



A Division of The Society of The Plastics Industry, Inc.

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JUL 13 '88

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July 12, 1988

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TO: The VI Health, Safety & Environment Committee and File: VI
Additional Attendees of the June 29th Meeting

X-F: _____

RE: OSHA PEL Revisions/Ethylene Dichloride

BACKGROUND

The Occupational Safety and Health Administration proposed June 7th a rule to amend its existing air contaminant standards or set new standards for approximately 400 substances. Relative to EDC, the proposed rule would adopt the NIOSH REL of 1 ppm (with a 2 ppm ceiling) or as an alternative the 10 ppm ACGIH level as a replacement for the current PEL of 50 ppm. The cited bases for this proposed change are two 30-year old studies.

VI Meeting

A special meeting of VI member company representatives was convened on June 29th. After substantial discussion, it was decided that the Vinyl Institute comments focus on challenging OSHA's health basis for reducing the PEL from current allowed levels. The group after considering the known available health effects information was not aware of any health justification for lowering the PEL.

The group concluded that being regulated to 1 ppm or 10 ppm would have a significant economic impact as related to providing engineering controls and have an adverse impact on productivity, primarily associated with plant maintenance and turn-around activities. While there was no disagreement on voluntarily operating within the ACGIH levels, there was concern expressed about such levels being prescribed by OSHA regulation.

Review and Comment

We are informed that CMA plans to comment on the overall OSHA proposal with specific comments on certain chemicals including EDC. With regard to EDC, it is our understanding at this time that CMA comments will endorse reducing the regulatory level

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from the current 50 ppm to ACGIH level of 10 ppm. Attached are the pertinent sections of the comments (Health Issues and Feasibility Issues) for your review. (Note the meeting attendees. Changes on the health section have been prepared by Bob Hinderer). The final comments will, of course, include cover letter describing the VI and a summary of the position taken. We request your support of the approach taken in these comments and ask that you communicate your company's view on this position to your representative on the CMA-EDC panel. Please note that as the comment deadline is July 25th, I would appreciate any comments on the attached by July 20th.

Meredith N. Scheck

Meredith N. Scheck
Assistant Director

MNS/pmb
enclosure

Distribution:

HSE Committee
J. Robinson, BFG
J. Shepherd, BFG
R. Hinderer, BFG
R.F. Adams, OxyChem
A.L. Sepeda, OxyChem
C. Graybill, PPG
S. Reynolds, Borden
K. Travis, BFG
T. Robinson, Vulcan (guest)

ETHYLENE DICHLORIDE H.S. NUMBER 1168

Feasibility Issues

A typical U.S. facility manufacturing ethylene dichloride (EDC) is associated with the production of vinyl chloride monomer. A 1500 ton per day vinyl chloride monomer plant will produce approximately 2400 tons per day of EDC. The typical EDC/VCM facility consists of two EDC production steps and a VCM production step. The EDC production steps include direct chlorination and oxychlorination which are followed by EDC purification and storage. VCM is produced by thermal cracking of EDC to VCM and HCl. During VCM purification, uncracked EDC is recycled to EDC purification and HCl is sent to oxychlorination for additional EDC production.

In order to comply with the proposed regulation in a typical EDC/VCM plant, it would be necessary to make major capital investments. Some of the areas where modifications are anticipated include tank farm vent controls, sample gathering and laboratory techniques, process sewer systems, additional employee exposure monitoring, loading/unloading operations and maintenance expenses. The estimated total initial capital expenses for compliance will be in the order of \$10-25M. The additional annual expense to maintain this compliance is estimated to be \$4-5M.

Extrapolating typical plant expenditures to the domestic vinyl industry as a whole, the initial capital expense for the industry to comply with the proposed regulations is \$160-400M. In addition to the initial expense, the annual expense to maintain industry compliance would be \$60-80M. This level of expenditures for compliance will place significant economic burdens on the domestic vinyl industry.

In addition to initial capital costs and annual expenses, plant capacity will be significantly impacted by the proposed regulations. The regulations will require the cleaning of process equipment sufficiently to meet a severely-reduced EDC exposure limit prior to performing any maintenance. Pure EDC itself requires long purge/evacuation cycles to eliminate it. This will add significantly to the time essential equipment is down for maintenance. However, in almost all cases, EDC is associated with heavier materials, including solids, that make cleanout of closed process equipment extremely difficult. Purging cycles on the order of days will be required in many instances of severe equipment pluggage. It is estimated that additional purging time will reduce EDC (and therefore VCM)

plant capacity by approximately 10% in the early years of the reduced exposure limit. This will result in an average sales loss of \$20-30M for the typical EDC/VCM plant. This represents a sales loss of approximately \$320MM to \$480MM for the VCM industry. In many instances, there is no feasible method to clean severely plugged process equipment prior to opening. This equipment simply must be opened, removed, and the pluggage removed directly by properly protected personnel.

D R A F T

HEALTH ISSUES

- OSHA is proposing to lower the existing workplace standard for EDC from 50 ppm to 1 ppm without any valid scientific support and without a critical review of the literature.

In its June 7, 1988 proposal (FR vol. 53, No. 109. pp. 21052) OSHA states that it is necessary to reduce its current limits for EDC to reduce health risk(s) and proposes that the standard be lowered to 1 ppm (8 hr TWA) with a 2 ppm STEL. Although the Agency acknowledges a concern about carcinogenicity, the primary basis for the proposed change is two 30-year old reports in the foreign literature of hepatotoxicity, nervous system effects, and blood changes in workers.

It is not clear why after 30 years OSHA suddenly believes that two Eastern European articles have gained such weight as to support a change in the OSHA workplace standard. Furthermore, it is particularly puzzling how OSHA can use these references to support its proposal when it has not even obtained translations (no translations were available in the Docket as of 6/27/88; we were told that OSHA was considering efforts to obtain translations). These facts suggest a lack of critical review in developing this proposal for EDC. Without such critical review of these studies and all of the literature it will be impossible for OSHA to demonstrate that this or any proposal has a valid scientific base.

In proposing a standard for EDC based on the studies of Kozik (1957) and Brzozowski et al (1954), particularly without critical review, OSHA has failed to note the significant findings and limitations of these studies.

The descriptions of the Brzozowski et al (1954) and Kozik (1957) studies by NIOSH (1976) provides some evidence that worker exposures were high. Although the highest area sample in the former study was reported as 60 ppm during the pouring of EDC into a bucket, it is clear that exposures were gross, primarily due to skin absorption. The authors report workers breathing extremely close to barrels during pouring, spills on clothing and shoes, unchanged contaminated clothing, and the use of EDC to wash their skin indicating that actual exposures were much

and by routes other than inhalation.

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higher than predicted by the limited environmental sampling. The study by Kozik (1957) also indicated that workers were employed in occupations where there was significant potential for dermal exposure. It is unfortunate that the contribution of absorption via the skin was not assessed. Because no information was provided on the nature of the sampling (personal versus area monitoring) or the analytical methods used and because skin exposure may have contributed significantly to total exposure, it is not possible to give much weight to the reported concentrations as an indication of actual exposure. Furthermore, there is no information regarding other chemicals were used in this operation.

what
other?

The studies of Kozik and Brzozowski noted above also constitutes the known published exposure studies relative to chronic exposure in humans and the deficiencies of these studies do not provide clear evidence of chronic toxic effects at the reported levels of EDC in air. These studies do not take into consideration the exposures received via dermal absorption and it is most likely that any health effects attributable to chronic exposure are due to the combined inhalation and dermal exposures. Consequently, the reported health effects are the result of much higher exposures than reported by the authors. Accordingly, there is no justification for OSHA to propose PEL of 1 ppm on the basis of chronic toxic effects.

More recently, studies of the chronic effects of the inhalation of EDC by rats and mice were reported by Spreafico et al (1980). Clinical chemistry, hematology, and urinalysis were conducted on both young and old animals which were exposed to concentrations of EDC up to 150 ppm for as long as 26 months. Although an elevation of SGOT levels was noted in mature rats exposed to 50 and 150 ppm for 12 months (age 14 to 26 months), no evidence of any chronic changes was observed in adolescent animals exposed for most of their life span (from age 3 to 21 months).

The significance of the elevation of SGOT levels in animals exposed during the later part of their life span is highly questionable. The absence of evaluations at other time points does not allow one to eliminate the possibility that this is a random response. However, even if this elevation is compound-related, the relevance to workers is not clear. No chronic effects are evident in the younger groups which were exposed to the approximate human equivalent of age 65.

- Toxicology studies indicate that EDC is a weak carcinogen and that the potential cancer risk to man is low.

Early studies of McCann et al (1975) reported that EDC was "an extremely weak mutagen" using the Ames assay. Subsequent studies by Rannug et al (1978) also showed that EDC was mutagenic in bacteria. These studies pointed out that Glutathione (GSH) was a critical factor necessary for mutagenicity.

In the mid 1970's, the National Cancer Institute initiated a study to evaluate the carcinogenic potential of EDC (NCI, 1978). Rats and mice were force-fed EDC in corn oil at concentrations as high as 150 and 200 mg/kg, respectively. In these studies, evidence of cancer was observed in both rats and mice. The response in these studies strongly suggested that EDC posed a significant risk to man.

Shortly after these results became available, Maltoni et al (1980) reported that long-term inhalation studies with rats and mice failed to show any evidence that EDC was carcinogenic. These results suggested that route of exposure could have a significant effect on the actual cancer risk posed by EDC. Furthermore, it indicates that the actual risk posed by EDC is much lower via inhalation than that posed by force-feeding.

More recently, Klaunig et al (1986) has also reported that route of exposure is critical in determining the actual risk posed by EDC. In carcinogenicity studies of a number of chlorinated hydrocarbons, the authors found that EDC did not cause cancer in mice via drinking water. This finding was important not only because the dose received via drinking water was higher on a weekly basis, but because the total dose was also higher.

The results of Maltoni et al (1980) and Klaunig et al (1986) are important because the absence of carcinogenic responses here are in stark contrast to that by force-feeding even though the weekly and or total dose are equal to or higher than received in the NCI studies (1). Interestingly, in vivo studies of genotoxicity via different routes of exposures appear to support these observations. Storer et al (1984) reports that EDC causes hepatic DNA damage in mice by oral exposures, but not when animals were exposed by the inhalation route. The authors conclude that their "results provide additional evidence for the importance of a route of exposure effect in the in vivo genotoxicity and carcinogenicity of DCE".

There are a number of factors which probably contribute to this dramatic difference in carcinogenic response. One of the most important reasons may be the differences in primary metabolic pathways. NAS (1987) reports that metabolism of EDC occurs primarily via cytochrome p 450 by the inhalation route while metabolism following ingestion primarily involves GSH. This difference in metabolic pathways may be a very important determinant in the carcinogenicity of EDC. Rannug et al (1978) reports that GSH is required for mutagenic activity in bacterial systems and Boyd et al (1979) reports that GSH is present in high concentrations in the forestomachs of rodents. Given the potential importance of GSH in gastric metabolism of single massive doses of EDC during forced-feeding and its apparent importance in mutagenicity, such species and route differences are likely to have a major impact on human cancer risk assessment of EDC.

This data provides strong evidence that the results of the NCI cancer bioassay are not good predictors of the response to be expected in man. They indicate that the carcinogenic response is the result of the route of exposure and a species specific difference. Furthermore, the studies by Condie (1985) which show that the hepatotoxicity of carbon tetrachloride is enhanced by corn oil provides additional evidence that the carcinogenic response in the NCI studies are closely tied to the specific conditions of exposure.

- (1) 1.2 mg/lg weekly dose was determined for Maltoni et al (1980) assuming an average minute volume of 35 ml/min and an average body weight of 35 g.

HEALTH ISSUES SUMMARY

1. The OSHA proposal of 1 ppm for EDC lacks scientific support and critical review of the literature.
2. The studies of Brzozowski and Kozik do not provide evidence of chronic effects from EDC at low levels because of high dermal exposure and inadequate reporting.
3. The absence of a carcinogenic response via drinking water and inhalation and the differences in metabolic pathways between routes of exposure indicate that the NCI results over-predict the potential carcinogenic risk of EDC to man.

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minutes

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HEALTH, SAFETY & ENVIRONMENT COMMITTEE

Princess Resort Hotel
Scottsdale, Arizona

Wednesday
May 11, 1988
1:00 p.m.

Attendees:

W. C. Holbrook, BFGoodrich, Chairman
C. Lunn, Borden Chemicals & Plastics
R. Oubre, Dow Chemical
F. Fisher, Air Products
R. Luss, Occidental Chemical
P. J. Usinowicz, Air Products
C.A. Gellner, CertainTeed
B. Gholson, Georgia Gulf
P. de la Cruz, Keller and Heckman
M.A. Voison, BFGoodrich Canada
W.A. McClain, Vista Chemical
J.C. Ledvina, Vista Chemical
E. Schroeder, Shintech Inc.
M. N. Scheck, Vinyl Institute

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Opening of Meeting

Committee Chairman, W.C. Holbrook convened the meeting at 1:00 p.m. and asked for self-introductions.

Safety Subcommittee

Cris Lunn, who had volunteered at the committee's March 8th meeting to assume the chairmanship of a new Safety Subcommittee, distributed a paper outlining short-term goals, objectives and some suggested activities. In opening comments, Mr. Holbrook noted that he believed the long range goal should be to improve the vinyl industry's safety record and noted that the industry in total has much to gain by supporting program(s) that may improve safety performance. The committee had a brief discussion on the variety of programs that exist within individual companies. Mr. Ledvina stated that he thought the VI programs should not be duplicative of activities of other organizations. Mr. Luss suggested that an appropriate activity for a trade association would be the convening of a safety conference.

Mr. Holbrook suggested that a small group of interested individuals meet prior to the next meeting to develop a mission

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statement and develop some recommendations for short-term activities with a proposal to be received by the full committee. (Mrs. Scheck was asked to arrange for a meeting of this work group on June 29th in Baton Rouge). Mr. Holbrook suggested that a matter of old business, the calculations used in determining the VI Safety Performance Awards, be delegated to this subcommittee for review.

Title III

A company-by-company review of activities being undertaken to comply with the reporting provisions of SARA Title III. A question and answer period followed. It was noted that in some geographic areas companies are working alone with the local community, while in areas with a large chemical industry presence, joint programs are underway. It was noted that at the committee's next meeting it would be appropriate to have a company-by-company review of experiences since the July 1, 1988 reporting deadline. In order to achieve a total industry figure of amounts reported under this first deadline, Mrs. Scheck was directed to send out a notice to the committee requesting the numbers reported for calendar year 1987. Mr. Holbrook stated that this information is to be otherwise available under the FOI Act.

SPI v. EPA

Mr. de la Cruz stated that the EPA General Counsel's office and the Justice Department had both "signed off" on the settlement language. He stated, however, that the staff of the EPA's Air Office noted that a time limit had applied to this process and that the actions by the OGC had occurred following the expiration of this time limit. Mr. de la Cruz noted that he is hopeful that this problem can be remedied in the near future.

TCLP

Mr. Ledvina stated that the TCLP is to be published as a reproposal during June and noted that the numbers may change and further, that it is expected that 48 additional materials may be added. Mr. Usinowicz stated that it is his understanding that a revised analytical procedure is to be published within the next few weeks.

HRS Revisions

Mr. Holbrook stated that it is his understanding that the revisions to the Hazard Ranking System have been through "red-border review" and are at OMB. Mr. Holbrook asked whether there

was interest among the committee members in reviewing the HRS revisions when published. Mr. Luss suggested that CMA is the appropriate lead and that activity should be coordinated with them.

State Federal Enforcement Update

The committee had a company-by-company review of recent enforcement activities. Mr. McClain noted that Covington and Burlington has maintained a library on consent decree information and that this was offered to the ABA Natural Resources Committee. He offered to provide Mr. Holbrook with the appropriate contact for any possible future interest/use.

OSHA Labeling

Mr. de la Cruz updated the committee on a recent citation received by Occidental for failure to warn under the OSHA Hazard Communication Standard. Mr. Luss noted that as of May 10th the company received a 30 day extension.

Mr. Luss also reviewed the discussion at the March 10, 1988 Executive Board Meeting that had resulted in the labeling practices survey. He noted that the Legal Committee had previously discussed developing a generic MSDS and noted that the committee would re-examine the labeling issue at its May 12th meeting.

Proposition 65

Mr. de la Cruz updated the committee on recent developments related to Proposition 65, including a March 16, 1988 memo to the State Department of Health Services from the California Health and Welfare Agency requesting that DHS review existing state and federal risk assessment for 49 listed chemicals, with a proposed timetable for completion of the review (7/1/89). According to this memo, the first part of the assessment for 9 chemicals is due 7/1/88, with 23 more chemicals (including vinyl chloride) due 10/1/88.

Toxicological Profile

Mrs. Scheck stated that the VI comments on the ATSDR draft toxicological profile for vinyl chloride issued under SARA 110 (52FR338340) were filed April 18th. She noted that these were previously distributed to the committee members.

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ORC Emergency Planning Guidelines

Mrs. Scheck noted that at the committee's September 30, 1987 meeting, a discussion was held on work underway by ORC (Organization Resources Counselors, Inc.) to develop on behalf of the American Industrial Hygiene Association Emergency Response Planning Guidelines. She updated the committee on the status of the project and noted continued interest on behalf of ORC to have vinyl industry involvement. There was consensus among the committee members that this issue be pursued and that a consultant be hired if staff determined this was necessary.

Strategic Plan

Mrs. Scheck reviewed for the committee the proposed strategic plan that is to be reviewed by the Executive Board on May 12th. She noted that under this proposal, the HSE committee would remain as currently structured.

Proposed Meeting with EPA

Mr. Holbrook noted that at the Committee's last meeting, the members discussed whether it would be appropriate to schedule a meeting with EPA staff at RTP to review and discuss any new environmental initiatives. It was agreed that there did not appear to be any specific reason at this time to schedule such a meeting with EPA. However, it was suggested that a possibility may be to schedule a future meeting in North Carolina and to invite the EPA staff to join the committee for a portion of the meeting.

Next Meeting/Adjournment

The next full committee meeting was scheduled for September 21, 1988, 1:00 p.m. in San Francisco, to precede the September 22-23 meeting of the Vinyl Chloride Safety Association, unless issues needing the full committee's review developed before that date.

There being no other business, the meeting was adjourned at 4:45 p.m.

Respectfully submitted,

Mendelle Scheck

M. N. Scheck

agenda

SI

HEALTH, SAFETY & ENVIRONMENT COMMITTEE

Ex: VI

Princess Resort Hotel
Salon II
Scottsdale, Arizona

Wednesday
May 11, 1988
1:00 p.m.

SELF-INTRODUCTIONS

Group

APPROVAL OF MINUTES OF LAST MEETING

Group

SAFETY SUBCOMMITTEE

C. Lunn

DISCUSSION OF TITLE III, JULY 1988 REPORTING

Group

LITIGATION UPDATE:

- SPI v. EPA Settlement
- EPA v. NRDC

M. Scheck

VI ENVIRONMENTAL & SAFETY AWARDS:

- Review of Definitions

Group

TCLP UPDATE

J. Ledvina

STATE/FEDERAL ENFORCEMENT UPDATE

Group

OLD BUSINESS

- SARA 110 Toxicological Profile
- Proposed Meeting With EPA
- OSHA Labeling

M. Scheck
W.C. Holbrook
M. Scheck

NEW BUSINESS

- VI Presentation at VCSA
- VI Strategic Plan

M. Scheck
M. Scheck

NEW MEETING DATE/LOCATION

Group

IS IT YOUR COMPANY'S STANDARD PRACTICE TO APPLY OSHA WARNING LABELS ON THE FOLLOWING:

(29 CFR 1910.1017) Page 1 of 2

COMPANY	PLANT STORAGE CONTAINERS /HOPPERS	PACKAGES /BAGS OF PVC RESIN	PACKAGES /BAGS OF PVC COMPOUND	CONTAINERS /GAYLORDS OF PVC RESIN	CONTAINERS /GAYLORDS OF PVC COMPOUND	DRY BLEND SHIPMENTS	RAILROAD HOPPER CARS	OTHER SHIPMENT CONTAINER OR IN-PLANT
Air Products & Chemicals	Yes	Yes	N/A	N/A	N/A	N/A	Yes, in plastic envelope in dome with MSDS when loaded.	Trucks - Label handed to driver w/ B/L and MSDS.
Vista Chemical Company	No	Yes	Yes	Yes	Yes	Yes	Yes, differs by plant. One has affixed stick-on 5"x7" sign to bottom cone of hopper/both sides. (8 signs per car. Other one has 4"x6" label in envelope to each valve on compartment bottom/8 per car. Label used contains additional info.	No answer
CertainTeed Corporation	No	N/A	N/A	Yes	N/A	No	Yes, each hatch cover (8) and unloading port (8) are labeled with sticker. If labels not present, warning label applied in center of hatch cover and/or unloading port.	No answer.
BFGoodrich Company	No	Yes, only if RVCM > 8 ppm.	No (but is labeled under HCS effective 1st quarter '88.	Yes, only if RVCM > 8 ppm.	No, but is labeled under HCS effective 1st quarter '88.	-	Yes, only if RVCM > 8 ppm.	Waste Containers
Georgia Gulf: Plaquemine	Labeled under HCS	N/A	N/A	N/A	N/A	N/A	Yes, cars stencilled in 1" letters. "Product Label" sent w/ B/L of resin shipments.	All in-plant containers labeled in accordance with HCS.

HCS = Hazard Communication Standard

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IS IT YOUR COMPANY'S STANDARD PRACTICE TO APPLY OSHA WARNING LABELS ON THE FOLLOWING:

(29 CFR 1910.1017)

Page 2 of 2

COMPANY	PLANT STORAGE CONTAINERS /HOPPERS	PACKAGES /BAGS OF PVC RESIN	PACKAGES /BAGS OF PVC COMPOUND	CONTAINERS /GAYLORDS OF PVC RESIN	CONTAINERS /GAYLORDS OF PVC COMPOUND	DRY BLEND SHIPMENTS	RAILROAD HOPPER CARS	OTHER SHIPMENT CONTAINER OR IN-PLANT
Georgia Gulf (continued) Delaware City	Labeled under HCS	Yes	N/A	Yes	Labeled under HCS	Labeled under HCS	Yes, cars stencilled in 1" letters, "Product Label" sent w/ B/L of resin shipment.	Waste Containers. Scrap shipments labeled under OSHA VC Standard.
Occidental Chemical Corporation Addis	HMIS	Yes, if > 1 ppm RVCM	N/A	No	N/A	N/A	Yes, > 1 ppm RVCM	Scrap Containers
Pottstown	HMIS	Yes, if > 1 ppm RVCM	N/A	N/A	N/A	N/A	Yes, > 1 ppm RVCM	Scrap Containers
Burlington North	HMIS	Yes	No	N/A	No	No	Yes, > 1 ppm RVCM	
Burlington South	Use HMIS	Yes	Sold Com- pound Plant	N/A	N/A	N/A	Yes, > 1 ppm RVCM	Scrap Containers
Pasadena	Use HMIS	Use HMIS	N/A	N/A	N/A	N/A	Yes, > 1 ppm RVCM	Scrap Containers
Borden Chemicals & Plastics Illioopolis	yes	yes	N/A	N/A	N/A	N/A	Yes	Scrap Containers
Geismar	yes	N/A	N/A	yes	N/A	N/A	Yes	Scrap Containers

Update: March 23, 1988

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THE VINYL INSTITUTE
HEALTH, SAFETY AND ENVIRONMENT COMMITTEE

MAY 11, 1988

SAFETY SUBCOMMITTEE

THE VINYL INSTITUTE
ANNUAL MEETING
SCOTTSDALE, ARIZONA

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SHORT TERM SAFETY SUBCOMMITTEE GOALS:

1. FORMALIZE SUBCOMMITTEE OBJECTIVES
2. INITIAL PRIORITIES, TASKS AND TARGET DATES FOR SUBCOMMITTEE
3. ESTABLISH MEMBERSHIP IN SUBCOMMITTEE

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**SAFETY SUBCOMMITTEE
OBJECTIVES**

The primary objectives of the safety subcommittee shall be to provide a forum to:

- A. Share safety related information which can improve the overall vinyl industry safety record.
- B. Develop and maintain standard safety training programs for the vinyl industry.
- C. When appropriate, review and prepare comments on governmental/vinyl industry safety issues.
- D. Assist in recognizing and publicizing outstanding safety performance in the vinyl industry.

A. Share safety related information which can improve
the overall vinyl industry safety record.

_____vinyl specific or _____general

_____accident/incident reports

_____safety organization/responsibilities

_____safety procedures

_____vinyl handling

_____vinyl loading

_____emergency response

_____offsite impact

_____accident investigation

_____engineering standards

_____relief valves/rupture disk

_____tank design

_____loading/unloading

_____testing

_____sample systems

_____vinyl/PVC laboratories

_____control system interlocks

_____fire protection

_____special clearing procedures

_____fire fighting

_____personnel protective equipment

_____labeling/MSDS

_____sampling

_____Quest speakers/writers

topics:

_____company safety programs

_____CAER programs

_____mutual aid

_____Clearinghouse/published document list

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B. Develop and maintain standard safety training programs for the vinyl industry.

_____ OSHA training requirements

_____ Emergency response guidelines

_____ video _____ slide/tape _____ PC based

_____ written

C. When appropriate, review and prepare comments on governmental/ vinyl industry safety issues.

D. Assist in recognizing and publicizing outstanding safety performance in the vinyl industry.