



No Hand Pouring of Liquid  
Category I Pesticides

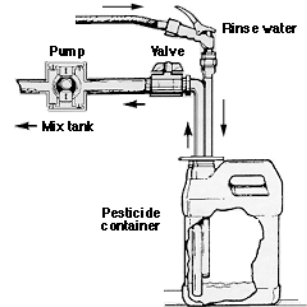
STATE OF CALIFORNIA  
DEPARTMENT OF FOOD AND AGRICULTURE

**Criteria for Closed Liquid Pesticide Systems**

Information also available in Pesticide Safety Information (PSIS) A-3

Employers shall provide closed systems for employees who mix or load liquid pesticides in toxicity category one, or load diluted liquid mixes derived from dry pesticides in toxicity Category I (one) for the production of an agricultural commodity. **No employee shall be permitted to transfer, mix, or load these pesticides except through a closed system.** The system's design and construction shall meet the director's closed-system criteria. This requirement does not apply to employees who handle a total of one gallon or less of pesticides in toxicity Category I per day exclusively in original containers of one gallon or less.

1. The liquid pesticide shall be removed from its original shipping container and transferred through connecting hoses, pipes, and/or couplings that are sufficiently tight to prevent exposure of any person to the pesticide concentrate, use dilution, or rinse solution.
2. All hoses, piping, tanks, and connections used in conjunction with a closed liquid pesticide system shall be of a type appropriate for the pesticide being used and the pressure and vacuum to be encountered.
3. All sight gauges shall be protected against breakage. External sight gauges shall be equipped with valves so that the pipes to the sight gauge can be shut off in case of breakage or leakage.
4. The closed system shall adequately measure the pesticide being used. Measuring devices shall be accurately calibrated to the smallest unit in which the material is being weighed or measured. Consideration must be given to any pesticide remaining in the transfer lines as to the effect on accuracy of measurement.
5. The movement of a pesticide concentrate, beyond a pump by positive pressure, shall not exceed pressure of twenty-five (25) pounds per square inch.
6. A probe shall not be removed from a container except when:
  - (a) The container is emptied and the inside of the container and the probe have been rinsed in accordance with 8 below;
  - (b) The Department of Food and Agriculture has evaluated the probe and determined that by the nature of its construction or design, it eliminates significant hazard of worker exposure to the pesticide when withdrawn from a partial container; or
  - (c) The pesticide is used without dilution and the container has been emptied.
7. Shut off devices shall be installed on the exit end of all hoses and at all disconnect points to prevent leakage of pesticide when the transfer is stopped and the hose removed or disconnected.
  - (a) If the hose carried pesticide concentrate and has not been rinsed in accordance with 8, a dry coupler that will minimize pesticide drippage to not more than two milliliters per disconnect shall be installed at the disconnect point.
  - (b) If the hose carried a pesticide use dilution or rinse solution, a reversing action pump or a similar system that will empty the hose and eliminate dripping of liquid from the end of the hose may be used as an alternative to a shut off device.



Example of a closed system

8. When the pesticide is to be diluted for use, the closed system shall provide for adequate rinsing of containers that have held less than 60 gallons of a liquid pesticide. Rinsing shall be done with a medium, such as water, that contains no pesticides.
  - (a) The rinsing system shall be capable of spray rinsing the inner surfaces of the container and the rinse solution shall go into the pesticide mix tank or applicator vehicle via the closed system. The system shall be capable of adequately rinsing the probe (if used) and all hoses, measuring devices, etc.
  - (b) A minimum of 15 pounds pressure per square inch shall be used for rinsing.
  - (c) The rinsing shall be continued until a minimum of one-half of the container volume or 10 gallons, whichever is less, of rinse medium has been used.
  - (d) The rinse solution shall be removed from the pesticide container concurrent with introduction of the rinse medium.
  - (e) Pesticide containers shall be protected against excessive pressure during the container rinse operation. The maximum container pressure shall not exceed five (5) pounds pressure per square inch.
  
9. Each commercially produced closed system or component to be used with a closed system shall be sold with a complete set of instructions on its operation. These instructions shall consist of a functional operating manual and a decal and/or system of decals placed on the system covering the basic operation.

The instructions shall include specific directions for cleaning and maintenance of the system on a scheduled basis. The instructions shall also describe any restrictions or limitations relating to the system such as pesticides that are incompatible with materials used in the construction of the system, types (or sizes) of containers or closures that cannot be handled by the system, any limits on ability to correct for over measurement of a pesticide, or special procedures or limitations on the ability of the system to deal with partial containers.

Please call the Fresno County Department of Agriculture Environmental Protection Division at (559) 456-7373 with any questions.

