M. 3 hrs., 38 min.

* The threshold limit value for arsenic in workroom air is 0.5 milligrams per cubic meter (OSHA-1975); however, NIOSH has recommended that this TLV be lowered to 0.002 mg/M^3. This is due to the discovery of increased lung cancer deaths among arsenic workers at Dow Chemical Co. and Allied Chemical Corp.

Lead
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	Lead mg/M3*	Remarks
Operator on Finishing Line	0.004	Personal Sample, 12/11/75, A.M. & P.M. 6 hrs., 5 min.

* The threshold limit value for lead in workroom air is 0.2 milligrams per cubic meter.

Perchlorethylene
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	Perchlorethylene ppm*	Remarks
Breathing level in aisle beside smalll Phillips Degreaser	< 10	P.M. 12/10/75
Breathing level in aisle beside large Blakeslee Degreaser	< 10	P.M. 12/10/75

* The threshold limit value for perchlorethylene in workroom air is 100 parts per million (by volume) (OSHA-1975).

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Methyl Isobutyl Ketone
UNION CARBIDE CORPORATION
Battery Products Division
Red Oak, Iowa

December 10-11, 1975

Location	MIBK ppm*	Remarks
Paint Room		
On person of roll-coat operator	90	Personal Sample, 12/11/75, A.M. & P.M.
Near center of room	100	Spot Sample, 12/11/75, A.M.
In corner by roll-coating operation	100	Spot Sample, 12/11/75, A.M.
Near center of room	100	Spot Sample, 12/11/75, P.M.
In corner by roll-coating operation	100	Spot Sample, 12/11/75, P.M.

* The threshold limit value for MIBK in workroom air is 100 parts per million (by volume) (OSHA-1975).

UNION CARBIDE

Mr. J. Alspaugh
Battery Products Division
P. O. Box 671
St. Albans, Vermont 05478

January 23, 1976

Medical Department

Mr. J. C. Brouillette
Mr. R. Christie/Mr. T. Burke
Mr. H. M. Holcombe
Mr. P. J. Kennedy
Dr. J. J. Welsh/Dr. K. S. Lane

Dear Mr. Alspaugh:

On January 7, 1976 air samples were obtained at case molding and O ring molding to determine what air-borne concentrations of vinyl chloride might be present from the use of PVC resins in these items.

At the case molding unit, the operator wore a personnel sampler during both the morning and afternoon segments of the shift. In neither case were vapors of vinyl chloride detected.

Operating difficulties were experienced with the O ring mold and two samples obtained at this location in the morning indicated 0.18 parts per million of vinyl chloride. The unit did not operate in the afternoon.

From these results and those taken in May of 1974, it is indicated that employees at these operationssare not being exposed to levels of vinyl chloride requiring further action.

In the future, additional samples may be obtained to ascertain that concentrations remain at these levels or lower.

If you have any questions, please let me know.

Very truly yours,

L. J. LaFrance
Industrial Hygienist

LJL/eg

UNION CARBIDE

Mr. D. Blankenship
Battery Products Division
Edgewater Laboratory
Box 6056
Cleveland, Ohio 44101

January 9, 1976

Medical Department

Mr. T. Burke
Dr. K. S. Lane

Dear Mr. Blankenship:

Would you please analyze the enclosed samples numbered S1, S6, SA2 and SA3 for total vinyl chloride monomer and report the results to me.

They are from the St. Albans Plant. Thanks.

Very truly yours,

L. J. LaFrance
Industrial Hygienist

LJL/eg
Enc.

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