

Safe disposal of empty pesticide containers

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Introduction

This Primefact is adapted from the Spray Sense series.



Read the label

The NSW Pesticides Act, 1999 requires all pesticide users to follow the label recommendations for disposal methods. The label is a legal document, so it is important that you read it and understand the disposal requirements before getting rid of containers. This section outlines several techniques to help you dispose of pesticide containers **safely** and **legally**.

Rinse empty containers

In most Australian states, containers that have not been properly rinsed are classified as hazardous waste. Discarded, unrinsed and improperly rinsed empty containers are a health risk to the people who handle them, and they can contaminate the environment. They are a potential danger to public health, domesticated animals, plants, soil, wildlife and the environment.

Rinsing methods

When you are rinsing a pesticide container make sure you wear the correct PPE as recommended on the label. The chemical remaining in the container is a concentrate, the most hazardous form of the chemical. There are a number of

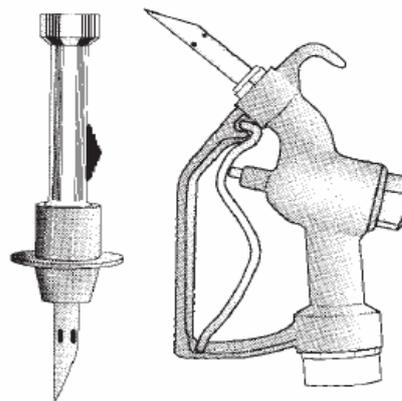
different techniques for rinsing pesticide containers including:

1. Piercing nozzle

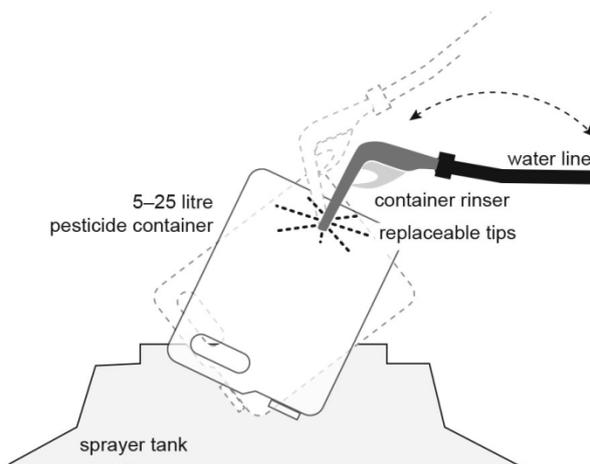
This manual method uses a specially-designed nozzle to pierce the container and force the remaining product out into the spray tank. Use clean water at 200 – 300kPa (30 – 45psi). The rinsate is returned to the spray tank.

Definition - *Rinsate is a mixture of pesticides diluted by water, solvents, oils, commercial rinsing agents or any other substances. It is produced from cleaning pesticides application equipment or pesticides containers. Source EPA*

Typical piercing nozzles



(Source: North Dakota State University Agriculture and University Extension - Copyrighted)

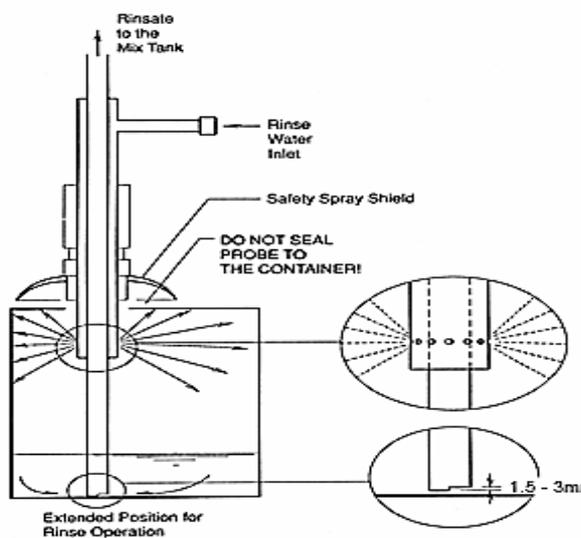


Note: use 'rocking', 'twisting' or 'wobbling' motion to make sure spray hits bottom of container; or pierce side of container instead of bottom.

(Source: North Dakota State University Agriculture and University Extension - Copyrighted)

2. Suction - Rinse Probe transfer systems

This system initially uses a probe to suck the contents of the container into the spray tank. Next the high pressure nozzles are turned on while the probe sucks the rinsate into the mixing tank. Rinse for 3 to 5 minutes;



(Source: North Dakota State University Agriculture and Extension - Copyrighted)

This is a particularly good option for larger containers that are too heavy to lift above the spray tank, for example 200 litre drums.

3. Induction hopper

An induction hopper is attached to the sprayer or can be purchased as separate unit. They consist of a hopper adjustable to a convenient height for easy tipping of pesticide containers. When the container is empty they have either a nozzle or

probe that is used to spray water into the container, the rinsate is then caught in the hopper and transferred into the spray tank. Hopper units are available from several spray equipment manufacturers.

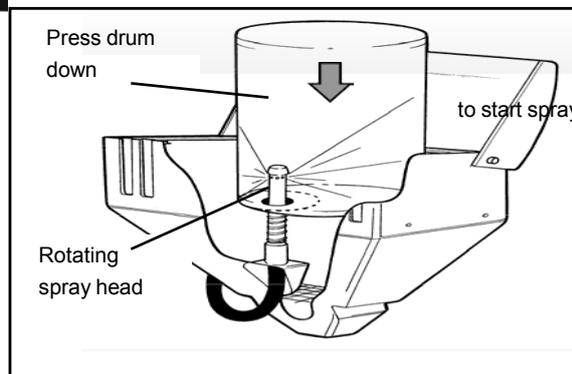


Image kindly supplied by 

- [Samples of separate pesticide induction handlers](#)

4. Rinsing attachments

Attachments that can be used to rinse plastic and paper bags are available with some of the induction hopper units.

5. Triple rinsing

Triple rinsing is a three-stage manual rinsing process. The empty container is $\frac{1}{4}$ filled with clean water, the cap replaced and the container shaken, rotated, rolled and inverted vigorously for at least 30 seconds. The rinsate is then added to the spray tank, allowing the container to drain for at least 30 seconds after the flow has stopped. The rinsing procedure is then performed two more times before the container is allowed to completely dry.

For containers that are too large to shake:

Empty remaining contents into the application equipment or a mix tank, fill the container $\frac{1}{4}$ full with clean water, replace and tighten bungs, tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds, tip container over and repeat so the clean water gets into all corners. Drain container for 30 seconds after the flow has stopped. Repeat 3 times.

Ensure thread and bungs are thoroughly clean. Larger drums are usually recycled so their bungs should be reinserted after cleaning and drying.

Cleaning a container by triple rinsing involves twice as many steps and takes about four times as long as pressure rinsing. However it does not need any special equipment.

Comparison of triple and pressure rinsing

Features	Pressure Rinsing	Triple Rinsing
Number of Steps	8	17
Time Spent per Container	1 - 2 min	4 - 9 min
Special Equipment Needed	Rinse Nozzle/high pressure water	None

Source: *Guidelines on Management Options for Empty Pesticide Containers*
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS MAY 2008

6. Other packaging material

Paper, cardboard, plastic or other packaging material that has come in contact with a pesticide should be stored safely until disposal. Paper or cardboard packaging should be well shaken, punctured or shredded and plastic bags should be rinsed once to remove any pesticide residue prior to either storage or disposal.

The cleaning methodology to be used depends on the physical and chemical characteristics of the pesticide. In all cases instructions for cleaning the container will be included in the product label and product safety data sheets.

7. Oil and solvent based products

For pesticides that are formulated in a solvent or oil and are not water soluble or dispersible, the rinsing process has to use a solvent as the rinsing medium. Solvent rinsates may not be suitable for adding to the tank mix product for application, in which case they have to be treated as pesticide waste and be disposed of in an environmentally sound manner.

It is important to note that an inappropriately selected cleaning methodology will be at best ineffective and at worst dangerous. For example some pesticide formulations are water reactive and, if the containers were triple rinsed, there could be a violent reaction.

How to dispose of empty containers

Puncture metal containers, unless they are marked as returnable or recyclable, to assist the draining process, containers should be punctured from the inside. For example, drive a crowbar or

spike through the container opening and puncture its base, then let the container dry completely (this may take a couple of days) and store in a dry place before disposal.

Remove cleaned lids and store separately to reduce the chance of the container being reused.



drumMUSTER is a national collection and recycling scheme that provides a solution to the problem of disposing of used non-returnable chemical containers.

Since 1 February 1999 farmers have paid a 4c/L or /kg levy on non-returnable chemical containers bigger than 1 L or 1 kg. This levy funds **drumMUSTER**.

Local councils or other collection agencies enter into a commercial agreement with **drumMUSTER** to collect drums on **drumMUSTER**'s behalf.

drumMUSTER collects the empty drums. Farmers are then able to deliver cleaned (i.e. triple or pressure rinsed and free of visible residues) used containers to designated collection points, where they are inspected and either accepted or rejected.

The eligibility criteria for containers to be accepted into the **drumMUSTER** program is; rigid walled steel or plastic containers greater than 1 litre or kilogram up to 205 litres or kilograms with the volume noted on the product label.

Note - **drumMUSTER** does not recommend the piercing of plastic pesticide containers.

Only containers with

drumMUSTER eligible container

printed on the label, as a sticker or embossed on the container are accepted.



To contact **drumMUSTER**, visit the **drumMUSTER website** or **send an email**. Alternatively, phone 1800 008 707 or 02 6230 6712.

Intermediate Bulk Containers (IBC)

These are bulk pesticide containers that hold between 450 and 3000 Litres/Kilograms of material. The Environment Protection Authority (EPA) requires that they be recycled. There are a number of different companies that recycle them

and all have different rules about cleaning. As a general rule they should be triple rinsed or pressure washed and dried before returning to supplier or recycler.

Burning restrictions

Do not burn empty (even properly rinsed) plastic or paper containers or packaging material on-farm as toxic fumes will be given off.

Pesticide labels clearly state that burning of empty containers is illegal. Such action could result in your prosecution by the regulatory powers of the EPA, which administers The Pesticide Act.

Burial of containers

Burying rinsed pesticide containers at the place of use is not a good idea. It potentially uses up scarce land and can be a danger to animals. Plastic containers are highly stable and do not biodegrade. If buried, they will remain intact indefinitely. Burying containers is not permanent because the void space inside them and their low density cause them to rise gradually to the surface of the soil.



ChemClear provides Australian agricultural and veterinary (agvet) chemical users with a collection and disposal pathway for their unwanted chemicals.

The chemicals ChemClear collects are classified as either Group 1 or Group 2 under the program. Group 1 are collected free of charge to the waste holders as a levy has been paid on these products at the point of manufacturer and passed on through distribution to the consumer at the point of sale. Participating manufacturers' chemical drums or labels display a logo which denotes to the ChemClear and *drumMUSTER* program eligibility. 108 manufacturers of agricultural and veterinary chemical are voluntary members of the program.

Group 2 chemicals include unlabelled or severely out of date products, mixed agvet chemicals and chemicals from non-participating manufacturers. Group 2 products attract a fee per litre charge as they are made by companies not participating in the stewardship programs.

Collections are scheduled based on the volume of chemical registrations received by region and

state across Australia. On average ChemClear undertakes 2-3 state collections and several local regional collections annually.

If you have unwanted agvet chemical register your chemicals for ChemClear to collect either:

- Via the [ChemClear website](#),
- Free call 1800 008 182,
- Complete and return a ChemClear Inventory Form or,
- Mail to ChemClear GPO Box 816 Canberra City

If your disposal requirements are urgent please contact ChemClear directly on **1800 008 182** and their team will be able to advise of any options available to you.

Source: ChemClear

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