



# Safety and Quality Best Practice Guidelines for Unloading of Polymers in Bulk



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### **Disclaimer**

This document is intended for information only and sets safety and quality best practice guidelines for unloading of polymers in bulk. The information provided in these guidelines is provided in good faith and, while it is accurate as far as the authors are aware, no representations or warranties are made with regards to its completeness. It is not intended to be a comprehensive guide. Each company, based on their individual decision making process, may apply these guidelines, in full or partly or apply any other adapted measures. No responsibility will be assumed by ECTA/Cefic in relation to the information contained in these Guidelines.

# 1. Introduction

During the last years, the European Chemical Industry Council (CEFIC) and the European transport sector (ECTA) have developed guidelines for the safe logistics of chemicals. Some of these guidelines are important for unloading sites of bulk solids in order to understand their responsibilities whilst trucks are delivering bulk solids and the risks from a safety, quality and legal perspective, which are associated with these operations.

The purpose of this document is to provide a summary of those aspects of these guidelines which may be of interest to polymers unloading sites. In addition it includes guidance on how the product quality can be preserved during the unloading operations by avoiding contamination or creation of streamers, angel hair, dust etc.

This guideline should be used to raise awareness of all members of the supply chain including suppliers (commercial/sales), hauliers and customers (including intermediate storage).

## 2. Roles and Responsibilities

The unloading site is responsible for all unloading activities and is required to take appropriate measures so that all persons - including any from outside undertakings - engaged in on-site operations work can do so safely.

**The European Council states in Directive 89/391/EC (OSH "Framework Directive"):**

*Art. 5*

*The employer shall have a duty to ensure the safety and health of workers in every aspect related to the work.*

*Art. 10*

*Every employer shall take appropriate measures so that employers of workers from any outside undertakings and/or establishments engaged in work in his undertaking and/or establishment receive, in accordance with national laws and/or practices, adequate information concerning:*

*a) the safety and health risks and protective and preventive measures and activities in respect of both the undertaking and/or establishment in general and each type of workstation and/or job;*

*(b) the measures taken for the points referred to in paragraph a.*

Each member country has integrated this directive in National Legislation.

### **INCOTERMS**

**International Commercial Terms** are a series of pre-defined commercial terms related to common contractual sales practices. The Incoterms are intended primarily to clearly communicate the tasks, costs and risks associated with the transportation and delivery (transfer of the ownership) of goods. The most commonly used Incoterms in case of polymer bulk deliveries are DAP (Delivered At Place) and DDP (Delivery Duty Paid). The seller completes delivery when the goods are placed at the disposal of the buyer on the arriving means of transport **ready for unloading** at the named place of destination.

In view of the above legislation and Incoterms **the unloading site is responsible for:**

- Providing a safe working environment for the unloading of materials.
- The safety of the driver, including providing site safety/unloading instructions.
- Providing suitable/well maintained infrastructure for the unloading.
- An unloading area equipped to prevent the loss of pellets to the environment and provision of basic cleaning tools.
- Informing the supplier of any unloading limitations/special requirements.
- Checking the validity of material arriving, documentation, seals and integrity.
- Checking and verifying the delivery paperwork to ensure the material is “as ordered”.
- Correct connection/fitting of product hoses to the storage silo and checking if the silo can accommodate the quantity to be transferred. Giving explicit approval to the driver to start the unloading.
- Ensuring that the infrastructure and unloading conditions are properly set, so that the transfer of product from trailer to silo does not lead to the formation of fines (streamers, angel hairs, dust) or other kind of impact or damage (see chapter 4).
- Supervising the unloading process (the checklist of annex B can be used as a guideline).

**The driver and haulier is responsible for:**

- Respecting all site safety rules.
- Respecting procedures to prevent pellet loss.
- Providing the delivery documentation.
- Supplying equipment that is fit for the operation, including seals and integrity.
- Correctly unloading the bulk truck and be fulltime present to observe the unloading process.

**The supplier of the goods is responsible for:**

- The quality of the materials supplied.
- Providing a safe working environment for the loading of materials.
- The safety of the driver at the loading site, including providing site safety/loading instructions.
- A loading area equipped to prevent the loss of pellets to the environment and the provision of basic cleaning tools.
- Providing suitable/well maintained infrastructure for the loading of materials.
- Ensuring the haulier is aware of the tank cleaning requirements and checking compliance on arrival.
- Supplying documentation to identify the “quantity” and “quality” of materials.

The driver has the right to stop the unloading if at any point he feels it is not safe to continue (e.g. high winds, changes in unloading environment).

In case of accidental loss of pellets it is the responsibility of both customer and carrier to take appropriate measures to prevent further environmental impact (see chapter 5).

The requirements specified in the following chapters apply to both unloading and loading sites.

For more detailed information on responsibilities see Annex C of this document.

### 3. Key requirements for safe unloading

The guidance below is taken from the Best Practice Guidelines for the Safe Tipping of Silo Trucks/Trailers/Silo Containers and Bag-In- Box containers (see Annex A).

1. It is the responsibility of the unloading site to perform a risk assessment taking into account all risks including, for example:
  - a. Driving on site and maneuvering to the unloading area – aligned with the overall traffic safety plan (e.g. forklift trucks, trucks, pedestrians, bicycle traffic).
  - b. Tipping silo and container trailers and the potential impact of a trailer tipping over or a container sliding from a trailer, on people and equipment like product lines, silo discharge lines, steam lines, pumps and compressors, buildings/offices, car park, pedestrians etc.

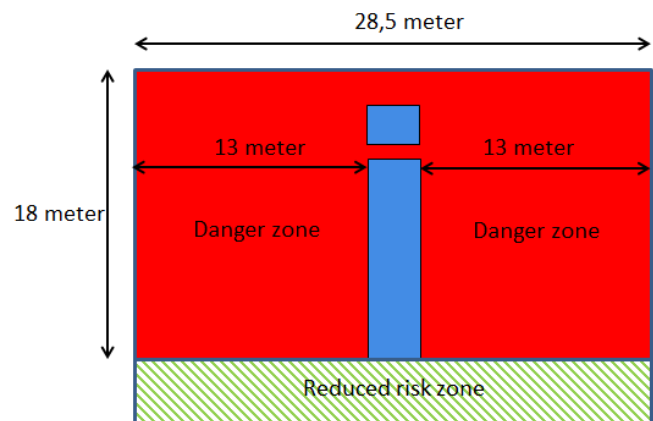


Trailer fell on parked cars during tipping



Silo truck near pipelines and site traffic

The “Impacted” area, which is shown as the ‘Danger Zone’, is highlighted in **RED** (see schematic) around the trailer and can be impacted in the event of a silo trailer falling over.



- c. Working at height
- d. Equipment under pressure
- e. Noise levels

- The unloading area should be located within the site premises and NOT on the public road during tipping. Pedestrians and passing vehicles should be kept away from the truck. This can be done by putting cones, barriers etc. around the truck.



- The access road to the unloading area should be easily accessible e.g. sufficient width and spacious curves. There should be no obstacles (height) in order to provide sufficient space to manoeuvre to and from the unloading point.

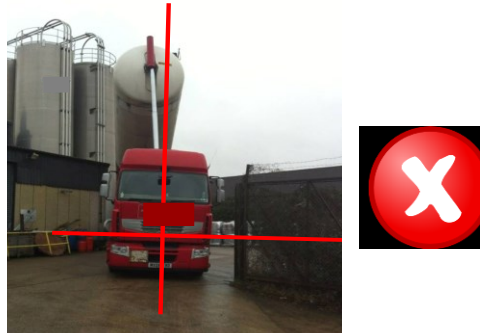
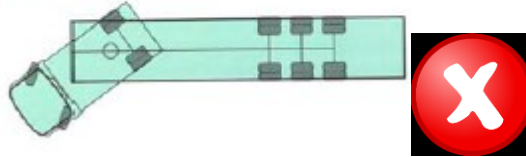
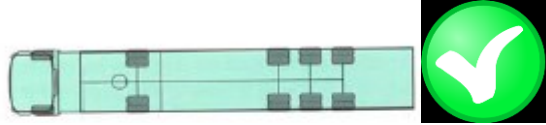


- The surface of the unloading area should be firm and even and should be capable to accommodate a weight of 25 ton per stabilizing leg.



- In the event that reverse driving is necessary, a competent 'guide' is recommended to support the driver and to avoid collisions.

6. The lay out of the unloading area should be such that the traction unit and trailer can be positioned in a straight line. The road surface should not have a lateral slope.



7. There should be NO overhead obstruction in case the trailer is tipped to the maximum height (e.g. overhead lines, gantries or electric power cables).

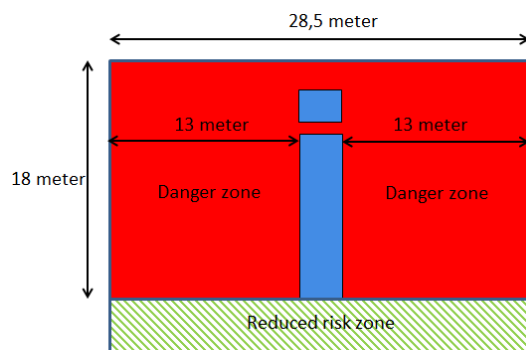


8. The unloading area should have lighting that is suitable for unloading activities during hours of darkness and should cover the complete area and trailer

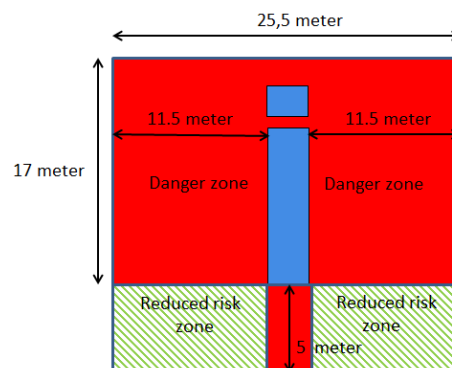
9. The unloading area should have a fit for purpose and properly marked earthing connection, preferably with a positive earth indicator (see picture).



10. The stabilizing legs must be lowered to the surface level before starting the tipping process.
11. The tipping height of the silo/ container must be lifted in several stages in order to keep the centre of gravity of the silo/ container as low as possible (except for products with avalanche risk).
12. During the unloading, the driver must stay in the vicinity of the trailer in the reduced risk zone.



Danger zone for silo truck



Danger zone for 30' container

13. The unloading site should be equipped with a wind speed meter (anemometer) and/or alarm system/ procedure in order to stop and/or adjust the unloading activity in case of strong wind. Average wind speed above 4 beaufort scale (6,5 m/sec) will increase the risk of tipping over. The risk assessment needs to consider wind speeds, wind directions and physical layout of the unloading place.
14. Site operators should understand the unloading process, the technical requirements for trucks to allow safe unloading, and the risks associated with tipping bulk trucks.
15. Site operators should carry out checks before, during and after the unloading to ensure all requirements are met.
16. Drivers should not be allowed to go on top of their truck or container without proper fall protection (e.g. lifeline system or safety platform). The handrail on top of a silo truck or container is not considered to be a safe means for working at height. The handrail should not be used under any circumstances for attaching the life line.



17. Unloading of sea bulk containers

Detailed information of unloading of sea bulk containers is available in the Cefic/ECTA Best Practice Guidelines for the Safe Use of “Lined” ISO Box Containers for Movement of Dry Bulk Products (see Annex A).

18. During the unloading, pellets can spill on the surrounding area. Besides creating a slipping hazard, there is also a risk of pellets entering the rainwater gullies and eventually reaching the marine environment. Spilled pellets should be cleaned immediately and rainwater systems protected. For more info see chapter 5.



19. Receiving installations must be designed for the specification of the product, well constructed and safe to use. This is also applicable for temporary/mobile storage facilities. Atmospheric storage silos have very little resistance to over-pressure. Therefore these silos must have sufficient venting capacity in order to prevent over pressure due to the air pressure surge at the end of the unloading. Venting of atmospheric silos must be to open air, preferably on top of the silo. The vent line should preferably have a diameter of minimum twice the diameter of the inlet line and should be fitted with a “Chinese cap”. There should be no grids or caps that can obstruct the air flow. An inspection plan of vent lines should be in place. In case an automatic shut off valve is installed in the inlet line, which closes in case of excessive airflow or in case of High Level Alarm in the silo, an optical/ acoustic alarm should be installed at the unloading place to warn the driver that the valve is closed and the line system between the truck and the automatic valve is still under pressure.

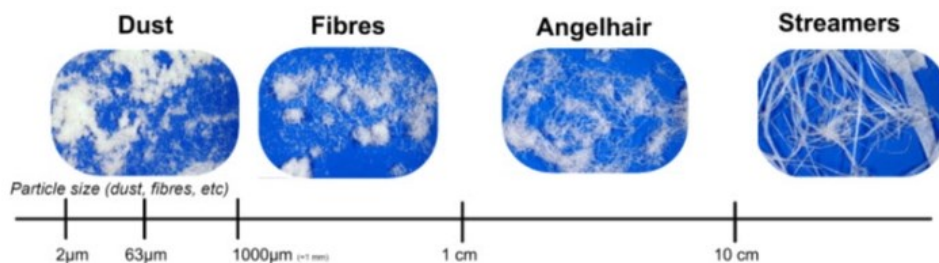
## 4. Key requirements to maintain the product quality during unloading

Typical quality risks are:

- Fines
- Contamination
- Humid/wet product

### 4.1.1 Fines

The formation of fines (dust, fibers, angel hair and streamers) in polymer resins cannot be completely avoided but careful handling of the material can minimize the concentration of fines. The below overview gives some more details about the different categories of fines, their dimensions and how those are created:



#### Creation of Dust and Fines

Fibers can be formed while granulates are transported through pipes. If the inner surface of the piping system is smooth, the granules tend to slide. While sliding the granule is heated up due to friction, leaving a polymer “smear” behind on the surface of the pipe. This smear eventually forms fibers (or angelhair/ streamers) as they are blown off the pipe surface. Dust however, is more often created when the inner surface of the piping system is very rough. Instead of sliding the granules experience “sanding” over the pipe surface generating dust.

The extent to which this occurs is dependent on many parameters e.g.:

- The sensitivity of the product.
- The lay out of the conveying systems e.g. the conveying distance (vertical and horizontal), number of bends and the radii of bends.
- The diameter of the pipes and internal roughness of the pipes.
- Conveying speed and conveying air temperature.

The presence of large quantities of fines is an indicator that there are transport problems somewhere between production of the pellets and arrival in the hopper of the customer’s extruder. There are four different transport phases:

1. In the manufacturing process, from extruder to the silo’s.
2. From the silo into the bulk truck.
3. From the unloading bulk truck into the customer silo.
4. From the customer silo’s to the production lines.

It is therefore very important to check each transport step to determine the origin of the problem.

## Bulk Unloading

Every unloading situation is different, because of the different local circumstances, e.g. length of the silo-loading pipe, height of the silo, diameter and roughness of the pipe, number of bends and unloading hoses needed. For each unloading situation, a driver tries to find the optimum between the product flow and the airflow with a certain unloading pressure as the result. It is a misconception that a driver strives for the highest possible discharge pressure to get the job done as quickly as possible.

One should be aware that the air pressure measurements on the trailers are indicators and not precise calibrated instruments.

In most of the unloadings, this way of working does not create dusts and fines and the unloading is completed between 1 and 1.5 hour (unloading time) with the typical unloading pressure between 0.8 and 1.3 bar.

## Specific Bulk Unloading Instruction for specific situations and/or products

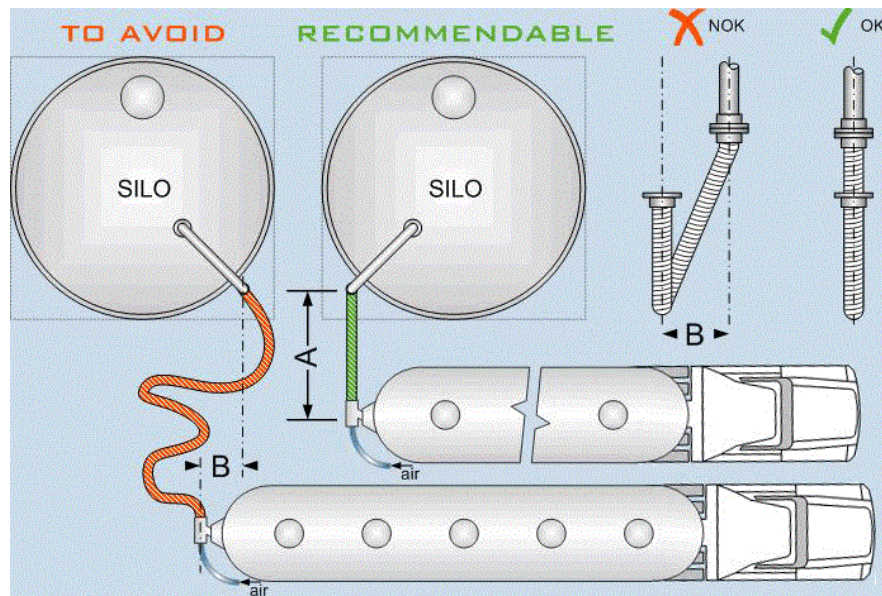
If, based on research, it is established that by discharging in a normal manner (as described above), fines or dust is created or for example compounded products are affected, a specific bulk unloading instruction for this customer or product may be needed.


This has to be accepted by the Customer, Haulier and Supplier because of the extra costs that could be involved, for example if the agreed unloading time is exceeded. Any deviation on the normal unloading procedure needs to be aligned, instructed and supervised by the customer.

## Unloading Hoses

The unloading hoses should meet the following minimum requirements:

- It is a strong preference that the unloading site provides (dedicated) unloading hoses meeting their quality requirements, stored in clean boxes. However if they are not available on site the haulier will use his standard hoses (inner surface white rubber).
- Hoses should always be correctly connected.
- The condition and use of the unloading hose stays always the responsibility of the unloading site.



ITEM	AVOID	RECOMMENDABLE
Stationing of the truck	Too far away Too close	As close as possible to the silo's intake point <b>parking distance A</b> in relation to the available unloading hose' installation distance. Good practice is to mark the vehicle position on the floor.
Length of hose	Too long	If available, use an unloading hose with the appropriate length (maximum 2 hose lengths of 5 m)
Number of bends	Too many bends	Attempt to achieve a straight line between the tanker and the silo's intake point with minimal bends
Bending radius	Avoid too strong bending stress / radius	Respect the hose manufacturer's recommended minimum bending radius
Hose axis	Hose axis not in the same surface plane	Keep <b>distance B</b> , 'surface plane dislocation', minimal
Hose torsion (axial)		Keep hose free of torsion (twisting)

#### 4.1.2 Contamination

Contamination refers to the pollution of polymer resins by any other material. It could include other resins, foreign particles like metal or dirt, or residues from a previous cargo. Cleanliness and correct equipment handling in the whole logistics supply chain is of the utmost importance in order to avoid contamination.

The cleanliness of the silo tank and ancillaries prior to loading is the responsibility of the haulier. The supplier should ensure there are effective processes for defining the cleaning requirements, and the haulier should ensure the appropriate documents are provided prior to loading.

The cleaning documentation should be retained at the loading site and could be made available to interested parties in the event of an incident. The cleaning documentation is not part of the standard document package sent with the driver to the unloading site.

The whole cleaning process and best practices for the cleaning of silo tanks is described in ECTA/Cefic Best Practice Guideline for the Polymer Industry Cleaning Specification.

Prior to unloading, a visual inspection of the unloading equipment is expected of the unloading site. This should be a basic visual inspection of the cleanliness of flexible unloading hoses, rotary feeders and connecting parts (e.g. couplings) which are presented for use.

See also Annex C of this document, describing the responsibilities.

#### **4.1.3 Humid/wet sample**

Samples, if required, should be taken at the unloading valve. In some cases the sample can be wet. This is predominantly due to condensation of moisture in the silo tank during transport (e.g. temperature difference between day and night).

The unloading valve (where the sample is taken) is the point where the condensed water becomes visible. It is sometimes also possible to have water dripping from this valve area. For cases where the initial sample is wet, it is required to flush a certain amount of product (up to 25 kg). After this action a second sample should be taken. Based on experience this sample will typically be less wet, or even dry.

During unloading, hundreds of cubic meters of dry air is used to blow the product into the silo, with the result that the product in the silo will be dry.

#### **4.1.4 Human trafficking**

Over recent years the haulage industry has been subject to problems with people breaking into trucks/vehicles in order to make their way across European borders. Recently this has extended to bulk transportation modes and entering the unloading sites. The following precautions should be considered:

- After loading operations are completed, check immediately that no non-authorized people have entered the silo, tank or trailer.
- Close the vehicle with the TIR cable (along all roof hatches) and secure the cable by seals. Note the number of seals on the transport documents.
- Where possible secure access to the ladder.
- Do not stop on a parking place within 200 km from sensitive places unless it is a guarded parking place (or if the driver is forced to stop because of his maximum driving time).
- After each stop check if the TIR cable and seals are in good order. Avoid the need to climb on top of vehicles but if there is a need to go on top, the rules for safe working at height must be taken into account.
- Before entering the site of the unloading point, check again if the TIR cable and seals are still in place.
- If you think refugees could have entered, call immediately your management and the local authorities.
- Never start unloading if you think refugees could have entered the truck.

## 5. Prevent pellet loss



Marine litter is an important and growing challenge we face as a society today. It is a complex issue affecting our world's oceans, seas and rivers, harming wildlife, fisheries and tourism in Europe and around the world. A wide variety of plastic objects, amongst them industrial plastic pellets, have been found ingested by animals such as birds, turtles and fish, potentially harming their health or even proving fatal. These plastic pellets were potentially lost during industrial production, processing or handling and have since ended up in oceans, rivers and birds' stomachs.

Pre-processing plastic pellets are commonly found in beach surveys all over Europe. Plastic waste in the oceans is unacceptable, be it because of accidental losses or in certain cases, careless behaviour or inappropriate waste management. The value chain must focus on suitable containment of plastic pellets/granules, flakes and powders. Industry has the opportunity to lead by example by achieving a significant reduction of its own litter through good employee behaviour and the right infrastructure.

For example [Operation Clean Sweep®](#) offers efficient and flexible tools in assisting partners of the plastics industry, resin manufacturers, hauliers and plastics processors with good handling practices and maintenance of industrial sites. This stewardship programme is specifically aimed at preventing the discharge of plastic pellets/granules into the marine environment. It is very important that value chain associations and companies support this initiative and prevent pellet losses.

This initiative comprises of a communications toolkit with audio-visual material, guidelines and suggestions to improve performance and prevent material loss during production and handling. In order to reduce pellet loss it is important to act together as a whole value chain, transport and logistics sectors included, to implement joint solutions to marine litter.


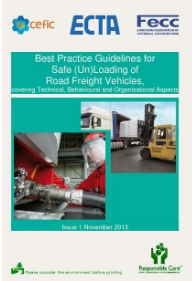

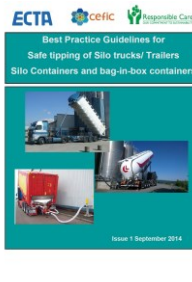
Demonstrating pellet loss prevention and using Operation Clean Sweep is crucial in times where marine litter and microplastics in the marine environment are very high on the agenda of media and policy makers. It is therefore very important that the whole value chain takes action. More information on the Operation Clean Sweep initiative is available on the programme's website:



<https://opcleansweep.org/>



*Example of plastics ingested by a fulmar.*

## Annex A – CEFIC/ECTA and PlasticsEurope reference documents

CEFIC/ECTA guideline	Front page	What is important for you in this document?	Where to find it?
<p><b>Best Practice Guidelines for the safe working at height in the logistics supply chain and allied sectors</b></p>		<p>What are your responsibilities when a driver has to go on top of his truck for taking a sample?</p> <p>How can this be done safely?</p> <p>What alternatives are available (e.g. bottom sampling)</p>	<p><a href="#">ECTA link</a> <a href="#">Cefic link</a></p>
<p><b>Best Practice Guidelines for safe (Un)Loading of Road Freight Vehicles, covering Technical, Behavioral and Organizational aspects</b></p>		<p>Know your and the driver's responsibilities during unloading operations regarding:</p> <ul style="list-style-type: none"> <li>• making connections</li> <li>• sampling</li> <li>• operating unloading equipment</li> </ul> <p>...</p> <p>Transperanto: a simple translation tool to communicate with foreign drivers. <a href="http://www.transperanto.org">www.transperanto.org</a></p>	<p><a href="#">ECTA link</a> <a href="#">Cefic link</a></p>
<p><b>Best Practice Guidelines for Cleanliness of Rotary Valve and Unloading equipment for Bulk deliveries</b></p>		<p>On top of the checks and inspections done by the drivers, it is proposed that customers carry out a few checks themselves before starting the unloading. e.g.</p> <ul style="list-style-type: none"> <li>• Check seal number on CMR and compare with seal number on the container.</li> <li>• Check cleanliness of hoses etc..</li> </ul> <p>In addition, a robust system should be in place to prevent that the product is unloaded into a wrong silo.</p>	<p><a href="#">ECTA link</a></p>
<p><b>Best Practice Guidelines for the safe tipping of Silo trucks/ Trailers/ silo Containers and Bag-In- Box containers</b></p>		<p>The document describes how your unloading installation should look like e.g.</p> <ul style="list-style-type: none"> <li>• Condition of the road surface</li> <li>• Unloading location away from truck traffic</li> <li>• Free overhead clearance</li> <li>• Etc...</li> </ul> <p>The document also describes how tipping can be done safely and it includes a checklist that can be used by the operator to check whether safety requirements are met.</p> <p>Example how to do a risk assessment of the unloading facilities.</p>	<p><a href="#">ECTA link</a> <a href="#">Cefic link</a></p>

<p><b>Best Practice Guidelines for the Safe Use of “Lined” Iso Box Containers for Movement of Dry Bulk Products</b></p>		<p>The document is provided to offer and continually improve safety during maritime transport and the associated handling of dry bulk products, as part of the overall objective of both the chemical industry and the European logistics industry, to operate in accordance with the Guiding Principles of Responsible Care.</p>	<p><a href="#">ECTA link</a></p>
<p><b>Best Practice Guideline for the Polymer Industry Cleaning Specification.</b></p>		<p>To be issued end 2016</p>	
<p><b>Operation Clean Sweep® manual</b></p>		<p>The manual provides an insight how to set up, review and improve existing environmental protection and safety measures under the light of pellet loss.</p> <p>The checklists are divided into two target groups: Management and employee.</p>	<p><a href="#">Operation Clean Sweep link</a></p>



## Annex B - Checklist for supervising the unloading activities

To be completed by the operator of unloading site

Name and place delivery site		Date of delivery	
Name haulier		Silo truck/ silo container/ Box cont.	
Name driver		Name operator	

nr	Item to be checked	Yes, No, N/A	Comments
1	The driver has received the site safety instructions and wearing the right PPE (Personal Protective Equipment)		
2	Seals manlids/TIR cable/doors/ hose boxes etc.. are in place		
3	The unloading equipment (couplings, rotary valve, hoses etc..) is clean and dry and well fitted with a restraint system (e.g. safety clamps)		
4	The receiving silo has sufficient capacity to accept the consignment		
5	All unnecessary personnel, operations and traffic are excluded from the danger zone.		
6	The unloading area is clean (e.g. free from granules, ice and snow), free from obstacles		
7	The truck is well positioned according to the site instructions and the tractor unit and semi-trailer are in line		
8	In case of a container, the twist locks are in locked position and the hand nut is well secured and locked with a locking pin or alternative system		
9	The rear stabilizing legs touch the road surface which is stable, even, firm and is not damaged		
10	Tipping is done in several stages to keep the centre of gravity as low as possible (some products require maximum tipping from the start) and during the unloading, the driver remains at the back of his truck, in the reduced risk zone		
11	The unloading conditions are in accordance with the site requirements and all spilled product has been cleaned up according to site requirements		

Comments driver/ operator:

Signature driver

Signature operator

**Completed Checklist to be handed to the driver after unloading**

## Annex C - Detailed roles and responsibilities

Unloading Site / Operator	Transport Company/ Driver
<p>The site management should supply equipment that is fit for the operation to be carried out and meets all applicable legal requirements.</p> <p>The unloading place must be designed in such way that unloading can be done safely (eg stable underground).</p> <p>A risk assessment must be done to evaluate all risks (e.g. tipping over of silo/ container) and that all measures are taken to keep the risks to an absolute minimum</p>	<p>The Transport Company should always supply a bulk truck and equipment (e.g. hoses, rotary valve, pipes etc..) that is clean, fit for the operation to be carried out and meets all applicable legal requirements.</p>
<p>Operators should communicate in the local language or through a limited number of expressions in English. (see Transperanto)</p>	<p>Drivers should communicate in the local language or through a limited number of expressions in English. (see Transperanto)</p>
<p>The management of the site should ensure that the site's requirements are communicated to the transport company management and that safety procedures are communicated to the drivers upon arrival.</p> <p>Management must promote and maintain safety awareness, particularly during product handling.</p> <p>The management ensures that unloading operations are carried out under site supervision..</p>	<p>The transport company will communicate the received site's requirements to all involved people.</p>
<p>The management of the site should provide safe conditions for working at height (including safe access to top of vehicles) in conformity with the applicable legislation. Working on top of a vehicle is not allowed unless proper fall protection facilities are available (life line/ working at height platform..)</p>	<p>The transport company must comply with the 'Working at Height' requirements. Working on top of a vehicle is not allowed unless proper fall protection facilities are available (life line/ working at height platform..)</p>
<p>Before the unloading operation starts, operators should check that the transport equipment offered meets all the requirements for the operation to be carried out.</p>	<p>Before entering the site, drivers should check that the vehicle and all ancillary equipment are fit for the operation to be carried out and meet all requirements as specified in the driver's instructions for the operation</p>
<p>The preferred option is product acceptance on the basis of a Certificate of Analysis.</p> <p>Taking samples from vehicles should be avoided. If the taking of samples is required, the management of the site must ensure that samples are taken by qualified site personnel and preferably from the bottom. If top samples are required, proper fall protection facilities (life line, working at height platform..) must be provided</p>	<p>Drivers are instructed not to take product samples.</p>
<p>Operators should always adhere to the site instructions and be an example for drivers. Operators should witness the whole unloading activity.</p>	<p>Unless specifically agreed otherwise, drivers should always report at the gate or site entrance and ask for instructions. These instructions may include emergency procedures, required PPE, parking restrictions, route to loading or unloading point and general info such as the prohibition of smoking, alcohol and drugs, prohibition of the use of mobile phones, driving speed limits etc. Drivers should always adhere to the site instructions. Drivers should witness the whole unloading activity.</p>

Unloading Site / Operator	Transport Company/ Driver
Where possible operators should ensure that vehicles are driven and parked according to site instructions and should report any observed unsafe situations to the site management. The operator shall ensure that manoeuvring areas are kept clear to avoid congestion. When asked, the operator has to provide assistance for manoeuvring.	Drivers should proceed to the (un)loading area and park the vehicle according to site instructions. It is important to constantly assess the safety situation, not only whilst driving on site but also when arriving at the (un)loading point. For manoeuvring, the driver should ask for assistance if needed. Drivers should always take the necessary precautions to prevent any movement of the vehicle during unloading
Operators should wear PPE as required by site instructions and must ensure that the driver does the same.	Drivers should wear PPE as required by site instructions however minimum requirements are mentioned in the Best Practice Guidelines for Safe (Un)Loading of Road Freight Vehicles covering Technical, Behavioural and Organisational Aspects.
If openings are sealed, the operator should unseal the equipment and check seal numbers mentioned on the transport documents	If openings are sealed, the driver should check the seal placement and seal numbers mentioned on the transport documents
For silo containers or Bag in Box containers: the operator should check that the 4 twist locks are fully engaged in the corner castings, the hand nuts are well tightened and fully locked	For silo containers or Bag In Box containers the driver must check that the 4 twist locks are fully engaged in the corner castings, the hand nuts are well tightened and fully locked
Operators should check the cleanliness of the truck unloading equipment (hoses, rotary valves etc)	Drivers must check the cleanliness of the truck unloading equipment. (hoses, rotary valves etc)
The operator is responsible for correctly connecting/fitting product hoses to the storage silo.	The driver is responsible for making the hose connections to the vehicle
The operator should check if the silo can accommodate the quantity to be transferred.	
The operator should give explicit approval to the driver to start the unloading	The driver is only allowed to operate equipment on the vehicle such as valves, and compressor. The driver should not operate site equipment.
	Before departure the driver should ensure that the entire load has been discharged, that all hoses are disconnected drained, blanked off (if necessary) and properly stored. All manlids and valves should be closed and properly tightened. The earthing cable as well as any loose equipment should be cleared away. The driver should ensure that it is safe to leave the unloading point by undertaking a visual inspection whilst walking around the vehicle. Spillages caused during unloading, hose disconnection etc. must be kept to an absolute minimum. Any spillage must be cleaned up to avoid that product enters the drains of the sewer system
Operators should report all (un)loading problems, unsafe situations or conditions, near misses and incidents, as per company procedure.	Drivers should report all (un)loading problems, unsafe situations or conditions, near misses and incidents, as per company procedure
For each identified spill the site personnel needs to: - take ownership, - immediately clean up the spill, - recycle or dispose of loose pellets properly.	For each identified spill the site drives (in co-operation with the site personnel) needs to: - immediately clean up the spill, - recycle or dispose of loose pellets properly.

## Contact list



**Claudia Vaz**

Dow Benelux B.V.  
T +49 89 4553 3116  
M +49 172 13 800 90  
cavaz@dow.com



**Steve Ralph**

Logistics Operations Manager - Carrington +  
Packaging Europe CoE  
Basell UK Ltd  
T + 44 161 776 3173  
M + 44 7787 915419  
[steve.ralph@lyondellbasell.com](mailto:steve.ralph@lyondellbasell.com)



**GHEYS**  
YOUR LOGISTIC PARTNER

**Dirk Gheys**  
CEO

Group Gheys  
T +32 14 81 21 21  
M +32 14 81 66 55  
dirk.gheys@gheys.com



**Jyrki Tiihonen**

Sustainable development manager



**Huub Vergoossen**  
Senior Manager QESH  
SABIC

T +31 46 722 2758  
M  
[Huub.Vergoossen@SABIC.com](mailto:Huub.Vergoossen@SABIC.com)



**Luc Van de Velde**

Logistics Safety Manager  
Ineos Olefins & Polymers Europe  
T +32 3210 36 47  
M +32 475 27 23 31  
[Luc.vandevelde@ineos.com](mailto:Luc.vandevelde@ineos.com)



**Marc Twisk**  
Managing Director

In remembrance of Marc Twisk  
† 26 July 2016



**Jos Verlinden**

Director Logistics and Responsible Care  
T +32 2 676 73 95  
M +32 474 989033  
[jve@cefic.be](mailto:jve@cefic.be)



**Rohnny Vanbrabant**

Distribution Contracting Manager Bulk  
Borealis Polymers NV  
T +32 11 45 9003  
M +32 474 74 59 06  
[rohnny.vanbrabant@borealisgroup.com](mailto:rohnny.vanbrabant@borealisgroup.com)



**Peter Casillo**

T +41 56 464 07 94  
M +41 56 464 07 09  
[peter.casillo@bertschi.com](mailto:peter.casillo@bertschi.com)



**Ralph Schneider**

Environmental Affairs Manager  
PlasticsEurope  
T +32 2 676 17 54  
M +32 475 98 06 55  
[ralph.schneider@plasticseurope.org](mailto:ralph.schneider@plasticseurope.org)