

drumMUSTER
A joint initiative of NFF,
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Information, advice and supply of
Container Rinsing Equipment are
available from your local Agsafe
accredited premises.

Equipment is manufactured by
many businesses including:

Silvan Pumps and Sprayers
Hardi Pumps and Sprayers
Croplands Equipment

Other equipment is available
through your Agsafe accredited
reseller.

Note: The information contained in
this leaflet is based on the best
information available to Agsafe at
May 2002. The accuracy of the
information may change.

For professional advice on
chemical needs, proper application
rates and correct container
cleaning and disposal, contact
your local Agsafe accredited staff
and businesses.



drumMUSTER

the Agsafe standard for

Effective Rinsing of Farm Chemical containers

Rinse them out
Round them up
Run them in



RINSING IS A GOOD MANAGEMENT PRACTICE

Proper rinsing and cleaning are the first steps in the safe disposal and recycling of empty chemical containers. Clean containers are essential for meeting occupational health and safety standards in the recycling process.

Rinsing should be carried out **immediately after emptying** the container, as residues are more difficult to remove when dry.

Under current regulations in most states, containers that have not been properly rinsed can be classified as hazardous waste. Recycling is now possible for properly rinsed metal and plastic containers used for farm chemicals.

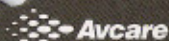
For information on procedures for draining and cleaning oil based, ultra low volume (ULV) and low volume (LV) insecticide sprays contact **drumMUSTER** on 02 6230 6712 or contact the manufacturer.

Rinsing makes good economic sense.

The following table shows the loss, at three different costs per litre for the product, from 150mL, 300 and 500mL of chemical when left behind in containers not thoroughly cleaned (300 mL represents 1.5% of a 20 Litre drum).

Amount of residue	Loss at \$20.00/litre	Loss at \$30.00/litre	Loss at \$50.00/litre
150 mL	\$3.00	\$4.00	\$7.00
300 mL	\$6.00	\$9.00	\$15.00
500 mL	\$10.00	\$15.00	\$25.00

drumMUSTER
partners



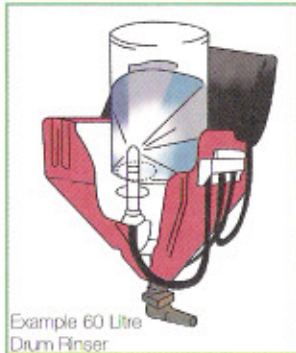
VMDA (INC)



NFF
NATIONAL FARMERS
FEDERATION
OF AUSTRALIA

METHODS TO PROPERLY RINSE CONTAINERS

1. PRESSURE RINSING



Example 60 Litre Drum Rinsing

Nozzles are used to spray water into the container and the rinsate is caught in the hopper and transferred to the spray tank. Devices are normally built into an induction hopper attached to the sprayer or are purchased as separate induction or filling units.

It is essential that clean water is used for the rinsing process.

The manufacturer's recommendations should be followed. The water pressure should be at least 3 Bar (300 kPa). The operation usually takes around 30 seconds and uses 15 litres of water per 20L container.

Always ensure that the rinsed containers are drained and allowed to dry.

The large capacity Silmix (shown above left) induction drum rinsing system is also for powders and dry granule formulations and has been designed to both operate as an option together with spraying machinery or independently at the filling station using only a mains pressure water supply.

The Hardi Filler hopper (not shown) has a measuring scale in the side and the 35L unit is fitted with a rinsing system for all containers. It can be used for liquid and dry (powder and granular) formulations.



PIERCING NOZZLE

A special nozzle designed to pierce the container, is attached to the end of a hose to force the remaining product from the container. Clean water at a pressure of 2 to 3 Bar (200-300 kPa) is required.

1. Empty the contents of the container into the spray tank and allow to drain for an extra 30 seconds after the flow reduces to drops.
2. Insert the pressure nozzle by puncturing through the lower side of the container and hold the container with the neck pointing down so the rinsate will run into the spray tank.
3. Turn the water on and rinse until the rinsate coming from the container is clear (this is normally at least 30 seconds). Gyrate the nozzle to rinse all inside surfaces.
4. Rinse the container cap when there is a clear stream of water coming out of the container.

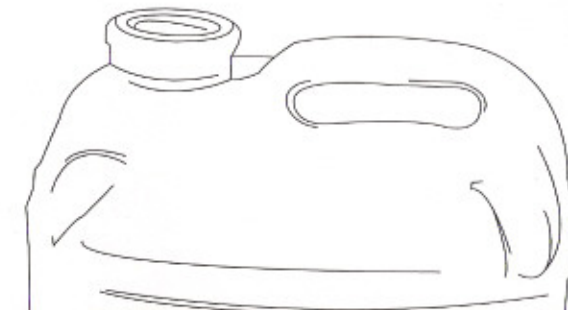
Always ensure that the rinsed containers are drained and allowed to dry.

PROBES AND "SUCKER FLUSHER" TRANSFER SYSTEMS

Several probe designs are available. These are used to extract the chemical concentrate, enable clean water to be introduced into the container during the extraction process to assist in the removal of viscous products, such as suspension concentrate formulations, and to rinse the container once it is empty. Rinsing must be done with clean water.

Probes, which deliver water through nozzles at the base of the probe, must be raised and lowered inside the container and turned from side to side through 90° while being raised and lowered to ensure thorough cleaning. After the contents have been removed with the initial flushing cycle, repeat the process to rinse the container three times using 5-7 litres of water per rinsing (about 15 seconds per rinsing cycle at 3 bar pressure).

Other probes have a flushing head which is positioned just inside the neck, at the top of the container, and a probe which slides through this fitting or unit to remove the contents. After the contents have been removed with the initial flushing cycle, continue flushing the container with 15-20 litres of water.



Always ensure that the rinsed containers are drained and allowed to dry. Wash outside of container, cap and neck (bottom).

2. TRIPLE RINSING



Triple rinsing (a three stage rinsing process)

1. Empty the contents of the container into the spray tank and allow the container to drain for an extra 30 seconds after the flow reduces to drops.



2. Fill the container with clean water between 20% and 25% of its capacity and replace the cap securely.

3. Shake, rotate, roll or invert the container vigorously for at least 30 seconds, so that the rinse water reaches all inside surfaces.



4. Pour the rinsate (the rinsing water from step 3) into the spray tank. Let it drain for an extra 30 seconds after the flow reduces to drops.

5. Repeat until the container has been rinsed three times.

For animal dips add the rinsate to the dip or medicated water.



For animal drenches dispose of the rinsate in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots.

Triple Rinsing 200L Containers

This operation will require two people.

1. Thoroughly drain the container to the lowest possible level.

2. Fill the container with clean water to 25% capacity. Replace and tighten the bungs.

3. Tip the container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds.

4. Stand the container on end and tip back and forth several times to rinse the corners. Turn the container to the other end and repeat this procedure.

5. Carefully empty the rinsate into the spray tank or suitable receptacle which must be emptied into the spray tank.

6. Repeat this procedure two more times.

7. Rinse both bungs in a bucket of clean water. After the containers have been drained and allowed to dry, screw the bungs back into the container.

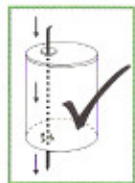
8. Empty the bucket of water used to rinse the bungs into the spray tank.

...ined and allowed to dry.
...h necks if twin neck).



ALWAYS FOLLOW THESE PROCEDURES:

1. Immediately after rinsing the container, look inside and make sure that all the product has been rinsed out.
2. Thoroughly clean the container thread and outside surfaces of the container with a hose into the spray tank. Rinse the cap separately in a bucket of water, and pour the rinsate into the spray tank.
3. Inspect the outside of the container, particularly the screw neck and threads, to ensure they are free of residues that flake, smear, or come off on a glove when touched.
4. Do not puncture plastic 20L containers included in reconditioning/re-use programs.



5. Steel containers should be punctured using a steel rod or crowbar. This should be done by passing it through the neck/pouring opening and out the base of the container.

6. To ensure the removal of all rinsate from an inverted container, rock the container vigorously to eliminate trapped liquid. This is especially important for metal containers.
7. Allow all containers to drain completely and air dry them (this may take a number of days) to ensure they do not retain any rinse water.
8. Store cleaned containers in a sheltered place with caps removed, where they will remain clean and dry until they can be taken to a **drumMUSTER** Collection Site.
9. Caps should not be placed on the container (except for 200L containers) but may be brought separately to a collection.

STANDARDS FOR CONTAINER CLEANLINESS

Inspection of containers at collection points is necessary to ensure that containers can be safely re-used, recycled or disposed of at authorised landfills. There must be no product residue on the inside or the outside of the container, including the thread and cap. Visible residues could be powder, flake, coloured / dark fluid or clear liquid.

The container must have been pressure rinsed, triple rinsed or fully cleaned with a mechanical rinsing device.

The container must have been drained and left to dry with the cap off after rinsing. The presence of any liquid in the container will result in rejection at a **drumMUSTER** collection.

A signed statement by the farmer or applicator provides evidence that the container has been rinsed (but this must be backed up by other evidence of rinsing).

The cap and the threads of the container opening must be free of residues. The container should have the labels on to provide inspectors with positive identification of the material being handled.

If a container is rejected the farmer or applicator should rinse the container back at the farm and use the rinsate to make up an application of the same chemical according to label recommendations.

Look for the logos below to identify a container that is eligible for drumMUSTER collection.



This container is eligible for reconditioning and refilling



This container is eligible for processing and recycling