

VINYL SHIP LOADING PROCEDURE

Steps

Key Points

1. Connect ground connection from shore to ship
2. Sample vapor space of all tanks to be loaded for oxygen content. If ships' tank pressure is equal to sphere pressure, check for liquid. Sample if enough is present. Airline Mask will be used if last content was VCM.
- 2a. Notify Shift Engineer that nitrogen will be used for purging.
- 2b. Hook up liquid and vapor lines to ship
- 2c. Close bleed between double block and bleed on nitrogen to liquid line and open nitrogen to liquid line.
- 2d. Line up the vapor line to the stack at the sphere manifold.
- 2e. Check nitrogen meter operation when purging is started.
- 2f. If nitrogen is to be added through the liquid line - ships' personnel can control purging with their valves.
- 2g. If nitrogen addition is through the vapor line, we will have to open and close the dock valve on the vapor line, unless the ships' stack is used for venting.
- 2h. Check oxygen content on tanks when requested by mate or after each purge cycle.
- 2i. Shut off nitrogen supply valve, valve to liquid line and OPEN bleed valve between double block on nitrogen to liquid line.

1. Sign "Regulated Area" Log Sheet. Include Social Security Number.
2. Maximum allowable is 1000 ppm. If purge is required proceed to 2A. If OK, proceed to Step 3.

NOTE: If ship contained something other than Vinyl and has not been cleaned, a bomb sample for GC analysis will be required. A decision will have to be made as to whether tanks will be cleaned or if contaminant can be lowered to suitable level by purging.

- 2b. Airline Mask will be used during this job.
- 2e. We don't have to be present on docks at this time, but the nitrogen meter should be checked periodically to verify its operation.
- 2g. If ships' stack is used - valve at sphere to stack is left closed (Step 2d is omitted).
- 2h. When oxygen is less than 1000 ppm - tank is OK for loading. Prior cargo must be 1000 ppm or less.
- 2i. This double block and bleed is needed to prevent vinyl from backing up into the nitrogen system. Should the vinyl line pressure exceed the nitrogen line pressure it is important that the bleed valve be OPEN before loading is started.

2j. If purging was done through our stack and vapor line, close dock valve on vapor line.

2k. Check double block and bleed from liquid line to vapor line. They should be closed and bleed valve OPENED.

3. Lower barricade arms across roads. The area barricaded is now a Regulated Area. All personnel must sign Log Sheet when entering.

4. Line up vapor line to sphere.

5. Open discharge valve on one pump and open loading line to docks.

6. Gauge sphere and record temperature and pressure.

7. Notify Mate to line up to his first tank and that you are ready to transfer.

8. Open line on dock when Mate is ready to put material in tanks for starting sample.

9. When the first tank has enough material to sample, purge sample point and check, appearance of material. See separate operating instructions for the closed loop sampling system.

10. These are checked for appearance, color, water and iron. Resamples are caught, if necessary and the decision is then made whether or not to load ship.

11. When starting samples are approved, stabilizer if required, is added as follows:

11a. Make sure recirculation valve back to sphere is closed.

11b. Make sure both valves on stabilizer addition are closed.

3. Remove all vehicles from barricaded area. No vehicles or arcing devices allowed in area without Supervisors approval.

4. Ships' tank pressure has to be 3 - 5 psig higher than sphere pressure to equalize into it.

5. Check for leaking pump seals and valve packing leaks. Leaks will be corrected before loading starts. Use Airline Mask to make any repairs.

6. The surveyor usually takes his readings at this time unless this has been done before hand.

8. Material is put aboard by gravity. If ships' tank pressure is too high for gravity flow, use one pump with some recirculation.

9. Scott Air Pack or Airline Mask will be used when taking sample.

If material looks OK, continue to next tank. If material is questionable (color or particles) put some more material in tank and allow 5 minutes or so for settling then resample. If material is still bad, a decision will have to be made whether or not to continue with the other tanks.

11a. This prevents stabilizer from contacting sphere.

- 11c. Vent any pressure remaining on pot and slowly open stabilizer addition valve.
- 11d. Add weighed quantity of stabilizer to pot and have Mate line up to the corresponding tank.
- 11e. Start one pump and establish flow to first tank. Open valves to and from stabilizer pot and close valve ahead of filter. Pump thru pot approximately 5 minutes.
- 11f. Open valve ahead of filter and close off valves to stab. pot.
- 11g. Continue pumping to ship's tank while stab. pot is being cleared.
- 11h. To clear Pot: Open dump valve on bottom to control system. Open valve on top of pot and allow Nitrogen pressure to pad liquid out. When Empty, close valves on top and bottom of pot and open bleed valve on top.
- 11i. When gauge indicates no pressure slowly open stabilizer addition valve and close bleed valve on top.
- 11j. Add stabilizer for next tank. Close addition valve and notify Mate that you are ready to stabilize the next tank.
- 11k. When flow is established to next tank repeat steps 11e. thru 11j.
- 12. When all tanks have been stabilized, close valves on pot and open valve ahead of filter. Open dump valve on pot to control system and allow material to flash to stack.
- 13. Notify Mate that stabilization has been completed and material can be started to all tanks.
- 14. Continue loading with both pumps and recirculation valve cracked unless ship develops pressure problems with his tanks. If this happens, open more recirculation first, if this isn't enough, shut down one pump.
- 11c. Purge stabilizer pot with nitrogen before opening to add stabilizer. Airline Mask will be used while adding stabilizer.
- 11e. Pumps should be started from pump pad only. Since no recirculation is on pumps during stab. addition, caution Mate not to close off first tank until he is open into next tank. This will prevent "dead heading" pumps.
- 11h. Sweep pot with nitrogen before opening to add more stabilizer. Airline Mask will be used during this job.
- 12. After material has flashed out of pot, purge with nitrogen to the control system.
- 14. If one pump is to be shut down, do so only from the pump pad, after the discharge valve on the pump to be shut down has been closed. This prevents the possibility of spinning the pump backward and backing the impeller off.

15. Notify Production so they can start transfer from area to dock sphere if the load requires it.
 16. Take sphere readings every hour, also record temperature and pressure.
 17. Check loading pumps for leaking seals, noisy bearings or overheating every 30 minutes.
 18. Periodically check loading hose, flanges and ships' connections for leaks. Make sure remote shut off valve on loading line is still open. At least once per hour, preferably every 30 minutes.
 19. When loading is complete:
 - a. Shut off pumps
 - b. Close liquid valve on dock
 - c. Notify production to stop transferring.
 20. Close vapor line valve on dock.
 21. Close discharge valves on pumps. Leave valve on loading line to dock cracked open.
 22. Line up dock vapor line to control system at sphere manifold. Obtain liquid samples from ships' tanks.
 23. Notify Mate that you are ready to clear loading hose into ships' tank.
 24. Blow as much liquid from hose as possible, then have Mate close liquid valve on ship. Open liquid line to control system, open nitrogen to liquid hose at ships' connection with butterfly valve open and sweep to control system for 5 minutes, then close butterfly valve on end of hose. Then blow ship's connection to control system with nitrogen, if ship has a purge line to ships' stack. If no purge connection available, pressure ships' connection 6 times with nitrogen to 90 psig and vent to control system through liquid hose.
 25. Blow nitrogen through vapor hose into ship. Have Mate to close vapor on ship. If we can't blow vapor into ship - pressurize vapor hose 6 times with nitrogen to 90 psig and blow down to control system on shore.
15. Maximum capacity of dock sphere is 2900 short tons or 2630 metric tons. Note time production begins transfer.
 17. Note abnormalities in log book.
 13. If situation warrants, shut down and make necessary repairs. Use Airline Mask to make any repairs.

If at any time, the portable analyzer indicates more than 1 ppm, the source must be found. A level above this requires use of an Airline Mask or Scott Air Pack. Transfer operations must be shut down until the leak is corrected. Use an Airline Mask when making repairs.
 21. Valve on liquid line to dock must be cracked open, so line will float against sphere. Suction valves on pumps are left open also valve ahead of filter.
 22. Use close loop sampling system.
 24. Airline Mask will be worn during this operation.
 25. Airline Mask will be worn when doing this job.

SL 091416

26. Disconnect the liquid and vapor lines from the ship and install blinds on ends of hoses.
26. Open valve on double block system from liquid line to control system. Bleed all pressure off of liquid hose. Close block valves and open bleed valve.
- Airline Mask will be worn until ships' hose lines have been flanged up.
27. Remove ground wire from ship.
28. Gauge sphere at docks and in area with the surveyor.
28. This can be done whenever it is convenient.

NOTES: SHUT DOWN DURING ELECTRICAL STORMS. DO NOT HESITATE. NOTIFY MAINE OF SHUT DOWN AND NOTE TIME IN LOG BOOK. PUT STEAM ON STACK.

SCOTT AIR PAK OR AIRLINE MASK WILL BE WORN WHEN CATCHING ANY LIQUID VCM SAMPLE AS IN STEP NO. 2.

SEE GENERAL EMERGENCY PROCEDURES FOR VCM LOADING (ATTACHMENT)