

Lifting Hazards

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▲ **Figure 1.** A cable failed during a lifting operation, causing a 25-ton chlorine gas release. Image source: AFP photo/Al-Mamlaka TV.

The March 2023 Beacon covered an incident in the port of Aqaba, Jordan, where a chlorine isotainer was dropped onto a ship's deck during a loading process, releasing 25 tons of chlorine gas. The incident killed thirteen people and hospitalized over 300 others. The March Beacon focused on the hazards of toxic gases. This Beacon focuses on the physical cause of the incident: a poorly managed lift that involved hazardous chemicals. According to officials, the tank weighed three times more than the cable load capacity.

A video shows the cable failure and isotainer rupture (Link: <https://youtu.be/OXYkMS6IMUs>). Figure 1 shows screenshots from the video.

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 before any lifting activity. The following are some issues that should be 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 before use.
- Crane operators and riggers must be certified for the lifting equipment. The crane operator controls the crane's movement and the rigger connects the load, signals the crane operator during movement, and disconnects the load.
- The lift plan must 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 in a lifting operation know the lift plan and their role in it.
- Verify that the crane operator and rigger use the same hand signals, even if they have radio communication.
- Inspect the final location of the lifting operation to ensure that everything has been cleared from the area and there is sufficient space for setting the load.
- 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 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.