Reg. Chg. Concern

PLAINTIFF'S EXHIBIT
UC-871

UNION CARBIDE INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS • P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) See Attached Distribution
Division
Location

Date August 17, 1979

Originating Dept. Research & Development

Subject Summary of Status of EPA's Organic Air Emissions Control Program

RECEIVED
AUG 21 1979
T. L. DAWSON

A report summarizing the status of EPA's many activities relating to organic chemical emissions to the atmosphere is attached for your information. It was prepared by Monsanto and obtained through the Chemical Manufacturers Association.

D. C. Macauley

DCM/dq

Attachment

A23086

Published by AsbestosClaims.Law
asbestosclaims.law/library/16082/1

SUMMARY REPORT

VOLATILE ORGANIC COMPOUNDS

EPA AIR EMISSION CONTROL PROGRAM

By: N. B. Galluzzo
July, 1979

(Monsanto)

A23087

Published by AsbestosClaims.Law
asbestosclaims.law/library/16082/2

VOLATILE ORGANIC COMPOUNDS

EPA AIR EMISSIONS CONTROL PROGRAM

CONTENTS

	Page
Introduction	1
Part I - Engineering Control Options	2
Part II - EPA Source Performance Standard Program	
Section 111 - NSPS Program	5
Section 112 - NESHAPS Program	7
Part III - Control Technique Guideline Program	13
Part IV - Related Programs	
New Source Performance Standards	14
Control Technique Guidelines	15

A23088

VOLATILE ORGANIC COMPOUNDS

EPA AIR EMISSIONS CONTROL PROGRAM

INTRODUCTION

EPA's program for controlling Volatile Organic Compound (VOC) emissions from chemical industry sources involves concurrent efforts to issue:

New Source Performance Standards (NSPS)
National Emissions Standards for Hazardous Air Pollutants (NESHAPS)
Control Techniques Guidelines (CTG)

The current emphasis is on controlling VOC emissions from the Synthetic Organic Chemicals Manufacturing Industry (SOCMI), per the following format:

SOCMI	Document and Estimated Issuance		
Emission Source	NSPS	NESHAPS	CTG
Storage	1981	1981	1981
Fugitive	1981	1981	1980
Secondary	NA	NA	NA
Air Oxidation	NA		NA
Vacuum Systems	NA		NA
Product Drying	NA		NA
Benzene - Maleic Anhydride		1980	
Benzene - EB/Styrene		1981	
Benzene - Storage		1981	
Benzene - Fugitive		1981	
Acrylonitrile	NA	NA	1980
Formaldehyde			1980
Other		NA	

Notes:
1. Where "NA" is noted, this indicates that the estimated timetable is Not Available; however, final SOCMI NSPS issuances are scheduled for mid-1982. Where a space is left blank, no issuance is planned.
2. Acrylonitrile is high priority for either NESHAPS or NSPS, with the issuance form not decided to date.
3. "Other" high priority chemicals for NESHAPS are ethylene dichloride, perchloroethylene and trichloroethylene, and for CTG are ethylene dichloride and ethylene/propylene.

A23089

Published by AsbestosClaims.Law
asbestosclaims.law/library/16082/4

1. Draft reports on Storage (& Handling) and Fugitive Emissions have issued. (Note: Handling and transfer emissions will be eliminated in future versions of the storage document, apparently because of the difficulty in quantifying such emissions.)

2. The draft report on Secondary Emissions (e.g., from waste treatment facilities) is due for completion in the 3rd Quarter, 1979.

3. Draft reports on three key unit operations will issue shortly as follows:

Air Oxidation	Early 3rd Quarter, 1979
Vacuum Systems	Late 3rd/early 4th Quarter, 1979
Product Drying	No timetable available

Copies of all Hydroscience initial draft reports are sent to industry factors, to the Chemical Manufacturers' Association (CMA), and to EPA regional office for information and comments. The "final draft" copies, to be prepared starting the 3rd Quarter, 1979, will take into account all comments received and considered valid and also be distributed to the above parties for final review. Presumably the "final" reports which will eventually issue, will incorporate any additional significant comments made on the "final draft" copies.

A listing of all the Hydroscience draft documents issued and those believed scheduled to issue, is attached.

A23099C

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Organ... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 5 of 13 asbestosclaims.law/library/16082/5

VOLATILE ORGANIC COMPOUNDS

EPA AIR EMISSIONS CONTROL PROGRAM

Part II - EPA Source Performance Standard Programs

Section 111 NSPS Program

EPA does not plan to issue any NSPS regulations for specific chemical products/processes under Section 111 of the Clean Air Act. The Hydroscience reports are serving as the basis for a generic approach to NSPS for the SOCMI.

The present timing estimated by EPA for the NSPS and the contractors involved are as follows:

NSPS	Regulations in FR		Contractors	
Emission Source	Proposed	Final	Econ. Eval.	Regulation
Storage	6/80	3/81-6/81	RTI	TRW
Fugitive	6/80	3/81-6/81	RTI	R
Secondary	--	--	EEA	EEA
Air Oxidation	1/81	--	EEA	EEA
Vacuum Systems	--	--	EEA	EEA
Product Drying	--	--	EEA	EEA

Notes: 1. Where proposed and final regulation timing are not indicated, EPA estimates are not available to date.

2. Contracts have been let out for both economic evaluation studies and for preparation of the regulation drafts. As shown these are: RTI (Research Triangle Institute), TRW (TRW, Inc.), R (Radian Corporation) and EEA (Energy and Environmental Analysis, Inc.).

Radian Corporation is developing a program to quantify fugitive emissions and the effect of the proposed EPA control program on the magnitude of the emissions release. Tests on fugitive emission leak points would be conducted, maintenance performed, and a determination made of the change in emission level following maintenance and thereafter, over an extended time period. EPA is expected to propose a cooperative effort with selected CMA member companies; this would require maintenance and technical involvement on industry's part. The tentative timetable for this proposed program is:

Initiate field studies	October, 1979
Complete field program	March, 1980
Issue report	June, 1980

A23091

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Organ... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 6 of 13 asbestosclaims.law/library/16082/6

Section 112 NESHAPS Program

The Strategic and Air Standards Division (SASD) has been working for some time on an EPA Cancer Policy. Formal issuance of a draft policy is now targeted for the 3rd or 4th Quarter, 1979.

Concurrently SASD requested risk assessments from the Carcinogen Assessment Group (CAG) of EPA's Office of Research and Development (ORD) on a number of chemical substances. The total list of Chemicals Under Assessment by EPA is attached, together with indications received todate of the risk assessment schedule and generic BAT priority. Further comments on the attached table are:

1. The table includes the so-called List of 43 Chemicals Under Assessment, as well as the following metals and other substances under study at various times:

Arsenic	Coke oven emissions
Asbestos	n,n-Diethyl nitrosamine
Benzene	Mercury
Beryllium	1-Naphthyl amine
Cadmium	Polycyclic organic matter
	Vinyl Chloride

2. The risk assessment schedule is only tentative, as it represents the timing desired by SASD. We understand that the CAG does not expect to be able to meet this plan. Where specific dates are indicated, reports have already issued.

3. The distinction between Type I and Type II risk assessments is:

   Type I - short, preliminary analyses

   Type II - more detailed analyses which, in the past, have been made before specific emission standards have been adopted.

4. The priority chemicals under consideration by SASD for NESHAPS regulations, as noted on this list, are:

Acrylonitrile	Ethylene dibromide
Arsenic	Ethylene dichloride
Benzene	Methyl iodide
Carbon tetrachloride	Perchlorethylene
Coke oven emissions	Trichloroethylene
Ethylene oxide	Vinylidene chloride

5. The attached list was received in the 1st Quarter, 1979.

A23092

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Organ... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 7 of 13 asbestosclaims.law/library/16082/7

EPA has issued a draft copy of a proposed NESHAPS generic regulation covering Section 112 Fugitive emissions, for preliminary comments by industry and environmental groups (i.e., EDF). The monitoring, maintenance and repair procedures therein are similar to those under consideration by EPA for inclusion in Section 111 NSPS plus CTG Fugitive emissions documents - except that the proposed attainable emissions from each leak point have been reduced ten-fold to 1000 ppm(v).

The issuance of NESHAPS generic emission regulations has tentatively been set as follows:

NESHAPS	Draft	Regulations in FR		Contractors	
Emission Source	Document	Proposed	Final	Ec. Eval.	Reg.
Section 112 Storage	12/79	--	1981	RTI	TRW
Section 112 Fugitive	12/79	--	1981	RTI	R
Benzene Storage	12/79	--	12/81	--	TRW
Benzene Fugitive	12/79	--	4th Q 1981	PES	PES

Notes:

1. Where proposed and final regulations are not indicated, EPA estimates are not available to date, although indications are for early to late 1981 Federal Register promulgation.

2. Contracts let out by EPA for economic evaluation are: RTI (Research Triangle Institute), TRW (TRW, Inc.), R (Radian Corporation), and PES (Pacific Environmental Services, Inc.).

3. EPA is believed active on Benzene Storage. Recently a draft report Measurement of Benzene Emissions from a Floating Roof Tank was issued for industry comment.

4. Refinery Benzene Fugitive NESHAPS regulations are targeted for Federal Register promulgation by early 1981. PES is the contractor for this as well as for the SOCMI Benzene Fugitive documents noted above.

A23093

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Organ... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 8 of 13 asbestosclaims.law/library/16082/8

BENZENE EMISSIONS EX BENZENE DERIVATIVES OPERATIONS

EPA WORK PLAN

(Reference: Discussions at EPA-RTP, 6/11-6/12/79)

Summary

Issuance of EPA regulations covering benzene emissions from maleic anhydride and ethylbenzene/styrene operations is high priority. Regulations covering other benzene derivatives, and possibly specifically benzene fugitive and storage emissions, are lower priority, and timetable at this stage is dependent on timing of the EPA generic cancer policy.

For the proposed maleic anhydride regulation, the benzene emissions limit for existing facilities will probably be relaxed, but the zero benzene requirement for new facilities will remain. The maleic anhydride process is considered by EPA to offer a unique opportunity to force use of substitute raw materials. Extension on a broad scale to other processes (e.g., ethylbenzene/styrene) is not expected but undoubtedly EPA wants to establish the principle of inserting substitute raw material provisions in regulatory proposals, if they deem fit.

The whole benzene issue will be aired publicly, if EPA succeeds in issuance of a proposed maleic anhydride regulation.

Maleic Anhydride (MA)

A new package will be completed by EPA-RTP within the next several weeks, for EPA Steering Committee review in 3rd Quarter, 1979. This package, which will also be sent to NAPTAC and to CMA members with MA facilities, will consist essentially of a revised draft of the proposed MA regulation plus several support documents relative to benzene exposure risks. The revised MA draft regulation is expected to include the following major points:

1. For existing facilities BAT will be defined as a numerical benzene emission limit of 0.10 kg/100 kg. benzene feed to the reactors (from 0.025 kg/100 kg. in the original MA draft and 0.05 kg/100 kg. indicated by EPA-RTP in March).

2. For new facilities and additions to existing operations, "beyond BAT", defined as zero benzene emissions, will be mandated. This in effect will force use of non-benzene feedstock.

Assuming general approval by the Steering Committee, as expected on this second go-around, the target is to obtain EPA-RTP administrative staff approval by end September/mid-October, and EPA-Washington staff approval by end-October. The goal at this stage is to publish a proposed MA regulation in the Federal Register by November, 1979.

A25654

VOLATILE ORGANIC COMPOUNDS

EPA AIR EMISSIONS CONTROL PROGRAM

Part III - Control Technique Guideline Program — PROGRAM HAS BEEN PLACED "ON HOLD" BY EPA

The Hydroscience reports are also serving as the basis for a selected number of Control Technique Guidelines (CTG). The CTG's will be prepared by EPA for potential use by States as they revise State Implementation Plans (SIP), and involve application of Reasonably Available Control Technology (RACT) to existing facilities. BECAUSE STATE S ARE SO FAR BEI

The present tentative schedule estimated by EPA for CTG issuance for the SOCMI is as follows:

Emission Source	Draft	Final
Storage	9/79	1/81
Fugitive	7/79	9/80-1/81
Secondary	--	--
Air Oxidation	→ (Generic Standard, DRAFT, Has Been Issued)	
Vacuum Systems	--	--
Product Drying	--	--
Formaldehyde	4/79	1/80
Acrylonitrile	4/79	1/80
Other Processes	--	--

Notes:
1. Issuance of CTG drafts on Secondary and Unit Operations is expected by end 1979 or early 1980, although dates are not set.
2. "Other Processes" tentatively include Ethylene Dichloride and Ethylene/Propylene. Draft CTG's may appear by end 1979.
3. The complete CTG program for the SOCMI is targeted for end 1980 completion.

The CTG documents prepared by EPA do not undergo any public review other than that forced upon the agency by trade associations and industry factors. Of concern is the potential utilization by States and Regional EPA offices of the "raw" Hydroscience reports, in the development of their SIP revisions and permitting programs, even if these are not formally labelled as CTG's.

Preliminary indications are that chemicals with a vapor pressure lower than kerosene may be excluded from the draft CTG for Fugitive emissions.

A23095

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Orga... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 10 of 13 asbestosclaims.law/library/16082/10

Draft product documents are tentatively slated to issue (date of release unavailable), from various contractors, on the following categories of interest to the chemical industry:

Ammonium nitrate	Phosphoric acid
Ammonium sulfate	Sodium carbonate
Urea	Ammonia
Hydrofluoric acid	Carbon black
Borax/boric acid	Gasoline additives
	Phosphate rock

Control Techniques Guidelines

Section 172(b)(2) of the 1977 Clean Air Act Amendments requires that SIP's submitted for each non-attainment area must provide for implementation of all Reasonably Available Control Technology (RACT) as expeditiously as practicable. In order to assist the States in defining RACT, EPA has established the CTG program. The reported EPA requirement is that States must develop regulations for the control of sources identified in the CTG documents within one year of issue.

The attached EPA Control Techniques Guidelines List for the categories of hydrocarbon sources for which CTG documents have issued or are presently scheduled to issue. Comments on this list are:

1. Group I represents the initial set of CTGs published by EPA, in time for inclusion by States in their SIP revisions which were due January 1, 1979 - for EPA approval by July 1, 1979. (Note: This SIP revision timetable has been delayed.)

2. Group II represents those categories for which CTGs were published or expected to be completed by end 1978, for inclusion in SIP revisions which would be due the following year.

3. Group III represents SOCMI CTGs not completed in 1978 and carrying over into 1979. (Note: In actual fact, no SOCMI (Stage I) CTGs were completed in 1978 and it is questionable whether any final SOCMI CTG documents will issue in 1979.)

4. Group IV represents those categories for which only screening studies have been initiated or for which no issue dates have been set.

5. The attached list was received in the 4th Quarter, 1978.

A23090

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Orga... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 11 of 13 asbestosclaims.law/library/16082/11

EPA CONTROL TECHNIQUE GUIDELINES LIST

Group I

Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks

Surface Coating of Large Appliances
Surface Coating of Metal Furniture

Surface Coating of Magnet Wire

Petroleum Refinery Vacuum Systems Wastewater Separators, and Process Unit Turnarounds

Gasoline Loading Terminals

Gasoline Bulk Plants

Fixed Roof Storage Tanks

Solvent Metal Cleaning (degreasing)

Cutback Asphalt Road Paving

Service Station Storage Tank Filling (Stage I)

Group II

Petroleum Refinery Fugitive Emissions

Surface Coating of Other Industrial Metal Products

Pharmaceutical Manufacture

Rubber Products Manufacture

Paint Manufacture

Vegetable Oil Processing

Graphic Arts (Printing)

Flat Wood Products

Service Station Auto Filling (Stage IIO

Floating Roof Storage Tanks

Ship and Barge Transport of Gasoline and Crude Oil

Organic Chemical Manufacture

Dry Cleaning

Wood Furniture Manufacture

Architectural and Miscellaneous
[illegible]ings

Group III

Organic Chemical Manufacture (Stage II)

Others

Natural Gas and Crude Oil Production

Natural Gas and Natural Gasoline Plants

Adhesives

Other Industrial Coatings

Auto Refinishing

A23097

Union Carbide trial exhibit UC-871: D. C. Macauley Transmitting Monsanto Summary Report on EPA Volatile Orga... Published by AsbestosClaims.Law
ACL Doc 16082 · Page 12 of 13 asbestosclaims.law/library/16082/12

DISTRIBUTION

J. I. Apse, 312
J. R. Barber, 525
R. W. Beisner, 511
D. C. Best, 511
R. L. Boysen, 312
G. L. Brown, 511
K. F. Butwell, 525
J. C. Chaty, 511
J. M. Davison, 511
T. L. Dawson, 511
J. R. Estabrook, 312
P. E. Fritze, 312
J. R. Gagnon, 511
N. W. Gaines*, 511 (3005)
R. A. Gregory, 312
R. H. Handwerk, 312
D. E. James, 312
E. L. Jarrett, 511
J. B. Johnson, 511
T. R. Jones, 312
G. R. Kamm, 511
G. T. Kwiatkowski, 312
K. F. Liu, 511
J. W. Lynn, 312
F. P. Macfarlane, 511
S. P. Sawin, 511
P. D. Sherman, 511
D. W. Simroth, 511
J. F. Tancredi, 511
L. F. Theiling, 511
R. Van Cleve, 511
R. Van Mynen*, NYO-21
G. M. Whipple, 511
C. E. White, 312
W. E. Whitehurst, 511
P. H. Wadia, 511
P. F. Wolf, 525

*Letter only

A23098