

CAUSTIC AND SOLVENT SHIP LOADING PROCEDURE

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As the person in charge preparing to go to one of PPG's loading facilities, your first concern will be to be informed on the product to be transferred. Refer to the Chemical Data Guide, find the product and learn information such as what grade of product, spill procedures, health hazard data, necessary safety precautions, etc. Be knowledgeable in all Federal regulations applicable to the product to be transferred.

It is imperative that you be familiar with the lining up of all piping and loading valves at the docks and shore tanks. Actual hands on training will be done by an experienced tankerman, as it is impossible to cover all the details involved in this procedure. Proper safety procedures will be explained during this hands on training. If you need help in any area, ask your leadman or shift foreman for instructions.

In the following text, a ship will be referred to as a tank vessel. The person in charge will be referred to as PIC. Reference numbers on some of the key regulations which apply to our operation will be noted. If you are not knowledgeable in the applicable regulations, research them to become informed.

1. The actual spotting of the tank vessel will be by the foreman. He will direct the mate as to where to spot the vessel manifold for hookup.
2. The leadman and river crew will use the tug to take the vessel's mooring lines to tie up points at PPG's dock and pile clusters to secure the vessel. Once the vessel is secure the gang plank can be lowered and secured.

3. Do not board the vessel if it is under quarantine. The foreman will notify you if this condition exists. Quarantine can also be determined by a yellow flag flying from the ship's mast. You may board the vessel after receiving notice that the quarantine has been lifted.
4. Throughout the loading procedure, you will work closely with an inspector or gauger. His job includes gauging of shore and vessel tanks before and after loading, collecting samples of cargo, determining tonnages to be loaded, and inspection of the vessel's tanks. You will be performing some of these tasks with the gauger.
5. Obtain shore tank numbers from the loading orders, leadman, or shift foreman. Verify these tanks with the gauger.
6. Contact the appropriate lead operator to secure and tag the tanks from which loading will be done. Verify tank numbers with the lead operator and check to be sure the tanks have been cleared for loading.
7. Line up the transfer piping from the dock to the shore tanks. Refer to Standard Barge Loading Task Detailing for line up procedures.
8. Block and tag all valves not being used on the piping line up for the product to be loaded. Any valve, tank, or line entering the loading header must be tagged out.
9. After the shore tanks are gauged, line up is completed and all tagging has been done, get approval from the gauger and person in charge of the vessel before hooking up. The gauger will give his approval after verifying that the vessel's tanks are good to load.

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10. A transfer conference is held between the tankerman, gauger, foreman and the person in charge of the vessel to discuss the various conditions for loading. The tonnage to be loaded and ship or shore stop will be agreed upon, and a Declaration of Inspection will be completed by the tankerman and the PIC of the vessel. Refer to CFR 33, Part 156.150 for information concerning the Declaration of Inspection.
11. As the PIC of the facility, you have many responsibilities before and during loading. See CFR 46, Subchapter O, Part 151.45-4e.
12. A sufficient number of personnel must be on duty to perform transfer operations. See CFR 46, Part 151.45-4. When the transfer involves more than one type of product, such as a solvent and caustic, an additional tankerman is required.
13. You must have continuous two-way voice communication between the dock and the vessel. See CFR 33, Part 154.560 - Communications. Ship must have someone who speaks English.
14. Once approval has been given to begin loading, hook up the appropriate product hose. Start the hook up with the ground cable. It is the first thing on and the last off. Hose connections and all hook up procedures must meet special CFR requirements. Be informed in these.
15. When loading solvent ships with material that is borderline on moisture slowly purge product through the loading line with nitrogen. In addition, if the ship requests a nitrogen pad, purge in the same manner for approximately the last 30 minutes of loading.

Note: Per Tri 2688 must be called to let them know nitrogen is being used. No need to call them just to blow lines into ship or barges.

16. Be sure the vessel is getting flow before the pump is started.
This can be done by gravitation to avoid excessive flow in case a problem exists. If the tank levels are low, it may be necessary to bump the pump to start flow to the vessel. (To bump the pump is to start and stop the pump for a few seconds at a time rather than letting it run.)
17. After the pumps are started and transfer begins, one person will walk along the transfer piping to check for leaks, improper line up, etc. In addition, check the hoses to be sure they are not leaking.
18. A starting temperature must be taken from the shore tank. In addition, the line temperature must be taken after transfer has been going for about 15 minutes, and at one hour intervals thereafter. These temperature readings must be recorded. The tankerman helper will complete this task during loading.
19. The tankerman helper will gauge the tank level during the loading process. On transfers of short duration, gauge and record the level every hour. Gauge and record levels every two hours during transfers of long duration.
20. The transfer of solvents will be stopped after 30 to 45 minutes to sample the vessel tanks. The surveyor will take these "starting samples", as well as final samples. Loading can be resumed once the Lab has cleared the starting samples.

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21. During caustic loading, a line or drip sample will be taken for each tank used during the transfer. This sample is to be started at the beginning of each transfer, changed for each tank, and checked periodically to prevent spills via overflowing. The surveyor will work with you in collecting these samples.
22. The surveyor will collect all samples on a tank vessel. PPG personnel will assist in obtaining sample bottles, gauging tanks and taking temperature readings.
23. Check the hose, hose connections and hose supports periodically during the loading operation. Make adjustments as necessary.
24. The transfer of product will usually be stopped by the vessel, based on the levels of the tanks on board. If there is to be a shore stop, PPG will shut down the transfer based on a predetermined shore tank level. (NOTE: Whether the transfer would be shore stop or ship stop would have been determined during the transfer conference before loading began.)
25. Final gauging of tank levels is to be done by the surveyor and the PIC of the dock. The PIC must verify the tank levels, tonnages and temperature readings, which should be recorded in the surveyor's logbook and on the PPG loading form. The PIC must sign the surveyor's logbook.

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26. All samples and the completed original copy of the loading form are to be sent to the Lab. The foreman and surveyor must be in agreement as to the final tonnage loaded before the vessel can be released. Most ships require that product samples be cleared by the Lab before sailing. The foreman will call any necessary Lab personnel and notify you when the samples have cleared.
27. Once the vessel has been cleared to leave, the lines are to be disconnected similar to the tie up procedures when the ship docked.