

Bab

UNION CARBIDE CORPORATION
Chemicals and Plastics

Texas City, Texas

February 27, 1973

To: Mr. C. E. Bowman Mr. A. A. Peterson
 Mr. B. B. Cowser Mr. G. T. Pyle
 Mr. M. E. Eisenhour Mr. T. L. Rapp
 Mr. J. L. Hockersmith Mr. D. E. Richardson
 Mr. F. L. Johnson Mr. K. E. Ross
 Mr. G. P. Keister Mr. O. A. Shelton
 Mr. F. L. Keller Mr. K. L. Topham
 Mr. E. L. Kieschnick Vinyl Shift Prod. Supervs.

cc: Mr. A. S. Amatangelo - 514

Subject: Notes From Vinyl Chloride Safety Association Meeting
 ~~CONFIDENTIAL - 1973~~

In order to gain added benefit from my attendance at the subject meeting, I think an informal discussion of the attached notes by interested people is in order. Cafeteria Conference Room No. 2 has been reserved for this on Tuesday, March 13 from 1:00 - 2:30 p.m. You and other members of your departments are invited. Please bring your comments and questions so we can have a useful interchange.

Very truly yours,

R L Frantz
R. L. Frantz

RLF/st

Attachment

UCC 093148

NOTESVINYL CHLORIDE SAFETY ASSOCIATION MEETINGATLANTA, GEORGIAJanuary 31 - February 1, 1973GENERAL

This fifth meeting of the Association was well attended (fifty-two people registered) by representatives of most of the thirty member companies (list attached). Union Carbide was represented by the writer (R. L. Frantz) and A. S. Amatangelo. These notes were recorded in chronological order and cover the most important parts of the meeting. Official minutes of these meetings are not kept but they are taped as a safeguard against possible government action charging unlawful collusion of VCM and PVC producers.

The sessions were frank and open in regard to matters of safety. Participants, however, did not divulge confidential proprietary information. Membership in the Association continues to be limited to manufacturers of VCM or PVC. Several requests of related firms, such as Pennwalt's Lucidol Division, to join were turned down.

OPENING

Chairman M. G. Glenn (General Tire) opened the meeting by saying he was happy to see so many smiling faces, referring of course, to the fact that VCM-PVC business was much improved from the last meeting. He felt that the Association had met the objectives of its original intention -- that of bringing together a broad representation of VCM-PVC manufacturers for a better understanding of the safety hazards involved in our business so there would be fewer accidents. He indicated that our goal now was to set up industry-wide safety criteria; otherwise OSHA might step in imposing unrealistic rules, etc. Later, in the meetings and in outside discussion there was a lot of doubt expressed about the wisdom of the Association endorsing specific safety guidelines for fear they would be adopted by OSHA as binding. A "go-slow" policy was the final outcome with Bogart of Tenneco trying to develop a criteria on the purging of blend tanks to be discussed at the next

meeting; this would be the only attempt at establishing a criteria at this time.

After election of new officers for the next year, including Ray Asti (Stauffer Chemical) as Chairman, the meeting moved swiftly into the rest of the published agenda.

Explosion At Tenneco In A Blend Tank

Bogart described an incident at Tenneco where an operationally empty blend tank blew up with great violence, with two-thirds of the 25,000 gallon tank rising seventy-five feet into the air and the explosion being heard fourteen miles away and felt at a distance of four miles. No one was injured seriously. Simply stated, the cause was an overheated collar around an overhead supported agitator shaft in the tank that ignited VCl vapors in the blend tank. The agitator had been left running in the "empty" tank (a slurry heel was still in the tank) and started to whip after part of a vortex breaker broke off the agitator and set up friction with the collar. The tank had not been inerted. Tenneco is now in inerting blend tanks with nitrogen. Most companies reported they air purged blend tanks. NOTE: We need to review the physical set up of our blend tanks and review our procedures.

The above incident brought on the question of monitoring VCM content of the slurry. Mudd (General Tire) said they did with normally less than 0.15% by VFA -- but it's still 100% explosive. Only one representative considered the dryer area a VCM problem and one reported they used gas fired dryers. About one-half considered the centrifuge area a safety problem.

Fire Brigade Training

Next Dan McDonald (Ethyl Corporation) reported at length on Fire Brigade training including actual fire fighting. I didn't hear anything innovative from our training program for the plant fire squads.

OSHA Inspections

Several members described OSHA inspections that had been held at their plants. Some were in VCM-PVC plants; some were not. These reports were interesting and useful, but more for their insight into the modus operandi of OSHA than for revealing safety hazards peculiar to a PVC factory.

All of the inspections were the result of employee complaints. Normally the inspectors looked at the things that had been complained about

and other general factors such as grating, guards, fire extinguishers, first aid training programs, medical facilities, etc. Private sessions were held with management where the OSHA representative detailed the law. Generally the OSHA man was sincere in trying to improve plant safety. In addition to an inspection during which two company men and two members by the bargaining unit accompanied the inspector, a private meeting of the inspector with the Union representatives occurred.

A time was set for correcting violations. One OSHA inspector was quoted as saying ten percent of the inspections were followed up on by OSHA. One instance of re-inspection was reported and it was limited to seeing if previous violations had been corrected.

Many safety items are pointed out by the OSHA man that are not cited for a fine. If you show good faith and take immediate corrective action, OSHA tends not to cite. Do not argue with the OSHA man; for instance, admit there is a leak even if you're convinced there is not one if OSHA man says there is. Then report the leak has been fixed.

Document verbal warnings and reprimands to employees for violations of safety rules. Otherwise you may be open for a citation for not enforcing safety rules.

Accident Experiences

Joe Mudd of General Tire reported on two major spills of VCM in the last year. In one case 4,000 gallons VCM leaked out of a Vitraulic quick opening connection that an unloading hose had been connected to. They now have removed from service these quick opening connectors. In the other incident 2,000 gallons of VCM leaked out of a storage tank into a diked area after a screwed 3/4" nipple on the bottom of the tank broke off. Now they've gone to welded fittings. Incidentally the dike valves were closed and two hours were required for the 2,000 gallons to dissipate. ICI reported at this point that it's possible to use a high protein foam to allow a controlled rate of boil off if VCM gets into a diked area. B. F. Goodrich said detergent based foam is no good.

ICI described the formation of polyperoxides in a 50-ton tank empty but not washed for two months. When a drain on the tank was opened the soft, white putty-like substance oozed out and flashed several times. They flooded the tank with a weak water solution of NaOH. The moral of the story is to avoid any VCM remaining in contact with oxygen. Some check O₂ content

in vapor space of VCM tanks -- should be less than 200 ppm. Use up recovered monomer as quickly as possible. At this point Larry Adcock (Dow, Oyster Creek) reported that some of their VCM tank cars were being returned with high O₂ content. Later I asked him if this was a problem with UCC cars. He said no, that ours were coming back in excellent shape with no O₂.

Next came the description of several similar incidents in which operators either died or passed out from breathing VCM fumes. In two of the cases (both in Mexico) deaths occurred to operators who were washing tanks with open manheads. It apparently is fairly common in some plants for operators purposely to breathe VCM vapors to get a "buzz". Are we aware of any such practice here?

Diamond Shamrock reported an operator pryed open an 18" Lenape quick opening manhead on one of their 2,200 gallon autoclaves at Delaware City that was two hours into the run. Operator was preparing a poly for cleaning and had gotten on the wrong one. Their J & W vapor detection alarm and deluge system worked well in this incident and there were no serious injuries. The material of construction of the "O" ring gasket in this flange Diamond considers secret and would not divulge what it was. What do we use?

Pantasote reported several incidents at their Passaic, N. J. facility. One was massive venting when relief valves on several reactors popped following a power failure at the public utility. Two 10M gallon demineralized water tanks lifted off the ground after autoclaves backed into the tanks and the tank vents were too small. During a bomb threat they killed all their twenty 2,200 gallon reactors by adding one-half pint alpha methyl styrene. It worked well.

Catalyst Handling and Storage

Numerous minor initiator incidents were reported. Some useful hints emerged. Be concerned about air circulation throughout freezer -- do not crowd catalyst containers together or next to walls. No catalyst that is removed from the large freezer should be returned since it may be contaminated. It is good to have two independent temperature sensing devices recording in the control room.

VCM Tank Car Safety

Sid Pitts of Conoco reported on various safety aspects of VCM tank car loading. Some interesting points were made. They purge TC's with N₂ before entry. They use solid loading lines with fill line to bottom. Most of the excess flow valves on outlet of tank cars do not work -- they are checking them now each time they open dome. Consensus was that most people use flexible hose for unloading VCM TC's. Some use Chicksan couplings.

Air Sampling Device

Dow reported on a study they had made in a number of their chlorinated-hydrocarbon units where a continuous air sampling device was devised and placed on a worker to see if the air exceeded the OSHA eight-hour time weighted average maximum. Information about the device is supposed to be sent to me.

CONCLUSION

This report touches only on the highlights of a very interesting and useful meeting. I personally learned a lot and believe that by pursuing some thoughts and suggestions that were offered our PVC plant can be made even safer than it now is.

R. L. Frantz
February 20, 1973

RLF/st

Attachment

UCC 093153

VINYL CHLORIDE SAFETY ASSOCIATION

MEMBERSHIPS IN GOOD STANDING-JANUARY, 1973

1. Air Products
2. Allied Chemical Corporation
3. American Chemical Corporation
4. Borden Chemical
5. Conoco Plastics
6. Diamond Shamrock
7. Dow Chemical Company
8. Ethyl Corporation
9. Firestone Plastics Inc.
10. General Tire
11. Goodrich Chemical
12. Goodyear Tire & Rubber Co.
13. Great American Chemical Corporation
14. Gulf Oil of Canada
15. Hooker Chemical (Ruco)
16. Imperial Chemical Industries
17. Industrias Resistol, S. A.
18. Keysor-Century Corporation
19. Monsanto Co.
20. Montedison Co.
21. Norsk Hydro A. A.
22. Olin Corp.-Thompson Plastics
23. Pantasote Co. of New York
24. PPG Industries
25. Promociones Industriales Mexicanas S. A.
26. Shell Chemical Co.
27. Stauffer Chemical
28. Tenneco Plastics
29. Union Carbide
30. Uniroyal Inc.

MEMBERSHIPS DELINQUENT

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POTENTIAL NEW MEMBERSHIPS

1. British Plastics
2. Farberwerke Hoechst A. G.

UCC 093154

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UCC 093155

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