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Environmental Affairs

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TO: Distribution
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SUBJECT: Vinyl Institute HSE Meeting Notes

*Opp. Unit
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Dioxin Issue*

The Health, Safety, and Environmental subcommittee of the Vinyl Institute met on Tuesday, January 23, 1990 in Orlando, Florida. Fourteen persons were in attendance representing all member companies with the exception of Borden.

The following is a summary of the substance of the items that relate to PPG. Details of discussions of PVC items are only briefly covered.

DUTCH STUDY OF FORMATION OF DIOXINS AND FURANS IN THE OHC PROCESS

Background: A recent report from the University of Amsterdam's Laboratory of Environmental and Toxicological Chemistry pointed out that the production of VCM was the principal source of dioxin and furan pollution of the Rhine River. The crucial step was found to be the OHC process catalyzed by alumina-CuCl₂ at 250-300 degrees C.

Discussion: Goodrich is doing some more investigation of this. Goodrich will be conducting a sampling program within their OHC process to search for a source of these compounds. PPG reported that we had recently analyzed our wastewater from Plant B for these two compounds and found none. No samples had been taken upstream of the steam strippers. No other companies had any other data to report. VI will get a copy of the Dutch study to the members for information. This will be discussed at the next meeting.

FO24 SUBCOMMITTEE REPORT/STRATEGY

Background: This concern is brought about by the fact that EPA has land bans on disposal of the ash from burning these wastes (heavy ends from VCM/EDC production). A 1 PPB dioxin and furan limit on the ash has caused commercial incinerators to stop taking this waste due to the possible liabilities and delays involved with this. A VI subcommittee met to share information on 1/22/90 and reported their results to the main committee. Companies

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represented in this subcommittee meeting were CertainTeed, Dow, BFG, Ga. Gulf, Vista. PPG, Oxy, Shintech, and Borden had not attended.

Discussion: The subcommittee's findings were that there is a great disparity in the way companies classify their wastes. Some are reporting furnace coke and waste tars as F024 and others are not. For example Goodrich says that they have no F024 waste since their process doesn't involve any "free radicals" as stipulated in the regulations. Dow reported that they were sampling their coke to look for dioxins and furans and would consider reclassifying their wastes based on analyses. The subcommittee will send out a survey on this issue to the member companies to gather additional information. The survey will ask for a list of waste streams, disposal codes, methods of disposal, and comments.

FUGITIVE EMISSIONS FOLLOW-UP

Background: There had been some previous interest expressed in the VI sponsoring bagging studies to save money and reduce the Sara 313 reported emission numbers.

Discussion: Discussion of this issue revealed the fact that some companies had already completed their bagging studies while others had no intentions of doing it. For example, Vista had already spent \$100,000 total in three of their plants and was not willing to share the data while Shintech had no intentions of ever doing it. This led to the conclusion that a cooperative effort was not likely on this matter.

This item was dropped.

SARA 313 REPORT AND ZERO DISCHARGE GOAL

Background: The VI has gathered Sara data from member companies for VCM and EDC emissions since Sara reporting began. The intent here was to put this data on a sheet where member companies will be able to see how they perform relative to one another before this information is released to the public.

Discussion: The group decided to stop doing this. Georgia Gulf volunteered to gather the data from the EPA's computer terminal and circulate it to all member companies. This data will include all sources of EDC and VCM which includes much more than just the VI member companies. PPG's reported EDC fugitive emissions for 1988 were high relative to the rest of the member companies.

WASTE MINIMIZATION TASK FORCE

Background: This is predominantly a PVC issue at this time. Vista is interested in forming a VI cooperative effort for disposal of waste PVC.

Discussion: This issue was discussed with varying opinions (and very little agreement) until the issue was tabled for the next meeting. Vista will send out a letter to member companies to gather data to determine the magnitude of the problem. Also VI will ask catalyst suppliers of PVC plants to meet with them at the next VI meeting to consider reduction of solid waste packaging materials.

ACTIVITY ON EAST COAST RAIL SAFETY

Background: This was prompted by an incident which took place on 8/22/89 in the northeast in which a VCM railcar was punctured and the entire contents lost. Apparently the response to this emergency was deemed by some to be inadequate. There was no fire. An ad-hoc group made up of representatives of Formosa, Ga. Gulf, Oxy, and BFG had met twice this past fall to discuss some sort of mutual aid response to railcar emergencies which would be done to supplement the existing ChemNet and ChemTrec response programs.

Discussion: This group will meet again on 2/15/90 in New Jersey with Conrail representatives to describe their training programs and emergency procedures. The objective of this group is to decide if there is adequate response capability. The primary thrust of this group has been toward the routing of VCM cars from the Gulf Coast to the East Coast. Oxy is setting up a response team in Pennsylvania for this.

PPG can participate in this if there is a need or perceived benefit.

NEW JERSEY LABELING UPDATE

This is a PVC issue. Further information is available on request.

LOUISIANA WATER REGULATIONS

Background: This is a new agenda item which the committee chairman added in order to share information or war stories about Louisiana's proposed new water regulations. These are more strict than the EPA's own OCPSPF guidelines. Apparently the VI Executive Board had requested this item to be considered. They were wondering

if the LCA is doing enough in Louisiana and if they needed any help from the VI.

Discussion: This item was discussed and it was pointed out that the LCA was simply losing "clout" due to the change in Louisiana politics. The group agreed that they thought that the LCA was not doing enough in this area. VI will send a letter to LCA expressing our concern and to clarify our position. This issue was generally considered to be a Louisiana issue and LCA will probably want local help rather than VI help.

VI ANNUAL SAFETY AWARD AND VI ENVIRONMENTAL AND SAFETY RECOGNITION

Background: The HSE committee recognizes member companies' plants with the best safety (recordable) and environmental statistics with special awards. In addition, one individual who has made a significant contribution to safety is given an award each year.

Discussion: The forms (worksheets) were distributed for these three annual VI awards. Each member company will need to complete theirs and turn them in by 3/1/90 in order for the awards to be made during the next meeting in May.

NESHAPS INPROCESS WASTEWATER AS IT APPLIES TO VCM/EDC PLANTS

Background: Vista had requested this agenda item for discussion about comingling of VCM and non-VCM streams for treatment.

Discussion: PPG reported that we do differentiate and strip these two separately and that a special variance had been sought to put a non-VCM stream into the VCM wastewater stripper. This was in reference to the VDCM reactor bottoms stream being sent to CSS last fall for metals removal.

Dow reported that they assumed that the words in the regs "piece of equipment" are referring to the stripper itself.

ENFORCEMENT UPDATE

Background: The group typically shares any agency enforcement war stories to keep each other informed.

Discussion: Oxy reported that they had lost 15,000 #VCM out a faulty manway gasket on a PVC reactor. It had been reported as a leak to the Texas Air Commission and they upheld this decision that even a massive leak is not a NESHAPS violation.

Air Products in Pensacola reported that they were being required to do six months of ambient monitoring at the fenceline at points which were selected by the proximity to the neighbors. This was prompted by odor complaints and their SARA numbers. This was required by the State in order to make a permit renewal application. This work will begin on 2/15 and will cost them \$90-100,000 to complete as a turnkey contracted job.

CertainTeed reported that the Lake Charles area plants have banned together to sample for ozone and its precursors. As of yet, they haven't been able to identify one-half of the compounds that are being found in the air.

Goodrich reported two VCM relief valve discharges (<100 # VCM) in November for which the agency requested \$10,000 penalty.

Vista reported 8 or 9 LESHAPS VCM releases which they received a \$9000 penalty.

PPG reported on the compliance order on HCB/HCBD issue, and the two administrative orders on copper and chlorinated hydrocarbons, the lawsuit on the proposed Louisiana water regs, and the 308 compliance order for more information on biomonitoring and analyses of HCB, HCBd, EDC, and Tetra in the wastewater effluent.

TEST DATA ON RESIN/LEACHATES

This is a PVC issue. Further information is available on request.

NEW BUSINESS ITEMS

I. SENATE BILL 1630

Background: Goodrich stated concern over the bill that is in the senate now which will set limits for emissions from municipal incinerators and limits certain compounds in the ash. There is a provision to allow the EPA to ban certain products from use that go into the municipal wastes. This is obviously an important concern for PVC manufacturers. Goodrich's CEO is going next week to talk to the senators personally about this matter.

Discussion: Goodrich recommended that each member company familiarize themselves with this senate bill. VI will do nothing on this for the time being except to talk to our legal counsel about it.

II. EDC IN SOILS AND GROUNDWATER

Background: Goodrich made last minute request to get this into the agenda for this meeting.

Discussion: Due to the shortage of time this issue was tabled until the next meeting. Each member company will come prepared to discuss their own soil and groundwater contamination for a maximum of 15 minutes.

III. TCLP

This is a PVC issue. Further information is available on request.

IV. EDC COMPLIANCE WITH OSHA REGS

Background: This item was added to the agenda by PPG. The group was asked if there was any interest in sharing the generic engineering controls that each company was going to use to meet the n w OSHA EDC Permissible Exposure Limits.

Discussion: Dow expressed concern about sharing technology, but Oxy and Vista seemed interested. PPG will initiate a letter to member companies to solicit interest and to coordinate any further work in this area.

NEXT MEETING

The next meeting will be held on May 10, 1990 in Florida in conjunction with the VI annual meeting.

As a result of this meeting the following are action items for PPG:

1. Consider the merit in looking upstream of the wastewater effluent for dioxins and furans coming from the OHC process.
2. Complete the FO24 survey when it arrives and see what the other companies are doing on waste classification.
3. We should figure out how to get our computer hooked into th EPA's to access the SARA 313 data base. Georgia Gulf is now doing this.
4. Consider joining the group of member companies looking into railcar safety.
5. Complete the VI annual safety and environmental award forms by 3/1/90.
6. Gather information for the "enforcement update" at the next VI-HSE meeting.
7. Prepare a 15 minute presentation on EDC in soils and groundwater for the next VI meeting.

8. Issue a letter to member companies to survey the level of interest in conducting a workshop on engineering controls to meet the new OSHA EDC regulations.

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**CHLORINE INSTITUTE STATEMENT ON
THE USE OF CHLORINE IN THE PULP AND PAPER INDUSTRY
- The Dioxin Issue -**

The chlor-alkali industry, through the Chlorine Institute (a trade association), is implementing a science-based program to address concerns that chlorine used in pulp and paper processes is a factor in the formation of minute amounts of dioxin in some finished paper products and in effluents from some pulp and paper mills.

At the same time, the industry cautions against the view that the levels of dioxin being found are harmful, or that the only way to change the situation is to substantially reduce chlorine use. In spite of extensive scientific research, no harmful effects have been proven from the minute concentrations.

CHLORINE AND THE PAPER INDUSTRY

Chlorine has been used by the pulp and paper industry for many years to efficiently and economically make a variety of high-quality paper products. Bright-white stock for communications is a result of chlorine bleaching. But this is only part of the story.

Chlorine helps produce strong, soft paper for personal-care products like facial and toilet tissues and disposable diapers. It also makes paper that retains its brightness, and it helps dissolve impurities and remove unpleasant odors from paper. While chlorine does not represent the only way to do these things, it generally is the most economical. So it helps keep consumer prices low.

About 15 percent of all chlorine produced in the United States is used to make pulp and paper. That figure represents more than 1.5 million tons of material annually. When chlorine is produced, caustic soda (sodium hydroxide) is made at the same time. The paper industry uses even more caustic soda than it does chlorine. In fact, pulp and paper making consumes about 23 percent of all caustic -- some 2.5 million tons a year.

Producing and distributing these chlor-alkali chemicals provides some 30,000 U.S. jobs. And chlorine and caustic soda have myriad other uses that benefit everyday life in

thousands of ways. Some uses are well known, such as the public health benefits of drinking water disinfection using chlorine and the aesthetic value of whitening clothes; others less so, like soaps and detergents, perfumes, deodorants, food and beverage processing, and pollution control.

THE DIOXIN/FURAN ISSUE

Extremely low concentrations of dioxin (and closely related compounds known as furans) have been found in paper products and waste effluents from some pulp and paper mills. The levels -- parts per trillion and quadrillion -- have become detectable only through recent analytical chemistry advances.

How small is one part per trillion or quadrillion? Consider that one part per trillion (1/1,000,000,000,000) is equivalent to one second in 32,000 years; one part per quadrillion (1/1,000,000,000,000,000) -- one second in 32 million years.

Primarily, the analyses revealed traces at these levels of a dioxin (2,3,7,8 TCDD) and a furan (2,3,7,8 TCDF), which occur when chlorine reacts with materials in the wood pulp. Laboratory tests have shown that at significantly higher levels, some of these chlorinated compounds are carcinogenic to certain animals. However, there has been no substantiation of any carcinogenicity for humans.

There also is ongoing debate among scientists and public health officials over the U.S. Environmental Protection Agency's (EPA's) risk assessments and potency factors for dioxins and furans, which even the EPA acknowledges are conservative.

EPA's current risk-potency factor for dioxin ranges from 100 to more than 1,000 times more stringent than the levels set by regulatory agencies in other countries -- Canada, Germany, Netherlands -- using the same scientific data. Less-strict factors also have been set by the U.S. Food and Drug

Administration, the Centers for Disease Control, and the State of New York.

A key related issue involves adsorbable organic halides (AOXs), a broad category of chlorinated organic compounds, including dioxins and furans, produced during pulp bleaching. Swedish paper mills' discharge of these compounds threatens the ecology of the Baltic Sea and other bodies of water.

To approach this problem, most Swedish mills made process changes that reduced chlorine use. In North America, treating mill effluent has been found to substantially reduce AOX levels. AOX discharges from such treatment systems now prevalent in North America are significantly below the levels that precipitated the AOX issue in Sweden. Further AOX reductions are possible through process changes already taking place to reduce dioxin/furan levels, and through enhanced effluent treatment.

WHAT THE CHLOR-ALKALI INDUSTRY IS DOING

The chlor-alkali industry does not believe that the parts per trillion and lower concentrations of dioxins and furans from paper making pose a health or environmental threat. And the industry believes that restrictions on chlorine use in paper manufacturing are unwarranted. However, if scientific data were developed to the contrary, the industry would endorse measures to reduce dioxins and furans to safe, environmentally sound levels.

In any case, the industry's action plan is to examine and help expand the volume of science on dioxins and furans in order to foster rational decisions on health and environmental issues. The goal is to determine what dioxin/furan levels constitute a human health and environmental risk so that appropriate risk levels can be set and met.

The industry believes this goal can be achieved through the following:

Scientific Conference on Dioxin

The industry, through the Chlorine Institute, is supporting work to organize a conference to be held in early 1990 of leading independent scientists and other experts to share and examine the latest information on the health effects of dioxin. The conference would focus on the biological mechanisms of dioxin action. It also would assess the impact of these mechanisms on the public policy

aspects of setting potency factors and risk assessments for dioxins and furans in general, and 2,3,7,8 TCDD in particular (that being the principal dioxin compound involved in the pulp and paper issue).

Support Other Dioxin/Furan Research

The industry, also through the Chlorine Institute, is actively pursuing the identification and funding of research programs that would enlarge the body of knowledge on dioxin, furan and AOX formation, their health and environmental effects, and how to reduce them where necessary. Funding of the first research program is expected before year end.

In addition to these forefront activities, chlorine producers (both individually and as members of the Chlorine Institute) are working with the paper industry in the areas of dioxin/furan formation and the methods for measuring the minute amounts of these chemicals. Since chlorine is only one of several factors in the formation of these compounds, there are various ways to reduce them without substituting other bleaching agents for chlorine. These include reducing the levels of dioxin/furan precursors, enhancing pulp-washing, and improving chlorine-addition practices. Much more needs to be learned about the potential environmental consequences of other bleaching agents. Chlor-alkali companies that make other bleaching chemicals are working with their customers in that area.

CONCLUSION

The chlor-alkali industry is dedicated to public safety, education and environmental protection. We urge that regulatory and legislative decisions be made only on the basis of firm scientific data. Otherwise, the result may be higher consumer prices with little or no additional benefit to human health and the environment.

July, 1989