

# Pellet Handling Manual

Make Zero Pellet Loss Your Goal





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### **Acknowledgments**

Plastics New Zealand wishes to thank the American Plastics Council (APC) and the Society of the Plastics Industry (SPI) who developed this manual and granted permission to remodel it for use in New Zealand.

### **Information**

Questions about or suggestions to improve this manual may be directed to Plastics New Zealand at (09) 2555 662 or [info@plastics.org.nz](mailto:info@plastics.org.nz). Additional details can be found at [www.plastics.org.nz](http://www.plastics.org.nz).

Front Cover: Plastic pellets collected at Mission Bay, Auckland, New Zealand.

Source: Joe Dowling, The Shutter Pirates, [www.theshutterpirates.com](http://www.theshutterpirates.com) and Sustainable Coastlines [www.sustainablecoastlines.org](http://www.sustainablecoastlines.org)

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# Introduction

## HOW TO USE THIS MANUAL

The Operation Clean Sweep (OCS) programme and manual contains guidelines to help plastics industry operations managers reduce the loss of pellets to the environment. Each procedure contained herein may or may not be applicable to your specific operation. Users of this manual can implement the sections and steps that help achieve their company's specific goals. None of the guidelines are intended as a mandate. Compliance with national and local regulations is mandatory. These guidelines may help you to achieve compliance and avoid penalties.

The OCS materials are designed to provide maximum utility for all types of plastic handling and transporting operations.

# Plastic Pellets in the Environment

## Plastic Pellet Loss – Impact and Management

In recent years and with increasing frequency, researchers have reported that seabirds, turtles and fish are ingesting a wide variety of plastic items that are killing them, or affecting their health. Most of these plastics are used consumer products (e.g. bottles, caps, containers, etc.) that have been carelessly discarded. Some of this litter is resin pellets that entered the waste stream and the oceans. When these pellets are eaten by wildlife they cannot be passed through their digestive tracts, and may lead to malnutrition and starvation.

While consumers are responsible for the proper disposal of the products they use, the plastics industry must focus on proper containment of the products we use – plastic pellets, the basic raw material of our industry. Every plastics manufacturer and distributor must prevent the pellets from getting into waterways that eventually lead to the sea.

All employees in every aspect of the industry must be educated on how to properly handle and dispose of plastic pellets with the goal of zero pellet loss.

## The OCS Programme

The Society of the Plastics Industry (SPI) in the USA began an education effort twelve years ago to reduce pellet loss. The message was simple: Resin pellets should be contained, reclaimed and/or disposed of properly. Plastics New Zealand, on behalf of the plastics industry in New Zealand, has introduced this guide to help local manufacturers take similar steps to their American colleagues and protect the environment.

## How You Can Help

Pellet containment is good for the environment and it's good for business. With your help and cooperation, we can make great strides to help our industry protect the environment.



# The Value of Operation Clean Sweep

**Operation Clean Sweep can help strengthen your company's:**

- Contribution to preserving water quality and wildlife;
- Compliance with regulations and avoidance of fines;
- Safety/housekeeping programme
- Employees' well-being;
- Operational efficiency;
- Financial bottom line; and reputation in the community.

**The campaign's goal is: to help every plastic resin handling operation implement good housekeeping and pellet containment practices to work towards achieving zero pellet loss.**

Pellet loss has many negative impacts on individual companies, on the plastics industry as a whole and on the environment.

- Slips and falls are a major cause of plastics industry accidents.
- Accidents mean lost time, and lower employee morale.
- Spilled pellets can eventually end up in our oceans. Whether they're handled in a Hamilton plant or a coastal facility, pellets get into stormwater drains that lead to rivers and oceans. Once in these natural environments they cause litter problems and are a threat to aquatic life.



# Five Basic Steps for Management: Implementing Operation Clean Sweep

- 1 Commit to making zero pellet loss a priority.**
    - Sign the “Commitment to Prevent Resin Pellet Loss” (included on page 28).
- 

- 2 Assess your company’s situation and needs.**
    - Comply with all environmental laws and regulations that address pellet containment.
    - Conduct a site audit.
    - Determine if you have appropriate facilities and equipment.
    - Determine if employees have and are following appropriate procedures.
    - Identify problem areas and develop new procedures to address them.
    - Communicate your experiences to peers in the industry.
- 

- 3 Make needed upgrades in facilities and equipment as appropriate.**
- 

- 4 Raise employee awareness and create accountability.**
    - Establish written procedures (The procedures and checklists in this manual may be modified to suit your needs).
    - Make the procedures readily available to employees.
    - Conduct regular employee training and awareness campaigns on Operation Clean Sweep.
    - Assign employees the responsibility to monitor and manage pellet containment.
    - Solicit employee feedback on your programme.
    - Use workplace reminders such as stickers, posters, etc.
- 

- 5 Follow up and enforce procedures – when management cares, employees will too.**
  - Conduct routine inspections of the facility grounds – production areas, loading areas, car-parks, drainage areas, driveways, etc.
  - Continuously look for ways to improve the programme. Share best practices through Plastics New Zealand.

# Conducting a Site Audit

One of the most effective ways to improve your facility's containment of pellets is to identify the areas where spills/ losses occur most frequently and fix them.

- 1** Use the site audit checklist to audit every resin transfer point at your site. Customize the site audit checklist to suit your facility. Add any missing operations.

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- 2** Identify the major spill areas.

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- 3** Determine the cause of spills in each area.

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- 4** Research/Brainstorm ways to solve each problem.

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- 5** Implement the simplest effective solution.

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- 6** Follow up to measure success.

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- 7** Repeat if necessary.



# Worksite set-up

Ensure your worksite is properly set up to prevent loss and assist clean-up.

**FACILITIES** - take the following steps wherever possible and practical:

## ■ To pave or not to pave

- A paved area facilitates clean-up, but allows pellets to be carried into the environment by wind and water.
- Unpaved areas are more difficult to clean, but pellets tend to stay where they fall and can be recovered.

Choose the solution that is best for your facility.

## ■ Pave loading/unloading areas where unavoidable spills occur to facilitate clean-up

- Include a slope or a berm to contain pellets on paved areas.
- Equip areas with vacuums or brooms.
- Cordless vacuums may be best suited for outdoor clean-up.

## ■ For clean-up in gravel yards, consider fitting vacuums with screen or mesh on intake hoses to collect pellets without disturbing gravel.

## ■ Provide catch trays for use at all truck unloading points.

## ■ Use bulk-handling equipment that is designed to minimise resin leakage. Install central vacuum systems where practical.

## ■ Install connecting hoses equipped with valves that will close automatically when the connection is broken.

## ■ Place pellet collection bins in yards when loading and unloading.

## ■ Ensure proper handling when storing and removing waste pellets. All vendors should follow “no loss to the environment” procedures.

## The RMA

Section 15 of the Resource Management Act prohibits unauthorised discharges of contaminants to land or water.

Put simply, this means that nothing but clean rainwater is to be discharged onto the ground, into stormwater drains or into natural waters, such as streams or lakes. Polluters face substantial penalties including imprisonment for a maximum term of 2 years or a fine of up to \$600,000, with a further \$10,000 for each day the offence continues. Environmental Infringement Notices (EIN's) can also be issued with instant fines of up to \$1000.

## Anticipate Rain

Make sure the containment system can handle heavy rains and flooding. The system should be capable of handling 100-year flood conditions. Talk to a stormwater engineer about the design. Use a collector grate and filtered storm drain system with a screen consistent with the range of pellet size handled.

## Worksite set-up continued...

- Seal expansion joints in concrete floors with flexible material to avoid pellet accumulation in hard to clean spaces.
- Conduct routine inspections and maintenance of equipment used to capture and contain pellets.

### CONTAINMENT SYSTEMS

- Stormwater drain screens are the last line of defence against accidental pellet release. They should be the number one priority for installation.
- Place screening in all stormwater drains. The mesh of the screening should be smaller than the smallest pellet handled at the facility. Clean the stormwater drains weekly to prevent drain clogging and overflow. Pay particular attention to cleaning screens after every rain. Two-stage screens minimise clogging problems.
- Install zero loss containment systems (such as storm drain screens) wherever necessary to prevent pellets from escaping plant boundaries. There are two possible containment systems that could be installed:
  - Area-specific containment systems in each pellet handling area. Area-specific containment systems would be the primary pellet containment systems and the facility-wide system would serve as a backup.
  - Facility-wide containment systems, which are effective in controlling pellet releases from facilities covering a large area and handling large volumes of pellets.
- Install baffles, skirts and booms in containment ditches or ponds. Use surface skimmers or vacuum systems to remove accumulated pellets.
- To prevent stormwater drain contamination, employ dry clean-up methods whenever possible.



## EMPLOYEE EQUIPMENT – ENSURE THAT EMPLOYEES HAVE READY ACCESS TO:

- Brooms, dustpans, rakes, etc.
- Heavy-duty shop vacuums for inside use
- Portable shop vacuums for outside use
- Catch trays or tarps
- Wide-mouth sample collection jars or poly-bags
- Tape for repairing bag or box damage
- Scrap pellet containers (drums, bulk boxes, etc.)
- Procedures you expect them to undertake and checklists to assist in follow-through. (Checklists can be customised)
- Forklift clean-up kit (see page 16)
- Ensure that employees have ready access to the proper clean-up equipment at all locations where spills might occur.

## Slips and Falls

Slips and falls are the number one cause of plastics industry accidents.

## Last Resort

Using compressed air as a method of pellet clean-up is a last resort to be used under unique circumstances. “Blowing” frequently moves the debris to another area rather than contains it. Compressed air also uses large amounts of energy and is therefore costly.



## A Clean Work Area

A clean work area reduces slips and falls and improves employee morale.



# Designing a Training Programme

Designing a training programme involves a sequence of steps that can be grouped into five phases:

- 1 Needs assessment** - conduct a site audit (using the Operation Cleansweep checklists) and determine if employees are following appropriate procedures. Make needed site improvements and write/modify procedures prior to launching a training programme.

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- 2 Instructional objectives** - identify what training is needed to ensure procedures are being followed.

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- 3 Details** - determine how, who, where and when you will train. Consider the following areas: explaining the environmental impact of pellet loss, defining the role each individual plays in affecting change and ensuring knowledge of appropriate procedures.
  - a. Use OCS to design and develop training programme and programme content.
  - b. Select the techniques used to facilitate learning (team meetings, hand-outs, video, website, etc.).
  - c. Select the appropriate setting for your meetings.
  - d. Prepare materials.
  - e. Identify and train the instructors.
  - f. Create department goals.

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- 4 Implementation** - Schedule classes, facilities, participants and instructors, deliver materials, conduct training.

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- 5 Evaluation** - Determine participant reaction to the training, how much they learned and to what degree the company goals were met.

# Employee Participation and Accountability

## Ensure employees are aware of and accountable for pellet loss prevention, containment, clean-up and disposal.

Establish written procedures. (The procedures and checklists in this manual may be modified to suit your needs.)

Ensure the procedures are easily available.

Conduct regular employee training and awareness campaigns on the Operation Clean Sweep programme.

- Explain the impact of pellet loss on the environment and the company.
- Make spill prevention, clean-up and containment a company philosophy and priority.
- Promote that philosophy regularly.
- Assign specific employees the responsibility to monitor and manage pellet containment. If it gets assigned as a regular part of employee jobs, it gets done.
- Consider hiring a full-time housekeeping/warehouse sweeper, if appropriate. Having one person assigned this job improves the efficiency of other workers.
- Stress the importance of immediate clean-up of any spills by the person associated with the spill.
- Review current procedures and identify whether there has been a history of problems in a certain area.
- Reaffirm existing, or develop new, procedures.
- Use workplace reminders such as stickers, posters, etc.
- Encourage teamwork and employee feedback. Conduct regular inspections of the entire facility to ensure compliance with OCS principles.
- Reward and/or recognize milestones and significant achievements of the team or teams that achieve designated goals of the pellet loss prevention programme.

## Spills Will Happen

Ensure that employees:

- ▶ Take ownership
- ▶ Immediately clean up the spill.
- ▶ Recycle or dispose of loose pellets properly.

## Acknowledge Hard Work

Simple steps, like bringing in a special lunch to acknowledge employees' hard work to prevent loss can go a long way in keeping your company's commitment at the fore.

# Prevention, Containment and Clean-up Procedures

## Pellet Transport and Packaging

Truck cleaning, loading, storage, and unloading present special resin-handling challenges.

### Cleaning Empty Trucks

- Use air lance to make total pellet removal easier.
- Ensure truck cleaning areas have wastewater collection and pellet filtration systems installed.
- Recover all pellets from wash water.
- Recycle, resell or dispose of collected pellets properly.

### Storing at Intermediate Sites

- Consider exposure to vandalism when selecting sites.
- Establish security procedures as necessary (e.g. fencing and lighting).
- Advise companies to report any incidents (e.g. shippers, railroads, trucking companies and processors).

**Cleaning Trucks**  
Ensure proper handling of residual materials.

## Unloading Trucks

### Bulk Container Opening

- Contain any possible spill during hook-up by placing a catch pan under the unloading valve before opening.
- Purge unloading tubes within containment area. Keep area swept up or vacuumed.
- Consider installing connecting hoses equipped with valves that will close automatically when the connection is broken. Clogged hoses, material bridging in outlets, etc., can require unloading lines to be opened, which presents the risk of spillage.
- Anticipate the potential for pellet loss before opening the line.
- Immediately clean up and properly dispose of any spilled pellets.

### Sampling

- Conduct sampling only in areas protected by containment equipment.
- Review procedures for taking samples to eliminate any possible spillage.
- Use wide-mouth containers or poly-bags for samples.
- Use a funnel collection system to effectively channel pellets into containers.
- Sampling from unloading tubes:  
Place a catch pan or heavy duty tarp under outlet before opening to catch any spills.  
(Several commercial devices have been developed specifically for preventing spills during sampling.)

### Be Vigilant

**Pellet loss can occur at any stage of operations. Be vigilant to ensure that pellets don't escape into the environment.**



## Prevention, Containment and Clean-up Procedures continued...

### Spills

- Exercise caution to avoid spillage.
- Clean up any spills immediately.

### Packaging

Using the proper packaging, filling and material-handling procedures can go a long way in minimising pellet loss.

#### Selecting Packaging Materials

- Use packaging designed to minimise the possibility of breakage and pellet leakage. Use puncture-resistant shipping containers where possible.
- Use reinforced bags, such as woven polypropylene bags, and line larger containers with puncture-resistant material.

#### Hierarchy of clean-up methods

- ▶ Vacuum it.
- ▶ Sweep it.
- ▶ Wash it down - only with appropriate containment systems in place.
- ▶ Blow it (and collect it) - only as a last resort .

#### Collecting spilled pellets

Collecting spilled pellets reduces contamination, permitting normal usage rather than requiring disposal.





## Prevention, Containment and Clean-up Procedures continued...

### Bags: Filling and Handling

- Inspect all transportation pallets for protruding nails or broken boards.
- Use bags that are not easily punctured.
- Use a heavier weight container/bag if breakage is a recurring problem.
- Move and stack bags immediately after filling to avoid seepage.
- Tape leaks or replace leaking bags.
- Regularly clean up pellets spilled during the filling process. Where possible, select filling equipment designed to prevent pellet loss.
- Implement warehouse and handling procedures that minimise the chance of pellet spillage.
- Dispose of collected pellets properly.



### Caution

Shipping bags often use a mechanical closure that does not provide a positive seal against leakage once the bag is filled.

## Prevention, Containment and Clean-up Procedures continued...

### Bags: Emptying and Disposal

- Thoroughly empty bags.
- Collect, handle, store and transport the empty bags to avoid/contain the escape of pellets.
- Recycle plastic resin bags, shrink-wrap and stretch-wrap, whenever possible.
- Stress the need for “no loss to the environment” procedures.

### Bulk Boxes

- Use bulk boxes that are not easily punctured.
- Tape leaks or replace leaking boxes.
- Regularly clean up pellets spilled during the filling process.
- Dispose of collected pellets properly.



### Caution

**Some loss also occurs during the filling process.**

### Forklift Clean-up Kit

- ▶ Broom
- ▶ Long-handled dust pan
- ▶ Repair tape
- ▶ Bucket for collection/disposal

Select these items to fit together in the bucket. Secure the bucket to the forklift using elastic cords. Situate the kit so as not to interfere with the safe operation of the forklift.

### Select Proper Bags and Pallets

Bags typically are stacked 40 to 50 per pallet, and pallets are usually stored at least two high. Both individual and palletized bags are subject to the rigors of warehouse movement and storage. Proper bag and pallet selection can help reduce damage.

## Prevention, Containment and Clean-up Procedures continued...

### Improve Palletising Methods

- Move and stack bags immediately after filling to avoid seepage from valves.
- Stack bags on pallet in tight, interlocking patterns.
- Shrink or stretch-wrap pallet to stabilise stacks and help contain lost pellets.
- Use corrugated cardboard caps on the top and bottom of pallets to minimise puncturing or tearing bags and to contain loose pellets.
- Block and brace outbound loads to avoid broken bags in transit.

### Handling Materials

- Forklift operators must be trained and skilled in damage prevention as well as proper clean-up.
- Put in place handling procedures that minimise puncture of bags and boxes with forklift tines.
- Repair or replace punctured packages and clean-up any spills immediately to prevent loss of pellets. Sealing a leak when it occurs is much easier than sweeping 100 yards of warehouse.
- Consider outfitting all forklifts with a Clean-up Kit (see Sidebar).
- Place catch trays between the dock and trailer at shipping and receiving bays.
- Inspect pellet packaging before offloading, particularly pellets bagged in unreinforced paper or corrugated bulk boxes. This will prevent pellet release through the gap between the vehicle and the loading dock.

### Storage

- Consider covering all packaging resin stored outside (gaylords, supersacks, etc.) to prevent photo-degradation of the containers.

## Prevention, Containment and Clean-up Procedures continued...

### Other Transport Vehicle Concerns

#### Container Trucks

##### ■ Shipping

- ▶ Sweep or vacuum any loose pellets in the truck/container.
- ▶ Carefully inspect empty trailers for damaged interior walls or defective floors that can tear bags. Consider refusing to use such containers or cover problem areas with corrugated liner board.
- ▶ Block and brace outbound loads to avoid broken bags in transit.

##### ■ Receiving

- ▶ Inspect truck and container shipments containing palletised bags of pellets and document the condition of bags and pallets received. If the shipment is significantly damaged, notify the transporter and manufacturer. Consider refusing to accept delivery.

#### Transport Accidents

- Contact the shipper for assistance/advice if a road accident results in a spill of resin pellets.



## Prevention, Containment and Clean-up Procedures continued...

### Marine Transport

Marine transport of pellets requires special attention due to the high potential for release into the environment. Because of the close proximity to water, loose pellets in and around water- front warehouses, docks, ocean-going containers and on ships themselves must receive extra attention.

Anyone handling pellets directly or managing their shipment must be well-informed about the importance of spill prevention, the need for prompt clean-up and proper disposal practices.

- Do NOT sweep pellets into the water.
- Properly contain and handle any pellets from previous shipments when cleaning ship holds or ocean containers.
- Keep ocean containers in good repair - eliminate protrusions that could tear bags and boxes.
- Avoid stowing resin containers on deck.
- Place resin containers in ship holds.
- Do NOT jettison containers of resin.



## Prevention, Containment and Clean-up Procedures continued...

### Waste Recycling and Disposal

Ensure pellets are properly disposed of to avoid contaminating the environment.

- Store waste pellets in properly labelled containers.
  - ▶ Do not permit loose pellets to accumulate on the ground or floors.
  - ▶ Install a minimum of one pellet-specific waste container in each pellet-handling area.
  - ▶ Routinely check that there is adequate waste storage capacity.
- Use separate containers for recyclable and non-recyclable pellets.
- Use only covered containers or vehicles without leaks.
- Inspect and confirm proper handling and storage procedures if an outside vendor is used for waste removal.
  - ▶ Stress the need for “no loss to the environment” procedures.

#### Use preferred disposal methods.

- Include pellet retention capabilities and practices in criteria for selecting waste disposal companies.

#### Final Step

- Careful disposal is the final step to ensuring that pellets do not affect the environment.

#### Preferred Disposal Methods

Recycle

Resale

Controlled landfill

#### Final Step

Careful disposal is the final step to ensuring that pellets do not affect the environment.

## Prevention, Containment and Clean-up Procedures continued...

### Methods to Help Minimise Generation and Release of Plastic Dust and Powder

This specifically focuses on methods to help minimise generation and release of plastic dust and powder. There are several approaches that can be taken. You may wish to consider whether other ways are more appropriate for your operations. Consult with the manufacturer of the resin you are handling for specific handling, containment and disposal information.

#### **For purposes of this discussion:**

Plastic Dust is particulate matter that may be formed when plastics are handled, conveyed and/or processed. One of the most common means of generation is via abrasion during the air conveying of plastic pellets. In addition to conveying, plastic dust may be generated when plastic raw materials or finished products are:

- Granulated;
- Pelletized;
- Cut;
- Machined;
- Filed; or
- Transported.

Plastic Powder is a form of plastic raw material used in operations where a fine particle size is critical for processing. Plastic powder can escape plastic handling or processing equipment. If that occurs; handling, containment and recovery considerations are similar to plastic dust. Typically powders may escape through:

- leaks in storage silos, tanks and containers;
- leaks in pneumatic or mechanical conveyors;
- leaks in blenders or other processing equipment; or
- during loading/unloading operations or transfer operations.

## Prevention, Containment and Clean-up Procedures continued...

### Methods to Consider for Minimising the Generation of Plastic Dust

The best way to control dust is to minimise its creation in the first place. There are several approaches that can be taken to help minimise the generation of plastic dust. For example:

- When pelletizing, keep cutting equipment in good condition with sharp blades;
- Design conveying systems to treat the plastic gently and take other steps to help avoid collisions and impacts with hard surfaces and other pellets, thereby avoiding plastic fracture. Methods to consider, can include, use of long sweep elbows and avoid having the plastic pass through a blower;
- Use appropriately sized granulators;
- When machining plastics, use an appropriate machine set up for the material and provide appropriate waste collection equipment;
- Store plastics and additives in appropriate containers maintained in good condition; and
- Promote awareness to employees of methods of handling and processing of the plastic to help minimise dust creation.

### Methods to Consider for Minimising the Release of Plastic Dust and Powder

There are several approaches that can be taken to help minimise the release of plastic dust and powder. For example:

- Keep storage silos, tanks and containers in good condition, to help avoid holes, cracks or leaks;
- Maintain loading/unloading and transfer equipment with good seals to help avoid leaks;
- Conveying equipment should be appropriate for the task and maintained in good condition;
- Place collection trays under discharge/loading valves and connection points when making or breaking connections;
- Use processing equipment (and the equipment that feeds it) that helps minimise the release of dust/powder;
- Clean up all spills promptly; wind and traffic can quickly disperse dusts and powders;
- Encourage employees and/or contractors to look for dust/powder leaks and to correct any that occur; and
- Promote employee awareness of training and reminders regarding the need to prevent dust/powder from escaping into the environment.



## Prevention, Containment and Clean-up Procedures continued...

### Methods to Consider for the Capture and Containment of Plastic Dust

Plastic dust creation can be minimised but not eliminated entirely. There are several approaches that can be taken to help in the capture and containment of plastic dust.<sup>1</sup> For example:

- Use properly designed and sized dust collection equipment in all operations that generate or liberate plastic dust;
- Maintain the dust collection equipment according to manufacturers' recommendations;
- Use the recommended filters for the type and amount of dust generated;
- Clean or replace filters or other collection equipment as needed;
- Promote awareness of procedures for clean-up of plastic dust spills, or plastic dust that has settled on surfaces in and around the plant;
- Promote maintenance/housekeeping procedures that minimise dust accumulation around the facility;
- Store captured plastic dust in containers that are designed to help minimise leaks;
- Promote employee awareness in procedures for handling plastic dust, including industrial hygiene considerations; and
- Comply with applicable regulations for containment systems.

### Disposal

Proper disposal of plastic dust and powder can be critical to help minimise the amount released to the environment. Choosing a disposal method involves considering the materials that constitute the dust /powder and the disposal requirements of those materials.

- Review the MSDS for each type of plastic used in the process.
- Dispose of dust or powder using a method that complies with all regulations and guidelines and/or applicable codes and standards.

<sup>1</sup> Dust from plastics may combine with dust from other materials within the plant site. Review MSDS for information on the proper capture, containment and disposal equipment and procedures.

Any dust, no matter what the material, can be explosive if in the proper concentration in air. When handling dusts take precautions not to aerate it and to keep ignition sources away.

# Commitment to Prevent Resin Pellet Loss

## Take the Commitment for Your Company

To demonstrate your commitment to a clean environment, you can complete the "Commitment to Prevent Resin Pellet Loss" and display in an appropriate location.

The commitment should be signed by an officer of the company.

---

### Company Commitment to Prevent Resin Pellet Loss

Our company recognizes the importance of preventing the loss of resin pellets into the environment and we are committed to using the Operation Clean Sweep manual.

We will strive towards zero pellet loss and:

- Make changes wherever possible and practical to:
  - ▶ Improve our worksite set-up to prevent and address spills;
  - ▶ Create and publish internal procedures to achieve zero pellet loss goals;
  - ▶ Provide employee training and accountability for spill prevention, containment, clean-up and disposal;
- Audit our performance regularly; and
- Comply with all applicable state and local regulations governing pellet containment.

Company name: .....

Address: .....  
*Street*

.....  
*City*

Company Officer Name and Title: .....

Signature: ..... Date: .....

# Checklists

CHECKLISTS PROVIDED:

## Management Checklists

- Implementation and Training
- Site Audit
- Facility Equipment
- Employee Equipment

## Employee Checklists

- Processor Operations
- Warehouse



# Implementation and Training Management

Company: .....

Department: .....

## Procedures

- Sign the “Commitment”
- Conduct site audit
- Review or create written procedures
- Assign responsibility for each team/individual
- Put management inspection programme in place
- Plan follow-up and review

## Training

- Team training meetings conducted
- Shift #1 ..... date
- Shift #2 ..... date
- Shift #3 ..... date
- Shift #4 ..... date

Manager .....

Signature/Date .....

# Site Audit Management

Company .....

Department .....

## Bulk truck unloading area

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

## Receiving dock – bags and boxes

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

## Silo area

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

## Transfer equipment – blower

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

Audited by .....

Audit Date    /    /

Management Checklists

# Site Audit Management

Company .....

Department .....

**Transfer equipment – bag house**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Transfer equipment – line connectors**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Box/Bag handling**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Blending equipment**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Processing line – extrusion feed hoppers**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

Audited by .....

Audit Date    /    /

Company .....

Department .....

**Sampling areas**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Packaging Areas – bulk box**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Packaging Areas – bag**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Warehouse/storage**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

**Shipping dock**

Spill problem    yes       no

Cause of spill .....

Solution .....

Implementation date    /    /

Audited by .....

Audit Date    /    /

# Facility Equipment Management

Company: .....

Department: .....

## Storm drain screens

- Number of drains .....
- Number of drains with screens .....
- Target date to complete screen installation .....
- Drain screen inspection/cleaning frequency .....
- Screen repairs required .....

## Unloading areas .....

- Paved
- Unpaved
  - Tarps/catch pans available in area
  - Disposal receptacles in area

## Transfer systems

- Bag House/filters OK
- Pipe, hoses and connections leak free
- Disconnects with auto closing valves

## Sweepings Disposal

- Contractor agrees to zero loss disposal procedures
- Proper interim storage containers available

Inspected by .....

Inspection Date    /    /



Management Checklists

# Employee Equipment Management

Company: .....

Department: .....

## Employee Equipment

- Available for use:
- Brooms
- Dust pans
- Repair tape
- Vacuum system
  - Central
  - Portable
- Catch pans
- Sample containers
- Scrap pellet container Elastic cord
- Buckets for forklift clean-up

Inspected by .....

Inspection Date     /     /

Employee Checklists

# Processor Operations Employee

Company: .....

Department: .....

Operation: .....

Team/Shift: .....

Inspector: .....

Date:        /    /

	Condition at start of shift			Condition at end of shift		
	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable
Silos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transfer lines Bag/ Box feeding Dryer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extruder Hoppers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Problem areas .....

Spills recovered?    Yes     No

If not, why .....

Sweepings properly disposed?    Yes     No

If not, why

Samples Taken: Number .....

Inspected by .....

Inspection Date        /    /

# Warehouse Employee

Company: .....

Department: .....

Operation: .....

Team/Shift: .....

Inspector: .....

Date:        /        /

## Receiving area

- Loading dock catch pans in place for receipt of container shipments
- Samples collected in approved containers
- Container trucks cleaned after unloading
- Dock area swept clean
- Truck unloading area clean
- Raw Material Storage area clean Aisles in clean condition
- No leaking boxes
- No leaking bags
- Waste collection containers emptied
- Boxes cleaned and flattened
- Bags fully emptied prior to disposal
- Broken pallets repaired or replaced

Inspected by .....

Inspection Date     /     /

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