

TECH TOPIC

Polymer Hopper Car Unloading

There are several topics to consider when receiving LyondellBasell polymers in railcars. The following should be considered when developing an effective hopper car unloading procedure.

1. Know the product in the railcar.

- a. Read shipping documentation to confirm the railcar number and content.
- b. Read the Safety Data Sheet (SDS) for the product (available at www.LYB.com.) The SDS contains safety recommendations specific to each product that must be followed.

2. Take steps to secure the railcar so it can be safely unloaded.

- a. Never inspect the contents or connect unloading equipment to a railcar while it is connected to a locomotive.
- b. A best practice is to decouple the railcar and place de-railers on the track to prevent unintentional movement.
- c. Place signs on all sides of the railcar to alert others the railcar is being unloaded.
- d. Use safe fall protection procedures if you must work at heights.

3. Prepare the railcar and surrounding area.

- a. Ensure good house keeping in the unloading area.
- b. Inspect the surrounding area for hazards.
- c. Inspect the railcar for damage and tampering.
 - i. Verify cable seals are in place.
 - ii. It is a best practice to use an unloading checklist that documents the cable tie ID numbers.

4. Unload the railcar – Utilize a checklist procedure to unload the railcar that takes the following into consideration

- a. Proper grounding and bonding must be in place. Conveying of polymer generates static electricity, which may lead to an injury from shock or act as an ignition source for a fire or dust explosion.
- b. Spill prevention – include steps to prevent, contain, and immediately clean up any spills. Consider using a catch pan.



- c. Product contamination – Inspect hoses and unloading equipment to make sure they are free from contaminants. Open hoses ends should never be placed on the ground.
- d. Transfer velocity should be in target range for your system. Excessive transfer rates may result in formation of fines and streamers.
- e. Transfer temperature should be in target range for the product being transferred. High conveying temperature may result in formation of fines and streamers.

5. Post unloading activities

- a. All unloading hoses should be capped and returned to a hose rack at a designated storage area. Do not leave open hoses on ground.
- b. Clean up any spilled polymer. Recycle or properly dispose of recovered polymer.
- c. Perform housekeeping in area.
- d. Properly store all equipment.

6. Prepare the empty railcar for shipment.

- a. Inspect the railcar to confirm it is empty. Remove heel if necessary.
- b. Verify all hatches are secured.
- c. Properly install caps on unloading hoses to prevent potential damage and spills.
- d. Clean any polymer spills. Recycle or properly dispose of any spilled polymer.
- e. Remove derailer and safety signs when appropriate.
- f. Provide documentation and communication to railroad.



References:

1. LyondellBasell Website
<https://www.lyondellbasell.com/>
2. Operation Clean Sweep
<https://www.opcleansweep.org/>
3. Association of American Railroads

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