

302 KAR 31:040. Storage and handling of pesticides and bulk fertilizer.

RELATES TO: KRS Chapter 217B, 40 C.F.R., 49 C.F.R., 42. U.S.C. 9601

STATUTORY AUTHORITY: KRS 217B.050(1)

NECESSITY, FUNCTION, AND CONFORMITY: KRS 217B.050(1) authorizes the department to promulgate administrative regulations prescribing the methods of storing fertilizers and pesticides. This administrative regulation establishes requirements for the storage and handling of pesticides and bulk fertilizers at commercial facilities.

Section 1. Definitions.

- (1) "Best management practices" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. Best management practices also includes treatment requirements, operating procedures, practices to control facility run-off, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
- (2) "Bulk fertilizer" means dry or liquid fertilizer in any unpackaged quantity.
- (3) "Bulk pesticide" means a pesticide that is held in a nonmobile container in an undivided quantity greater than:
 - (a) 300 U.S. gallons of liquid measure; or
 - (b) 300 U.S. pounds of net dry weight.
- (4) "Commercial purpose" means selling a pesticide or fertilizer for compensation or other consideration.
- (5) "Commercial storage facility" means a site used for a commercial purpose that, in a year, sells, uses, stores, mixes, repackages, or transfers from one (1) container to another more than:
 - (a) 300 U.S. gallons of liquid pesticide;
 - (b) 300 U.S. pounds of a dry pesticide;
 - (c) 5,000 U.S. gallons of a liquid bulk fertilizer; or
 - (d) Twenty-five (25) tons of dry bulk fertilizer.
- (6) "Elephant ring" means a temporary operational containment device:
 - (a) With an open top that has a storage capacity of:
 1. Not less than twenty-five (25) U.S. gallons; and
 2. Not more than 100 U.S. gallons; and
 - (b) Used for recovering spillage and leakage from a transfer connection or pump.
- (7) "Fertilizer" is defined by KRS 217B.040(8), but for purposes of this administrative regulation shall not include anhydrous ammonia fertilizer material or fertilizer packaged for household use.
- (8) "Impervious" means restricting the passage of water at a rate greater than 1×10^{-6} centimeters per second.
- (9) "Impregnation" means the application of a pesticide onto fertilizer.
- (10) "Liquid fertilizer" means fertilizer in fluid form, including solutions, emulsions, suspensions, and slurries.
- (11) "Liquid pesticide" means any pesticide in fluid form.
- (12) "Load" means the transfer of pesticide in an open storage container or bulk fertilizer from the storage facility to transport vehicles, application equipment, or mobile containers.
- (13) "Mobile container" means a container designed and used for transporting a pesticide or fertilizer.
- (14) "Operational area" means a site at a facility where the following occurs:
 - (a) Loading, unloading, repackaging, mixing, impregnation, or transferring of a pesticide or fertilizer; or
 - (b) Rinsing, washing, or cleaning of pesticide or fertilizer application equipment.

- (15) "Operational area containment" means any structure or system designed and constructed to effectively intercept and contain operational spills of fertilizer and pesticides, including rinsate or rain water resulting from any operational activity in an operational area.
- (16) "Pesticide" is defined by KRS 217B.040(2).
- (17) "Primary containment" means any storage container or device used to contain a bulk pesticide, fertilizer, or rinsate at a storage facility.
- (18) "Repackaging" means the transfer of bulk pesticides from one (1) storage container to another storage container.
- (19) "Rinsate" means water or other liquid resulting from the washing of equipment, operational areas, or containers used in the application, loading, unloading, mixing, transferring or storing of any fertilizer or pesticide.
- (20) "Roofed" means protected from precipitation.
- (21) "Secondary containment" means a dike, liner, structure, or other device used to:
- (a) Contain a product spill from a primary bulk storage container; and
 - (b) Prevent runoff or leaching.
- (22) "Storage container":
- (a) Means a container used for the storage of fertilizer or pesticides. A storage container includes a rail car, nurse tank, or other mobile container used for the storage of bulk fertilizers or pesticides; and
 - (b) Does not mean:
 - 1. A mobile container storing fertilizer or pesticide at a storage facility for less than fifteen (15) days if this storage is incidental to the loading or unloading of a storage container at the storage facility; and
 - 2. A container used solely for temporary emergency storage of leaking fertilizer or pesticide containers.
- (23) "Storage facility" means a commercial storage facility.
- (24) "Temporary operational containment" means any structure or system designed and constructed with the capability of movement between operational areas and designed to intercept and contain discharges from operational activities including the loading, unloading, repackaging, impregnation, and transfer of pesticides or fertilizer or the rinsing, washing, or cleaning of pesticide and fertilizer application equipment.
- (25) "Unload" means the transfer of pesticide in an open storage container or bulk fertilizer from the transport vehicle into the storage facility.

Section 2. Scope and Application.

- (1) A commercial storage facility shall register with the Kentucky Department of Agriculture, Division of Pesticide Regulation, and shall submit the Pesticide and/or Fertilizer Bulk Storage Facilities Registration form.
- (2) A commercial storage facility shall comply with this administrative regulation.
- (3) A commercial storage facility shall have a written emergency response plan to be followed in the event of an emergency. A plan required by another regulatory program may be used. The plan shall be available upon request of the KDA.
- (4) A commercial storage facility shall define the scope of the existing operation and facility at the time of registration.
- (5) A commercial storage facility shall be subject to SARA Title III, 42 U.S.C. 9601, and shall:
- (a) Be in full compliance by the required dates; and
 - (b) Accurately complete the required annual reporting form.
- (6) Unless performed in the field of application, the loading, unloading, mixing, and handling of dry bulk fertilizer shall be performed in accordance with Section 8 of this administrative regulation.

Section 3. Operational Area Site Specifications.

- (1) New permanent operational area containment located in a flood plain shall be protected from inundation by floods.
- (2) New permanent operational area containment shall be located a minimum of 100 feet from on-site wells and sinkholes, 200 feet from private domestic wells, and 400 feet from any community wells used as a public water source.

Section 4. Primary Containment of Liquid Pesticides and Liquid Fertilizer.

(1) Basic requirements.

- (a) A storage container and all equipment, including hoses, fittings, valves, clamps, and pumps shall be constructed, installed, and maintained so as to prevent the release of liquid fertilizer or pesticides.
- (b) Storage containers and all equipment, including hoses, fittings, valves, clamps, and pumps shall be constructed of materials that shall be resistant to corrosion, puncture, or cracking and shall be compatible with the product being stored.
- (c) A storage container and all equipment, including hoses, fittings, valves, clamps, and pumps used for the storage of a liquid fertilizer containing potassium chloride (muriate of potash) may be constructed of ferrous materials if:
 1. The container and all equipment, including hoses, fittings, valves, clamps, and pumps are coated or treated with protective substances; and
 2. The container or all equipment, including hoses, fittings, valves, clamps, and pumps is used for a storage period of not more than six (6) months, is completely emptied between storage periods, and is cleaned and inspected for leaks prior to being refilled.
- (d) Metals used for valves, fittings, or repairs on metal containers shall be compatible with the materials used in the construction of the storage container so the combination of metals does not cause or increase corrosion that could weaken the storage container or its all equipment, including hoses, fittings, valves, clamps, and pumps or create a risk of release.
- (e) Storage containers and all equipment, including hoses, fittings, valves, clamps, and pumps shall be designed to handle all operating stresses, taking into account static head, pressure buildup from pumps and compressors, and any other mechanical stresses to which the storage containers and all equipment, including hoses, fittings, valves, clamps, and pumps could be subjected to in the foreseeable course of operations.
- (f) Storage containers shall be properly labeled during active use of the container.

(2) Prohibition against underground storage and plumbing.

- (a) The storage of liquid fertilizer or pesticide in an underground storage container shall be prohibited unless an impervious catch basin is used for the temporary collection of run-off or rinsate from containment or operational areas and it is emptied within seventy-two (72) hours of use.
- (b) Underground plumbing shall be restricted to the use of concentric piping.

(3) Abandoned containers.

- (a) Storage containers and other containers used at a storage facility to hold liquid bulk fertilizer or pesticide, or pesticide and fertilizer rinsate shall be considered abandoned if they have been out of service for more than six (6) months due to a weakness or leak, or have been out of service for any reason for more than two (2) years without integrity tests having been performed.
- (b) Abandoned aboveground containers shall be thoroughly cleaned. All hatches on the containers shall be secured and all valves or connections shall be severed or sealed.
- (c) A secondary containment facility shall not be considered abandoned for the sole reason that there have been no releases into the secondary containment.

(4) Prohibited materials.

(a) Storage containers and shall not be constructed of copper, brass, zinc, or copper base alloys.

(b) Storage containers and used for the storage of liquid fertilizers containing phosphate or chlorides shall not be constructed of aluminum alloys.

(c) Storage containers and used for the storage of low ph (<5) liquid fertilizers shall not be constructed of ferrous materials other than stainless steel unless the materials are coated or treated with protective substances.

(d) Storage containers used for the storage of low-pressure nitrogen solutions shall not be constructed of mild steel, fiberglass, polyolefins, or plastic. This prohibition shall not extend to nonpressure solutions commonly referred to as twenty-eight (28), thirty (30), or thirty-two (32) percent nitrogen solutions. This prohibition against the use of mild steel shall not extend to aqua ammonia.

(e) Storage containers used for the storage of phosphoric acid shall not be constructed of ferrous materials other than stainless steel unless the container is lined with a suitable substance based on contents.

(5) Filling storage containers. Storage containers shall not be filled beyond the capacity for which they are designed.

(6) Pipes and fittings. Pipes and fittings shall be adequately supported to prevent sagging and possible breakage due to gravity and other forces that could be encountered in the ordinary course of operations. Underground plumbing shall be prohibited except as established in subsection (2)(b) of this section.

(7) Liquid level gauging device.

(a) Every storage container shall be equipped with a liquid level-gauging device by which the level of liquid in the storage container can be readily and safely determined. A liquid level-gauging device shall not be required if the level of liquid in a storage container can be readily and reliably measured by other means.

(b) Liquid level gauging devices shall be secured in a safe manner to protect against breakage or vandalism.

(c) External sight gauges shall be prohibited.

(8) Venting. Storage containers shall be vented to manufacturer's specifications for the product being stored in the container.

(9) Facility inspection and maintenance by owner or operator. Inspections by the operator shall be conducted quarterly to assure the early detection of cracks and other defects that could compromise the integrity of the primary containment. Repairable defects that occur in a primary containment shall be sealed or repaired immediately.

Section 5. Secondary Containment of Liquid Bulk Pesticide and Liquid Bulk Fertilizer.

(1) A nonmobile storage container for liquid bulk pesticides and liquid bulk fertilizer shall be located within a secondary containment.

(2) Basic requirements shall include:

(a) The floor and walls of a secondary containment structure shall be constructed of:

1. Concrete;
2. Concrete block that has been capped and filled with concrete;
3. Steel; or
4. Another impervious material compatible with the product being stored;

(b) The floor and walls of a secondary containment structure that contains a pesticide shall be constructed of material that shall maintain structural integrity under fire conditions;

(c) Secondary containment structures shall not have relief outlets or release valves;

(d) Underground plumbing shall be prohibited except as established in Section 4(2)(b) of this administrative regulation;

- (e) Secondary containment may provide for the separation between bulk pesticides and bulk fertilizer to the extent that a common wall or curbing exists between the fertilizer and pesticide areas and shall provide for the interception and recovery of materials including clean-up of pesticide releases. The entire secondary containment area shall meet or exceed the total capacity requirements established in this section;
- (f) Secondary containment structures shall be cleaned and rinsed within seventy-two (72) hours after any release into the secondary containment;
- (g) An inspection shall be conducted quarterly by the owner or operator to assure the early detection of cracks or other defects that could compromise the integrity of the secondary containment.
 - 1. Repairable defects that occur in a secondary containment shall be sealed or repaired immediately.
 - 2. Inspections shall be documented in a legible and accurate form;
- (h) Containers, pipes, hoses, and valves shall be protected against anticipated risks of damage by trucks and other moving vehicles;
- (i) Clay, natural soil clay mixtures, or clay and bentonite mixtures shall not be used to contain any bulk pesticide;
- (j) Temporary operational containment or elephant rings shall not be used as secondary containment for any bulk pesticide; and
- (k) Secondary containment structures shall include a sump or collection point for collection of spillage, leakage, rinsate, or other residues.
 - 1. A sump or collection point shall not be greater than two (2) feet deep and shall not contain more than 109 U.S. gallons.
 - 2. A sump shall be cleaned and rinsed within seventy-two (72) hours of use.
- (3) Secondary containment structures shall provide the following capacity:
 - (a) If not roofed, the containment shall have a minimum containment volume that equals 110 percent of the capacity of the largest tank and the volume displaced by the bases of the other tanks located within the secondary containment structure;
 - (b) If roofed, the containment shall have a minimum containment volume of 100 percent of the capacity of the largest tank plus the volume displaced by the bases of the other tanks located within the secondary containment structure; and
 - (c) If tanks are plumbed together without valves, any connected tanks shall be considered a single tank for calculation purposes.
- (4) Basic requirements for the secondary containment of liquid fertilizer.
 - (a) Secondary containment shall be provided that meets or exceeds the requirements in subsection (2) of this section.
 - (b) Secondary containment shall be constructed to a water permeability rate of 1×10^{-6} centimeters per second and maintained so that liquid movement through the walls and base does not exceed a rate of 1×10^{-5} centimeters per second permeability rate. The secondary containment structure shall be designed and maintained to withstand a full hydrostatic head of any contained liquid.
 - (c) Synthetic materials or liners may be used as secondary containment if they are compatible with the substances being contained and are installed according to manufacturer's recommendations. These directions and recommendations shall be maintained at the storage facility.
 - (d) Earthen walls used for secondary containment of fertilizer shall be protected against erosion.
 - 1. Side slopes shall not exceed a three (3) to one (1) ratio of horizontal to vertical.
 - 2. The top width of earthen walls shall not be less than two and one-half ($2 \frac{1}{2}$) feet.
 - (e) Provisions shall be made for safe emergency access and exit to and from the secondary containment structure.

- (f) Floors shall be constructed to allow the safe and expeditious removal of precipitation or any spilled liquid to a collection point.
 - (g) A soil liner used for secondary containment of fertilizer shall be constructed of suitable soil or soil treated with bentonite clay or other comparable material, with a minimum depth of twelve (12) inches, if the other requirements stated in this section are met. The liner shall be covered by a soil or smooth aggregate layer not less than six (6) inches thick and shall be maintained to prevent cracking or puncture.
 - (h) Prefabricated secondary containment devices shall be constructed of a rigid prefabricated basin having both a base and walls constructed of steel, reinforced concrete, synthetic liner, or synthetic materials that are resistant to corrosion, puncture, or cracking.
- (5) Exemptions from secondary containment.
- (a) A liner shall not be required to be installed directly under a storage container having a capacity of 100,000 gallons or more that has been constructed on site and put into use prior to August 1998 if:
 - 1. A second bottom made of steel shall be constructed for the storage container. The second bottom shall be placed over the original bottom and a layer of smooth fine gravel or coarse sand having a minimum thickness of three (3) inches shall be installed between the layers;
 - 2. The original bottom of the storage container is tested for leaks before the sand layer or second bottom is installed. A record of the test shall be maintained at the storage facility;
 - 3. The newly constructed bottom is tested for leaks before any liquid fertilizer is stored on the newly constructed bottom. A record of the test shall be maintained at the storage facility; and
 - 4. There is a method by which leaks from the newly constructed bottom into the sand layer shall be readily detected unless the storage containers are constructed of nonferrous materials that have a protection system in place consisting of synthetic liners and monitoring system.
 - (b) The secondary containment requirements established section shall not apply to railcars that are periodically transferred to and from storage.
- (6) A storage facility with existing secondary containment on site and in place on August 17, 1998, shall be exempt from this section if:
- (a) All requirements established in Section 4 of this administrative regulation are met;
 - (b) All requirements established in subsection (2) of this section are met; and
 - (c) A minimum secondary containment capacity of 110 percent of the largest container plus the volume displaced by the other tanks located within the secondary containment structure exists.

Section 6. Operational Containment for Pesticides and Liquid Fertilizer.

- (1) The transfer of a pesticide or liquid fertilizer between storage containers at a commercial facility shall be performed within impervious operational containment designed to intercept, retain, and recover an accidental release or leakage of rinsate and residue. Transfer shall include:
 - (a) Loading
 - (b) Unloading;
 - (c) Repackaging;
 - (d) Impregnating;
 - (e) Mixing; or
 - (f) The cleaning of equipment.
- (2) Temporary operational area containment may be used in lieu of impervious operational containment for loading or unloading of rail cars or barges.

(3) The basic requirements for permanent operational containment structures for a pesticide and a liquid fertilizer shall include:

(a) The construction and the design of a containment structure shall be compatible with the products handled and be maintained in a condition to retain recovered material until it is properly disposed of or use;

(b) Operational containment shall be constructed of reinforced concrete or other impervious materials compatible with the products being handled;

(c) The owner or operator, to assure the early detection of cracks and other defects that could compromise the integrity of the operational containment structure shall conduct inspections at least quarterly.

1. Repairable defects that occur in an operational containment structure shall be sealed or repaired immediately.

2. Inspections shall be documented in a legible and accurate form;

(d) Storm water drainage shall be diverted away from all operational containment structures;

(e) Operational containment shall include a sump or collection point for the temporary collection of spillage, leakage, rinsate, or other residues.

1. A sump or collection point shall not be greater than two (2) feet deep nor contain more than 109 U.S. gallons.

2. A sump shall be cleaned and rinsed within seventy-two (72) hours of use;

(f) Operational containment shall not have a relief outlet or release valve;

(g) Operational containment shall be large enough in area to prevent spillage onto unprotected areas and to prevent any release to the surrounding environment; and

(h) The use of underground plumbing shall be prohibited except as established in Section 4(2)(b) of this administrative regulation.

(4) Operational containment shall provide that:

(a) Operational area containment for a roofed permanent structure shall have a volume sufficient to contain a minimum of 1,000 U.S. gallons. Containment capacity of the sump shall be figured in addition to the containment capacity of the structure; and

(b) Operational area containment for an unroofed permanent structure shall have a volume sufficient to contain a minimum of 1,250 U.S. gallons. Containment capacity of the sump shall be figured in addition to the containment capacity of the structure.

(5) Temporary operational containment may be utilized to meet the requirements of this section if:

(a) The capacity of temporary operational containment shall not be less than 1,250 U.S. gallons; and

(b) The temporary operational containment shall be constructed of material that shall be compatible with products handled and a written copy of the manufacturer's installation directions, compatibility statement, and expected life expectancy is maintained at the storage facility; and

(c) All requirements established in subsection (3) of this section are met.

(6) An elephant ring may be utilized to meet the requirements of this section if a minimum capacity of twenty-five (25) U.S. gallons is provided for the use of recovering spillage and leakage from the transfer connections and pumps associated with the unloading of a truck, barge, or railcar into a storage facility.

(7) A combination of an elephant ring and concentric piping may be utilized to meet the requirements of this section if a minimum capacity of twenty-five (25) U.S. gallons is provided for the use of recovering spillage and leakage from the transfer connections and pumps associated with the loading or unloading of a railcar or barge.

Section 7. Containment of Dry Bulk Pesticides.

- (1) A nonmobile storage container for dry bulk pesticides shall be located within secondary containment.
- (2) Dry bulk pesticide storage shall be segregated from other containment areas and be segregated by a six (6) inch curb of an area that extends at least two (2) feet beyond the perimeter of the walls of the storage container.

Section 8. Dry Bulk Fertilizer Storage and Handling.

- (1) Dry bulk fertilizer material shall be stored and handled using best management practices.
- (2) Dry bulk fertilizer shall be stored inside a structure or device having a cover or rooftop, sidewalls and base sufficient to prevent contact with precipitation and surface waters.
- (3) The loading, unloading, mixing, or handling of dry bulk fertilizer, unless performed in the field of application, shall be conducted in a manner to provide for the collection and reuse of any spilled fertilizer.

Section 9. Containment Management.

- (1) A pesticide, fertilizer, pesticide residue, fertilizer residue, or rinsate recovered from secondary or operational containment shall be field applied at agronomic rates, used in a liquid mixing operation, or otherwise recycled or disposed of in accordance with the product label.
 - (a) A pesticide residue or rinsate that is to be land applied shall be handled in accordance with the product labels.
 - (b) Rinsates may be used to make up the total spray mixture if the mixture does not exceed the pesticide label application rates.
- (2) Best management practices shall be used to keep rinsate and other recovered material segregated by compatible uses.
- (3) Uncontaminated precipitation collected shall be discharged from containment areas. Contaminated precipitation shall be field applied pursuant to subsection (1) of this section.
- (4) Recovered or rinsate material collected in a containment system shall not be considered a hazardous waste unless it is determined that the rinsate or other recovered material cannot be applied to a labeled target area.

Section 10. Distribution.

- (1) Sale by weight or meter shall be the approved method of resale for pesticides and fertilizer. Both methods shall meet the specifications, tolerances, and other technical requirements for weighing and measuring devices as determined by the Kentucky Department of Agriculture.
- (2) A separate meter shall be required for each product distributed for sale if the product is sold through a meter.

Section 11. Incorporation by Reference.

- (1) The "Pesticide and/or Fertilizer Bulk Storage Facilities Registration form", October 2019 is incorporated by reference.
 - (2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Kentucky Department of Agriculture, Division of Pesticide Regulation, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m.
- (24 Ky.R. 2243; Am. 25 Ky.R. 308; eff. 8-17-98; 29 Ky.R. 2142; 2454; 4-11-2003; Crt eff. 2-18-2020; 46 Ky.R. 1621, 2232; eff. 2-26-2020.)