# Loading and Unloading of Material Carriers

## Freeport Site Standard

**Function:** Environmental, Health and Safety  
**No.:** BCF020.011  
**Page:** 1 of 7  
**Reviewed:** 08/16  
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**Supersedes:** 08/12

**Preparer:** Site Safety Representative  
**Owner:** Manager, Environ, Health & Safety  
**Approver:** VP and Gen. Mgr., Freeport

## RECORD OF REVISIONS

<table>
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<tr>
<th>Date</th>
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<tr>
<td>08/16</td>
<td>3</td>
<td><strong>Removed:</strong> 6.0 Attachments: <strong>BeAed Nitrogen Tags/Decals:</strong> BAS001 225-1390-65 2.625x5.25 DANGER OXYGEN DEFICIENT DECAL.pdf; BAS001 425-2390-13 4X7.875 CONTAINS NITROGEN DECALS.pdf ; BAS001 425-2390-66 4X7.875 CONTAINS NITROGEN DECALS.pdf ; and N2 Tag_number_one.pdf</td>
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<td><strong>Added:</strong> 6.0 Attachment link- Hagemeyer: <strong>GHS Nitrogen Tag</strong> for Bulk Containers where inert gas has been introduced into or left in the tank, before returning or storing on site. <em>(per Safety and Health Advisory 222)</em></td>
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1.0 **PURPOSE**

The purpose of this standard is to establish procedures on the safe loading and unloading of tank trailers, van trailers, rail cars, tote bins, drums, and barges.

2.0 **SCOPE**

This procedure provides guidelines to be used in material handling to reduce the potential for injury to persons and damage to equipment. BASF standards will meet or exceed all "HAZARDOUS MATERIALS REGULATIONS" set by the Department Of Transportation in the code 49 C.F.R. guidelines. The standard does not apply to the staging on Freeport Site concrete areas for oversized special transport equipment used in loading or unloading of heavy equipment that is above the maximum weight limits allowed by the Texas Department of Transportation.

3.0 **DEFINITIONS**

3.1 **Class I (flammable) Material** - A liquid with a flash point below 100 F (NFPA 385) having a vapor pressure not exceeding 40 PISA, at 100 F.

3.2 **Class II (combustible) Material** – A liquid with a flash point at or above 100 F and below 140 F.

3.3 **Class III (combustible) Material** – A liquid with a flash point above 140 F and below 212 F.

4.0 **RESPONSIBILITIES**

4.1 **Unit / Department Management**

To ensure that all employees involved in loading or unloading operations of tank trailer, van trailer, rail cars, tote bins, drum and barges comply with this standard.

4.2 **Contract Management**

To ensure that all employees involved in loading or unloading operations of tank trailer, van trailer, rail cars, tote bins, drum and barges comply with this standard
5.0 PROCEDURES

5.1 Safety

5.1.1 A fire extinguisher of proper type and size must be located within 50 feet, maximum, of any loading or unloading operation.

5.1.2 Emergency PPE must be located so that access to the equipment is not hindered by structures or wind direction.

5.1.3 Safety Showers and Eye baths must be tested and be in good working order before any loading or unloading begins.

5.2 General Requirements

5.2.1 All loading and unloading operations of flammable and combustible carriers shall be done in accordance with DOT regulations. CFR 49.

5.2.2 See BCF020.007 Hose and Hose Fittings for requirements for hoses used to load/ offload flammable materials.

5.2.3 Spark-proof tools shall be used for loading or unloading Class I (flammable) materials

5.2.4 Dock boards, gang planks, and portable loading platforms must be of a design that meets the requirements of OSHA Standard Section 1910.30.

5.2.5 Before opening any man-way, dome, valve(s) a carrier containing flammables must be electrically grounded. Before making any connection for the loading or unloading of flammable material, the loading station, the carrier, hoses, and all vessels to be filled must be electrically grounded and bonded.

5.2.6 Before transferring flammable material or toxic materials, barricades must be posted at all vehicle and pedestrian entrances to the immediate area. Appropriate information signs shall be posted.
5.2.7 All carriers being loaded with flammable material or combustible material with temperatures at or above their flash point shall not be splash loaded. Use the built-in dip pipe or, utilize a tee with 3” nipples on the discharge sides of the tee positioned as close to the bottom as possible. This arrangement minimizes the danger of splashing or hose blow-out/exiting the carrier. Any cam lock/quick connect fitting must have the ears pinned or wired down to prevent uncoupling. See attachment in Section 6.0.

5.2.8 In the case where flammable materials are being loaded, the hose of loading arm should extend to the bottom of the car or truck to minimize static electricity build up. See BCF020.007 for additional hose requirements.

5.2.9 Sections 5.2.2, 5.2.4, 5.2.5 above are also applicable to drums and tote bins.

5.3 Addition of Nitrogen (N2) to Bulk Containers

5.3.1 Each department/service group must:
Identify activities where oxygen deficient atmospheres could be introduced into bulk containers.
- Examples of activities include, but are not limited to:
  - Loading/ unloading of bulk containers
  - Integrity/ leak testing of bulk containers using nitrogen or other inert gases
  - Shipping, receiving and/ or storage of “empty” inerted bulk containers
- Apply hazard recognition tags/ labels to warn personnel of the presence of an oxygen deficient atmosphere in bulk containers
  - The hazard notification tagging/ labeling system shall consist of the following elements:
    - All bulk containers which contain oxygen deficient atmospheres must be tagged or labeled to ensure communication of the hazard.
5.4 Tank Trailers

5.4.1 Written Job instructions shall be followed during loading or unloading of all materials.

5.4.2 A DOT qualified person shall be in attendance for the duration of the loading or unloading operation and shall adhere to DOT requirements.

5.4.3 One rear wheel on each side of the tank trailer must be chocked to prevent forward and backward movement of the trailer and drive tractor during loading or unloading. The brakes shall be set. Trailers not connected to drive tractor have brakes set automatically when disconnected.

5.4.4 When unloading flammable materials, the truck engine must be off. Running the truck engine is only allowed if the trucks on-board pump must be used to off load the material.

5.4.5 Tank trailers uncoupled from the drive tractor must have a stabilizing jack under the coupler end, in front of the trailers king pin, in addition to the tank trailers “landing gear” for loading and unloading when staged on any surface other than concrete. (See Section 5.6 Trailer Stabilizing Jacks (supports) and Trailer Dolly Pads for additional requirements)

5.5 Van Trailers

5.5.1 One rear wheel on each side of the van must be chocked to prevent forward movement of the van during loading or unloading when spotted at dock. During loading or unloading while drive tractor is connected the brakes shall be set and engine shutoff. Van Trailers not connected to drive tractor have brakes set automatically when
disconnected. For facilities with mechanisms that lock van trailers to dock, wheel chocks not needed.

5.5.2 A stabilizing jack stand must be placed under the coupler end of the van trailer when the drive tractor has been uncoupled from the van trailer at dock, in addition to the van trailers “landing gear” during loading/unloading. The stabilizing jack stand head must be placed in the front of the trailers king pin.

5.5.3 The rear wheels (tandems) must be moved to the most rear position before spotting a van trailer for loading or unloading. This must be done to prevent tipping the front of the van when the drive tractor is not coupled to the van trailer.

5.5.4 Ramps, dock boards, and gang planks should be visually inspected before each use and must be secured or designed to prevent movement during loading or unloading operations. Defective items should be removed from service and red tagged as defective if defects are found.

5.6 Trailer Stabilizing Jacks (supports) and Trailer Dolly Pads

Stabilizing jacks must have a minimum static capacity rating of 50,000 pounds. The jack must meet OSHA Standard 1910.178(k) (3).

5.6.1 A stabilizing jack shall be placed under the front of all trailers - tank, van or flatbed – not coupled to the drive tractor when staged on any surface other than concrete.

5.6.2 Trailer dolly pads shall be placed under the landing gear of all empty, full or partially loaded tank, van or flatbed trailers any time they are not connected to a drive tractor and staged on any surface other than concrete at the Freeport Site. When trailer is parked on concrete, dolly pads are not required.

5.6.3 Trailer dolly pads minimum size is 18” x 18” x 3” thick.

5.7 Barges

5.7.1 Securing lines must be tight enough to allow for barge movement without straining the transfer hose or loading arm.
5.7.2 Personal floatation devices must be worn when working over water unless a handrail is provided around the work area.

5.7.3 All barge loading and unloading operations shall comply with applicable Coast Guard regulations.

6.0 ATTACHMENTS

**BCF020.011 Attachment A** - Recommended piping arrangements for dip tube and non-splash loading.

**Safety & Health Advisory 152**

**Safety & Health Advisory 182**

**Safety & Health Advisory 182c**

**BCF020.007 - Hose and Hose Fittings**

Hagemeyer- GHS Nitrogen Tag: new Label/Tag for Nitrogen in Bulk Containers (link)

7.0 REFERENCES

**OSHA Powered Industrial Truck Standard, 1910.178**

**OSHA Other Working Surfaces Standard, 1910.30**

Department of Transportation, 49 CFR