

CODING FORM FOR SRC INDEXING

REVISED 10/15/86

Microfiche No.		
OTS0510373		
New Doc I.D.	Old Doc I.D.	
878216445		
Date Produced	Date Received	TSCA section
6/13/78	5/05/86	8D
Submitting Organization		
UNION CARBIDE CORP		
Contractor		
UNION CARBIDE RES DEPT		
Document Title		
WATER QUALITY DEVELOPMENT - BICMASS TOXICITY STUDIES WITH COVER LETTER DATED 050286		
Chemical Category		
2-BUTENAL (4170-30-3)		

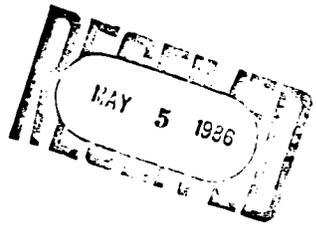
878216445



UNION CARBIDE CORPORATION OLD RIDGEBURY ROAD, DANBURY, CT 06817  
Corporate Health, Safety and Environmental Affairs Department

Certified Mail  
Return Receipt Requested

May 2, 1986



U.S. Environmental Protection Agency  
TSCA 8D1  
P.O. Box 2060  
Rockville, Maryland 20852

Subject: Union Carbide Corp. TSCA Sec. 8(d)  
Report, 40 CFR 716.6 & 716.7

Sirs:

With respect to:

40 CFR Secs. 716.6 & 716.7;  
Fed. Reg., Vol. 47, pp. 38791 and ff., Sept. 2, 1982;  
Amended Jan. 22, 1986,, 716.11(e) and 716.17(a) (13)  
and (c) (1).

Union Carbide Corp. herewith submits the following studies (attached) in response to the above-identified amendment to the state rule. These studies are on the following chemicals:

- 2-Butenal, CAS No. 4170-90-3;
- Hydroperoxide, 1-methyl-1-phenylethyl-, CAS No. 80-15-9;
- 1-Propaneamine, N-propyl-, CAS No. 142-84-7;
- 1-Propanol, 2-methyl-, CAS No. 78-83-1.

I. 2-Butenal.

I.a. Crotonaldehyde, Treatment of Accidental Spills, Union Carbide Project Report File No. 16663, Jan. 7, 1972, B. Pesetsky. 878216443

I.b. Range Finding Tests on Crotonaldehyde, Mellon Institute of Industrial Research Special Report 5-40, March 11, 1942, C.P. Carpenter. 878216444

I.c. Water Quality Development, Biomass Toxicity Studies, Union Carbide Project Report File No. 25171, June 13, 1978, G.T. Waggy et al. 878216445

I.d. Environmental Impact Product Analysis, Acute Aquatic Toxicity Testing, Union Carbide Project Report File No. 19133, Jan. 25, 1974, G.T. Waggy et al. 878216446

I.e. Environmental Impact Analysis, Product Biodegradability Testing, 878216447  
Union Carbide Project Report File No. 19751, Aug. 12, 1974, G.T. Waggy et al.

I.f. Mellon Institute of Industrial Research, Progress Report No. 11-52, 878216448  
March 29, 1948, H.F. Smyth, Jr., et al.

I.g. Mellon Institute of industrial Research, Progress Report No. 5-21, 878216449  
Jan. 31, 1942, H.F. Smyth, Jr., et al.

I.h. Mellon Institute of Industrial Research, Progress Report No. 4-87, 878216450  
Oct. 6, 1941, H.F. Smyth, Jr., et al.

II. Hydroperoxide, 1-Methyl-1-phenylethyl-

II.a. Cumene Hydroperoxide, Range Finding Toxicity Studies, Chemical 878216451  
Hygiene Fellowship Special Report 38-49, May 2, 1975, R.C. Myers et al.

III. 1-Propanamine, N-propyl-

III.a. Range Finding Tests on Di-n-propylamine, Mellon Institute of 878216452  
Industrial Research, Report No. 21-11, Dec. 31, 1957, C.P. Carpenter.

III.b. Same report as in item I.d. (above), entry in Table I for 878216446  
"Dipropylamine".

III.c. Same report as in item I.e. (above), entry in Table I for 878216447  
"Dipropylamine".

See also report I.d., Table V.

See also report I.e., Table I and Table II.

IV. 1-Propanol, 2-methyl-

IV.a. Range Finding Tests on Isobutanol, Mellon Institute of Industrial 878216453  
Research, Report No. 16-100, Nov. 17, 1953, C.P. Carpenter.

IV.b. Quantitative Aspects of Chemical Burns of the Eye, Mellon Institute  
of Industrial Research Report No. 9-11, Jan. 21, 1946, H.F. Smyth, Jr. 878216454

IV.c. Mellon Institute of Industrial Research, Progress Report No. 14-78, 878216455  
Nov. 23, 1951, H.F. Smyth, Jr., et al.

See also report I.d., Table IV and Table VII.

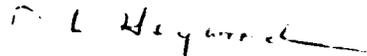
See also report I.e., Table I and Table II.

To the best of our knowledge, the above represents all the studies on the  
chemicals currently subject to reporting under the above-identified rule.

Should any additional studies come to our attention as the result of our file searches, we will advise the Environmental Protection Agency immediately. Where in some reports (attached and captioned above) an entry regarding confidentiality appears on the first page, that statement was entered solely for guidance of internal and external dissemination at the time of issuance of the report; Union Carbide asserts no claim of confidentiality for any of the information conveyed in this letter and in the attached reports. We hereby advise the Environmental Protection Agency, however, that the studies that were sponsored by Union Carbide Corporation are the property of Union Carbide for publication purposes.

Any questions regarding this report, or the testing or results therefrom, should be addressed through my office.

Very truly yours,



D.L. Heywood  
Assistant Director  
Product Safety  
203 794-5224

DLH:jsh

T. C.

BUSINESS CONFIDENTIAL

PROJECT REPORT

878216445

WATER QUALITY DEVELOPMENT  
BIOMASS TOXICITY STUDIES

AUTHOR: G. T. Waggy (2)  
Work by: J. R. Dawson  
G. T. Waggy  
SUPERVISOR: R. A. Conway (3)  
J. C. Hovious

DATE: June 13, 1978  
PROJECT NO.: 510A15  
FILE NO.: 25171

**SUMMARY** Any toxicity of Carbide process streams (and products) to biological waste-treatment systems needs to be established to aid in upgrading operation of such systems. Thirty-four chemicals which are or will be components of wastewater from Carbide Production plants have been evaluated by a growth-type biomass toxicity test procedure. These studies indicate that less than twenty percent of the materials tested would be acutely toxic to the biomass at concentrations below 100 mg/l. The materials showing the highest toxicity were metals, aldehydes, amines and possibly

The initial phase of this project involved selecting and modifying procedures which could be used to screen a large number of products or wastestreams. An existing 16-hour biomass toxicity test developed earlier by G. M. Alsop was finally selected with some modifications. Confidence in this procedure was developed as data on standards were reproduced and new data agreed well with available Warburg respirometer data, plant experience, or accepted literature values. Efforts to relate the indicated toxicity levels of the laboratory biomass growth test to laboratory-simulated biological treatment systems achieved only limited success. Acclimation, air stripping of the toxicant, differences in biomass concentrations, and temperatures make toxicity correlations very difficult. However, the synthesis type toxicity test offers toxicity measurements with a desirable safety factor.

The synthesis-type method is now being used to evaluate the toxicity of unit process wastewaters at Institute, Sistersville, Taft and Ponce plants as a part of the 1979 permit studies. It may be applicable to our Product Safety studies being planned for 1979.

TABLE III  
 SUMMARY OF BIOMASS TOXICITY TEST DATA (a)

<u>Material Tested</u>	<u>Indicated Toxicity Range, mg/l</u>
* Crotonaldehyde	25-50

(a) Reported data obtained using one of the methods shown in Table II.

v

00006

878216445

**CERTIFICATE OF AUTHENTICITY**

THIS IS TO CERTIFY that the microimages appearing on this microfiche are accurate and complete reproductions of the records of U.S. Environmental Protection Agency documents as delivered in the regular course of business for microfilming.

Data produced 1 7 87 Barbara Smith  
(Month) (Day) (Year) Camera Operator

Place Syracuse New York  
(City) (State)

