

## Guidance Documents on Container Management

The plant science industry stewards its products throughout their lifecycles, from manufacture, distribution and use. In addition, following product use, the industry has developed programs around the world to collect and recycle empty containers.

The industry's primary objective for the Container Management Stewardship Program is to:

1. safely remove empty pesticide containers from the farm to protect people and the environment
2. eliminate their use for other purposes, and
3. safely dispose of the containers, primarily by recycling them into other useful industrial products, or for use as energy recovery.

Globally, since the early nineties, the crop protection industry has implemented empty container collection programs in over 40 countries and has initiated more than 25 pilot programs, with a recycling rate of 66% of all materials collected. The goal, by 2020, is to continuously improve the farmer return rate, and the number of countries with container management programs, collecting 50% of all the containers shipped into the global market and recycle as much as possible into tested and accepted end use applications.

To further improve the efficiency of the container management programs, the industry is also addressing container composition and design in order to assist in the process of end-of-life recycling.

CropLife International has developed a global steering/advisory body – the Container Management Project Team (CMPT) – to provide guidance and advice to individual country program managers on how to establish cost-effective, sustainable programs and to share best practices.

As part of these objectives, the International Container Management Project Team has developed a number of guidance documents. Please find these documents below, which are aimed to help both pilots and mature programs. They complement the overarching guidance document "*Roadmap for establishing a container management program for collection and disposal of empty pesticide containers*", which is freely downloadable from the CropLife International website [here](#)

### Contents:

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## 1. Guidance for Recycled End Use Applications for Plastic Pesticide Containers

With respect to the recycled end uses for plastic from empty pesticide containers the following guidance has been developed:

1. All empty plastic containers must be triple or pressure rinsed by farmers. (Note that rinsing should be performed immediately after emptying the container, with the rinsate deposited directly into the spray tank mixture)
2. Where possible the plastic containers should be recycled into new industrial products (end use applications) and this should undergo a risk analysis to show that there are no unacceptable risks to humans and the environment from the new use. The risk analysis should be undertaken by the individual country program, local government or other competent private or public organization. This includes plastic from both one-way trip containers, as well as plastic from multi-trip drums and totes at their end-of-life.
3. A list of tested and accepted end use applications for recycled industry plastic is available [here](#)
4. Plastic being recycled into unknown or untested end use applications is considered an industry risk.
5. All country managers or the local CropLife association are requested to submit an annual report to CropLife International on statistical results for the prior year that includes kilograms of container plastic collected and recycled, plus providing information on:
  - a. All end use applications for recycled industry plastic. This end use application list also includes: Are all end use applications known for plastic derived from one-way trip containers? Are all end use applications known for plastic from larger containers such as drums, totes or Intermediate Bulk Containers (IBC's), or end-of-life returnable/refillable containers? Are all end use applications been tested and assessed for risk and determine to be acceptable by the CropLife International CMPT or equivalent?
6. Based on the individual country report (point 5 above), the CropLife International CMPT, in collaboration with the country programs, will assess end use applications against the agreed CropLife International industry guidance outlined above. If compliance is considered unsatisfactory, the CMPT will offer technical or other assistance to aid in compliance to the above policies. Where necessary, the CMPT will inform stakeholders of end use applications that are considered too risky. The risk analysis used for approval or rejection of end use application will be available to stakeholders on request (for assessing the end use application). The CMPT will direct stakeholders to the relevant organization for assessments undertaken by other organizations).

## 2. Hard-to Rinse Containers

Hard-to rinse containers are containers that cannot be properly or easily rinsed using triple rinsing or pressure rinsing. - A good example of this is some seed treatment containers, or other formulations that stick to the inner surface of the container. The following guidance is recommended:

- a. Separate hard-to-rinse/contaminated containers at source. Do not rinse, or mix with recyclable containers
- b. Incinerate containers in approved waste incinerators or energy recovery facilities.
- c. If the program is based on a levy system, the need to place a higher levy such containers should be considered in order to recover the additional cost.

### **3. End-of-Life Collection & Recycling of Drums, Totes, or Intermediate Bulk Containers (IBC's)**

As a result of large scale agriculture, some countries require and use large volume agrochemical packaging, such as drums, totes, or intermediate bulk containers (IBC's). While these containers are sometimes designed as one-way trip containers, in most cases these larger containers are refilled and reused a number of times over a period of years. Eventually, when they reach their end-of-life, these containers will be contaminated as a result of many cycles of reuse. Accordingly, for environmental and human health and safety reasons, the residual plastic or steel from these containers will need to be safely disposed. For the disposal of highly contaminated plastic containers at their end-of-life, following removal of all non-plastic components on the container, it is recommended that this plastic be recycled for the recovery of heat energy at cement plants, or at waste-to-energy facilities.

All such facilities must be approved for this use by local authorities. Alternatively, some country programs recycle the shredded plastic in the same manner as plastic from smaller one-way trip containers, provided the plastic is properly washed and appropriately tested.

Steel drums and steel components from plastic containers, once thoroughly rinsed and cleaned, can be recycled at a steel recycling facility.

The responsibility for the recycling process can be more complex as ownership of such bulk containers may be with either the chemical manufacturer or with the local distributor. Nonetheless, the responsibility for the tracking, collection and appropriate recycling of these containers should remain with the owner.

#### 4. Collection and Adding Value to Caps

As a component of the primary packaging, it is recommended that the plastic caps be collected separately as part of the container collection process.

Container caps are normally made from polypropylene, which is recyclable. This is a different plastic than that typically used for the containers, which is normally high density polyethylene (HDPE).

The plastic container caps have value for recycling into recommended end uses. As such, the sale of this polypropylene can reduce the overall cost of the program. It is noteworthy that the Brazil Container Management Program, InPEV is currently recycling plastic from polypropylene caps into new container caps - thereby contributing positively to the program's cost reduction. (Polypropylene container caps in Brazil are classified as a non-hazardous recyclable material – they have an aluminum foil inside cover that prevents them from coming in contact with the product)

## 5. Small-size packaging

CropLife International member companies support the continued use of small packages for pesticides as they provide significant benefits for smallholder, particularly in terms of availability of inputs, responsible use, reduction of accidents and limitation of re-use. Pesticides provided in small packages allow low-income farmers to access to technology to optimize their farming outputs in an easy and affordable way according to local needs and conditions.

The industry defines a small package as a unit pack which contains less than 100 ml or 100 grams of product.

Small packages of pesticides have been developed and introduced to better suit smallholder needs:

- Necessity for high application accuracy due to limited stock e.g. Integrated Pest Management (IPM)
- Convenience in terms of transportation, storage, handling and spray solution preparation
- Low risk of human and environmental exposure
- Enable a sufficient range of products for the appropriate purpose at affordable costs as e.g. within IPM programs
- Minimize waste related to product disposal or obsolete stocks
- Reduce the probability of product misuse
- Reduce of package re-use e.g. counterfeit products

Several technology solutions have been made available by the chemical industry including: rigid plastic bottles, syringes, glass vials, small pouches with caps, blister packages, unit dose tubes, pouches & sachets, water soluble pouches, etc. All these options have been designed to fulfill the minimum standard criteria as described below.

High quality small volume packaging follows the same design process and industry standards (or Good Design Practices) as any other package used for pesticides, and should comply at least with the following minimum standards in accordance with the specific product in the package:

- Enable sufficient stability for safe storage and guarantee a shelf life period
- Meet regulatory requirements regarding labelling including safe use instructions for users
- Limit risk of personnel exposure when dispensing product and packaging cleaning/disposal
- Limit risks of damages during transportation
- Enable complete use of the package content, leaving minimal product residues behind
- Sizes which may encourage non-approved use by non-professionals should be prevented.

The proper disposal of empty pesticide containers is key to ensuring that the stewardship life cycle approach is achieved for all crop protection products. All empty pesticide containers, including small packages, need to be disposed of properly. Some small packages are hard to rinse and/or consist of different materials making recycling difficult to achieved. For example, flexible packages or sachets, can cause splashing during triple rinsing and increase unnecessarily operator exposure. Table 1 below shows recommended methods of disposal by type of small package.

<b>Table 1.</b>	
<b>Type</b>	<b>Recommended method</b>
Syringes	Incineration*
Small pouches with caps	Incineration*
Blister packages	Incineration*
Unit dose tubes	Incineration*
Pouches & sachets	Incineration*
Rigid plastic bottles	recycling
Glass vials	recycling
*) Incineration should occur in authorized waste incinerators only. All empty properly-rinsed small packages, as well as non-rinsable packages, should be returned to an authorized collection point where they will be disposed of in an environmentally sound manner.	

## 6. Check list for Suggested Good Practices with Contractors Handling Pesticide Containers

A check list is provided for suggested practices when dealing with contractors.

<b>Check list for Suggested Good Practices with Contractors Handling Pesticide Containers</b>		
	<b>Answer (Yes / No)</b>	<b>Comments</b>
1. Defined ownership of the collected plastic (e.g. Collection program, contractor, etc.)		
2. Contractor has a signed and posted HS&E policy		
3. Completed Annual HS&E audit and safety review		
4. Contractor complies with all applicable laws		
5. Contract includes an indemnification & hold harmless clause for the Container Management Program & management		
6. Contract based on kilograms of plastic (& specify method of measurement)		
7. Insurance requirements for the Contractor including:		
a. Commercial General Liability		
b. Environmental Impairment Liability		
c. Automotive Liability		
d. Workman's compensation coverage		
8. Hazardous waste review – Contractor to provide proof of disposal at approved facilities		
9. Contractor's facility has received regulatory approval		
10. Contractor has completed collection depot inspections and has effective communication in place		
11. The facility has written HS&E procedures covering Container Management activities for a) fixed facilities & b) portable shredding/granulating		
12. Provided evidence of annual training or testing by the Contractor.		
13. The facility has a written Emergency Response Plan		



**Check list for Suggested Good Practices with Contractors Handling Pesticide Containers**

	<b>Answer (Yes / No)</b>	<b>Comments</b>
with training		
14. The facility has Safety Data Sheet (SDS's) available for pesticides handled		

Note: Also read ECPA's Guidelines for Collection and Recovery Schemes [here](#)

## 7. Check list for Suggested Health Safety & Environment (HS&E) Audit Protocols and Recommended Elements for the Annual Audit & Inspection Report

The check list is provided below.

<b>Check list for suggested Health Safety &amp; Environment (HSE) Audit Protocols and Recommended Elements for the Annual Audit &amp; Inspection Report</b>		
	<b>Answer (Yes / No)</b>	<b>Comments</b>
<b>Permanent Collection Sites</b>		
1. There is adequate signage at the site		
2. Containers are inspected for triple rinsing, cleanliness & lack of pesticide residue		
3. The collection site is fenced and secure		
4. Containers are covered from the elements to prevent contaminated leachate runoff		
5. Site rainwater runoff is contained		
6. Non-recyclable wastes are adequately separated		
<b>Transportation</b>		
7. All necessary transport permits are available for inspection		
8. Proof of insurance coverage by the transporter has been provided on:		
a. Commercial General Liability		
b. Environmental Impairment Liability		
c. Automobile Liability		
<b>Shredding or Bailing</b>		
9. Employees are adequately trained in all matters necessary for safe work including:		
a. First Aid (including pesticide poisoning)		
b. Generic Workplace Hazardous Materials Information System (WHMIS) or equivalent		
c. Personal Protective Equipment (PPE) selection, fit, care, use		
d. Operational procedures		
e. Emergency Response (ER) procedures		
10. Employees have annual medical monitoring (if required)		
11. Safety Data Sheets (SDS's) available for all pesticides formerly in containers		

**Check list for suggested Health Safety & Environment (HSE) Audit Protocols and Recommended Elements for the Annual Audit & Inspection Report**

	<b>Answer (Yes / No)</b>	<b>Comments</b>
12. The facility has written procedures covering all major processes		
13. Hazardous wastes – there is proof of disposal at approved facilities		
14. There is evidence of appropriate communication between contractor & the collection site		
15. Contractor provides agreed frequency of pick-up service		
16. Contractor completed collection depot inspections (if required)		
17. The facility has a written Emergency Response Plan including:		
a. Key staff has copies		
b. Completed Annual Emergency Response drill		
c. Emergency Response contact phone numbers posted		
d. Local Fire Department contacted		
e. Spill equipment available		
18. There is evidence that Personal Protective Equipment is worn when appropriate including:		
a. Coveralls		
b. Gloves		
c. Safety glasses		
d. Footwear		
e. Noise protection if needed		
19. There is adequate ventilation if workplace is inside a building		
20. Shredding/baling/other equipment are guarded to prevent injury		
21. Written procedures are available to handle drums & totes		
22. Is there a safe procedure to remove product from drums & totes?		
23. The facility is secured including		
a. Locked		
b. Fenced		
c. Monitored on a 24 hour basis		

**Check list for suggested Health Safety & Environment (HSE) Audit Protocols and Recommended Elements for the Annual Audit & Inspection Report**

	<b>Answer (Yes / No)</b>	<b>Comments</b>
24. The facility has adequate fire protection including:		
a. Adequate fire extinguishers		
b. Sprinkler system (optional)		
c. Monitored 24 hours		
25. Emergency equipment includes:		
a. First Aid supplies		
b. Emergency eye wash		
26. Sensitive environmental receptors are not exposed to contamination from the operation (Risks are controlled e.g. open ground, bodies of water, storm water drainage)		
27. Overall housekeeping is good (visual inspection)		
<b>Plastic Washing, Palletizing and Recycling</b>		
28. Wastewater contaminants have been analyzed		
29. The wastewater receiving facility is aware of the contaminants & accepts this waste stream		
30. Sludge from the washing process has been analyzed		
31. The sludge receiving facility is aware of the contaminants & accepts this waste		
32. All plastic is being recycled only into recommended end use applications		
33. Business and environmental permits for the business are available for inspection		
34. Proof of insurance coverage has been provided		

## 8. Crisis Communications

Potential crisis such as fires, spills, death or serious injury, environmental incident, sabotage, other, can occur at any time. These are some general recommendations to be followed:

### **Before a crisis hits:**

- Identify your potential crises
- Create a response team (management and key tacticians) and:
  - ✓ Define roles & responsibilities
  - ✓ Create notification system (update periodically)
  - ✓ Off-site location (deciding where the command center would be located if e.g. the crisis damages main offices)
- Map out potential scenarios
- Determine organizational expectations
- Mapping it out
  - ✓ How would a given crisis unfold?
  - ✓ What are your options to respond?
  - ✓ What are the potential consequences of your actions
- Draft Materials in advance:
  - ✓ Key messages
  - ✓ Background materials
  - ✓ Top 10 tough questions
- Identify your spokesperson
- Develop clear statements about:
  - ✓ Organization
  - ✓ Regulations
  - ✓ Industry standards
- Provide your spokesperson with media training

### **Media liaison**

All organizations benefit from having a single point of entry for the media, which is especially important during a crisis.

### **During Crisis**

- Communication is crucial
- Communicators:
  - ✓ have to be at the table with the decision-makers
  - ✓ need full disclosure
  - ✓ must ensure consistency of messages
- Not just about the media. Other audiences include:
  - ✓ Victims
  - ✓ Staff (and their families)
  - ✓ Emergency responders
  - ✓ Community
  - ✓ Critics
- Keep it simple
  - ✓ Demands will be high
  - ✓ Focus on providing:
    - Regular, relevant updates
    - Facts only (never speculate)
    - Only your piece of the pie (others should speak for themselves)
- Be open and accessible
  - ✓ If you are in the midst of a crisis you need to share facts
  - ✓ Answer as many of the five W's (Who, What, Where, When, Why) as the facts allow

- ✓ Explain who else is involved and allow them to answer questions about their areas of expertise

### **Dealing with media**

- Establish facts
- Be brief
- Use simple language
- Speak honestly and with empathy
- Don't avoid the media – this will heighten their interest
- Media is your conduit to the public

### **Monitor the media**

- Monitor what's being said
  - a. Media monitoring services (scout out an emergency service provider if needed)
  - b. Google alerts
- Respond to errors or unfair reporting