

## Perdite dal contenimento primario (LOPC) causa d'incidenti

Dicembre 2025

Gennaio 2014

Ottobre 2021

**Business Safety Beacon**

Messages for Manufacturing Personnel  
[www.osha.gov/SLTC/etools/manufacturing/](http://www.osha.gov/SLTC/etools/manufacturing/)

Wrong material + Wrong tank = Trouble

**May 2023**

**Did You Know?**

Every day, millions of pieces of hazard materials are transported by railcars across the United States. These cylinders, barrels and ships to the water way. Most of these materials are transported in DOT-compliant containers.

Warehouse drivers always need to be educated in identifying these containers and understanding how to handle them. Facility managers and safety management must share the responsibility for ensuring employees are trained.

Highly mobile tasks such as chemical loading and unloading, railcar cleaning, and railcar inspection and connecting points.

When you are working around railcars, you can and should pay attention to the correct markings on these containers. This procedure should be a requirement that facility managers and safety managers implement. If you see a railcar with a different marking than the one you are used to, contact your supervisor or manager immediately. If you see a railcar with a different marking than the one you are used to, contact your supervisor or manager immediately.

Operations and drivers should wear the correct PPE for the material being handled and be trained on how to properly handle it.

**What Can You Do?**

When making rounds, take notice of the paint labeling. Missing or damaged labels should be replaced promptly. If you are uncertain about what the label means, contact your supervisor or manager. If you are uncertain about what the label means, contact your supervisor or manager.

Read and follow the procedure for unlidding. If unlidding is not part of your job duties, inform your supervisor and have them contact you.

During handling, keep hearing hazards at a safe distance. If you are using a respirator, use a chemical compatibility chart to determine if the respirator is appropriate (<https://www.osha.gov/SLTC/etools/chemicals/>).

**Manual chemical transfers require accurate procedures that are consistently followed!**

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**Figure 1. Contractors in industrial settings are often exposed to dangerous materials. If the product is painted on the nameplate, industrial hygienists must cause the paint to be removed before sampling.**

On October 21, 2016, two incompatible chemicals were accidentally mixed at the MGP Processing, Inc. facility in Waukegan, Illinois. An employee was killed and another suffered a life-threatening injury when the resulting explosion caused the tank to burst. The truck driver incorrectly attached the wrong tank to the wrong railcar, which contained the wrong materials (black). These two materials are not compatible, and mixing them together can result in an explosive reaction. The tank contained chlorine and other compounds.

The dead resulted when workers and the surrounding community responded to the emergency. The investigation found that the MGP employee and the members of the public responded quickly to the emergency. The following are some general steps to follow in case of an emergency:

- Post labeling of the connections for all different types of containers and tanks used at the time of the incident. If not, add a label to the photo for future reference.
- A week notice to communicate the correct connection points to your supervisor or manager.
- Failure of the operator to verify the correct connection points before allowing transfer of the material.
- Proper training of employees on handling procedures and proper understanding of that procedure by the operators.

Maggio 2023

Gli incidenti di sicurezza del processo avvengono in realtà di qualsiasi dimensione, sia nel settore petrolchimico che in altri settori che utilizzano materie chimiche. C'è una cosa che accomuna molti degli incidenti di processo: iniziano con una perdita dal contenimento primario (LOPC). Di seguito sono riportati tre vecchi Beacon che confermano questo fatto.

La corrosione può essere una causa nascosta per un LOPC. Il Beacon di gennaio 2014 mostra come la coibentazione può nascondere e promuovere la corrosione al di sotto dell'isolamento (CUI). (<https://ccps.aiche.org/resources/process-safety-beacon/archives?page=3>)

L'erroneo isolamento di tubazioni o attrezzature può causare LOPC. Il Beacon del ottobre 2021 descrive un incidente dove un isolamento sbagliato ha causato la morte di due persone. (<https://ccps.aiche.org/resources/process-safety-beacon/archives?page=2>)

Rilasci di materiale pericoloso possono essere causati dal mescolamento di sostanze incompatibili. Il beacon di maggio 2023 racconta di come l'aggiunta di sostanze sbagliate in un serbatoio ha avuto un impatto notevole.

(<https://ccps.aiche.org/resources/process-safety-beacon/archives?page=2>)

# Lo sapevi?

- Un LOPC è un rilascio non previsto ed incontrollato di materiale dal suo contenitore primario.
  - I LOPC hanno spesso dei campanelli di allarme, ad esempio corrosione importante o mancanza di tappi sulle parti terminali delle linee (open end).
  - I LOPC possono essere dovuti anche da altre cause rispetto alle due elencate sopra, tra le altre: impatto di veicoli, danni meccanici, vibrazioni, operazioni sbagliate, materiale di costruzione errato, variazioni di temperatura e pressione.
  - Difetti/danni alle coibentazioni consentono la penetrazione di acqua e favoriscono la corrosione (CUI).
  - I LOPC sono eventi prevenibili!

## Cosa puoi fare?

- Nei tuoi giri di ispezione, nota se ci sono perdite e segnalale.
  - Installa delle barriere attorno alle perdite finché la sostanza non è stata identificata e la perdita arrestata.
  - Segnala le coibentazioni mancanti o danneggiate.
  - Segnala se ci sono perdite ricorrenti (nello stesso posto e dello stesso materiale). Possono essere il segnale di una debolezza del sistema o di un problema maggiore.
  - Segnala gli eventi LOPC che sono successi durante le analisi dei rischi di processo (PHAs).

**Previeni i LOPC – tieni i materiali pericolosi nel posto giusto!**