

## Lifting Hazards

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Figure 1. Cable fails while lifting a Chlorine isotainer

The March Beacon covered an incident in the port of Aqaba, Jordan, where a chlorine isotainer was dropped onto a ship's deck during the loading process releasing 25 tons of chlorine gas. The incident killed thirteen people and over 300 others were hospitalized. That Beacon focused on the hazards of toxic gases. This Beacon will focus on the physical cause of the incident: a poorly managed lift to load or unload hazardous chemicals. According to officials, the tank's weight was "three times more than the cable load capacity."

A video shows the cable failure and isotainer rupture. Figure 1 has 2 screenshots from that video. [link to video: <https://youtu.be/OXYkMS6IMUs>]

The officials added that the required safety measures for dealing with such hazardous materials were not in place and no qualified person was on the deck at the time to check the loading and unloading procedures.

### Did You Know?

- Lifting operations, whether for moving process equipment or chemicals, are dangerous work. In some companies and countries, a formal lift plan must be developed and approved prior to any lifting activity. Some issues addressed in such a lift plan or permit:
  - Equipment used for lifting must be rated for the weight of the load. It should have identification noting the rated capacity.
  - Lifting cables have a rated temperature range for safe use.
  - Lifting equipment must be inspected prior to use.
  - Crane operators and riggers must be certified for the equipment being used for the lift.
- The crane operator controls the crane's movement. The rigger connects the load, signals the crane operator during movement and disconnects the load.
- The lift plan needs to consider the weather conditions.
- When lifting hazardous chemicals or objects over operating chemical equipment, the lift plan should include any emergency response preparations that could be needed.

### What Can You Do?

- Check that all people involved are aware of the lift plan and their role in it.
- Verify that crane operator and rigger use the same hand signals even if they have radio communication.
- Inspect the final location of the what is being lifted to ensure there is sufficient room for it and everything has been cleared from the area.
- **Never improvise.** If the lift plan cannot be performed as written, STOP! Review the situation and get the proper people involved to modify the lift plan. This includes the approver of the original lift plan, among others.
- Keep people away from the area. Never allow anyone to walk under the load.
- Monitor the weather conditions. Wind and precipitation can make the lifting activities more dangerous. Know when to stop the lifting operation.

**Lifting procedures must ensure that all safety precautions are taken BEFORE the lift is started !**