

ACTION TAKEN IN 1974 TO REDUCE VINYL CHLORIDE

EXPOSURES IN THE SUSPENSION/NON-SOLVENT/

VINYL REFRIGERATION UNIT

1. Discontinued standard operating procedure of water rinsing D-autoclaves to pad between batches.
2. Installed 20 point VFA/VCl analyzer (\$20M) in Bldg. 174 control room to analyze and record VCl concentrations at sample heads located throughout the unit.
3. Issued instructions to operating personnel to log, locate, and stop sources of vinyl chloride emission whenever the VFA/VCl high exposure alarm sounds.
4. Relocated dumping of Nos. 3 and 4 stripping tanks from highly traveled area to remote location.
5. Purchased portable vinyl chloride analyzer (MSA) for testing vessels (which previously contained vinyl chloride) for vinyl chloride content to minimize personnel exposure upon vessel entry.
6. Conducted in-depth stripping study to determine relative importance of operating parameters in reducing residual monomer content.
7. Replaced styrene with more efficient sodium nitrite terminator for "killing" runaway reactions.
8. Revised procedure to use resin analysis as a guide instead of "boil-off" sampling of recovered monomer.
9. Developed method for heating suspension autoclaves to reaction temperature using direct steam injection.
10. Replace PVP suspending agent with HEMC to provide more stable VAc/VCl copolymer reactions.
11. Installed Off-Gas Recovery system to recover vinyl chloride flashed from resin in vacuum strippers.

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12. Issued SOP to vent autoclaves with high reaction pressure to Off-Gas Recovery system vacuum header instead of the atmosphere.
13. Used 50 M gallon suspension surge tank in Non-Solvent service to provide additional surge capacity between Non-Solvent autoclaves and dryers to prevent overflow of resin slurry.
14. Reduced premature D-autoclaves rupture disc failures by changing from type PLDV to type RB-90 for more accurate bursting pressures.
15. Modified No. 1 VCl recovery system to allow recovery of contained vinyl chloride in the high pressure vent by scrubbing in Solvent Vinyls acetone stripping system.
16. Modified No. 2 VCl recovery system to send high pressure vent stream to the No. 1 Powerhouse for burning in boilers as fuel.
17. Revised Off-Gas Recovery System to send high pressure vent to the No. 1 Powerhouse for incineration as boiler fuel.
18. Enclosed the atmospheric packing areas of Nos. 1 and 2 compressors for venting outside the compressor room.
19. Designed and installed exposure-proof slurry samplers for D-autoclaves.
20. Added an additional operating position to allow closer monitoring of vinyl chloride recovery facilities.
21. Barricaded compressor room doors with chains and hung signs on each doorway which read, "Entry Without Fresh Air Protection Requires Chief Operator Approval".
22. Changed packing on Nash compressor to improve reliability and lessen vinyl chloride emissions to the atmosphere.
23. Revised procedures for flushing skin-pots to minimize operator exposures to vinyl chloride.
24. Relocated maintenance eating facilities outside the manufacturing area to reduce potential exposures.

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25. Revised piping to allow decanting of recovered monomer tanks to a closed vessel instead of the sewer.
26. Removed walls from Bldg. 127 (upstairs) to improve ventilation and lessen operator exposure.
27. Increased technical staff (67%) to devote more time to minimize vinyl chloride monomer losses.
28. Installed DMV in No. 1 Blowdown tank feed header to avoid autoclave blowdowns during vacuum stripping which result in blown rupture discs.
29. Revised piping to vent VCl filters to an enclosed vessel rather than the atmosphere prior to opening for maintenance.
30. Install piping on all VCl pumps to allow priming to an enclosed vessel instead of the atmosphere.
31. Purchased portable Century OVA/VCl analyzer for use as a tool for locating emission sources of vinyl chloride.
32. Revised piping to recover vinyl chloride and vinyl acetate in seal water in the No. 3 vacuum stripper.
33. Modified pilot plant operating procedures to recover most vinyl chloride emissions in the No. 2 VCl recovery system.

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