

## Toxic Gases Require Special Precautions

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▲ A chlorine gas release occurred during a loading operation. Image source: AFP photo/Al Mamlaka TV.

On June 27, 2022, a crane was loading a 25-ton isotainer of liquefied chlorine gas onto a ship in Aqaba, Jordan. A lifting cable snapped, and the tank crashed onto the ship's deck and ruptured. A huge cloud of toxic yellow chlorine gas formed and workers evacuated the area. Thirteen people were killed and about 300 others were hospitalized.

Officials stated that the tank's weight was "three times more than the cable load capacity," and the required safety measures for dealing with the hazardous material were not in place. No qualified person was on the deck at the time to check the lifting equipment and procedures.

Experts said the incident could have caused even more deaths had dozens of workers ending a shift not left the site shortly before the leak. Fortunately, winds also blew the toxic gas away from populated areas in the port city to the outlying desert.

Precautions should be taken during chemical unloading operations in case of leaks, whether the materials are solids, liquids, or gases. In this case, many people were close to the loading area who did not need to be there at the time of the incident.

Read more about the incident at [www.voanews.com/a/jordan-negligence-responsible-for-aqaba-chlorine-tank-explosion-/6644453.html](http://www.voanews.com/a/jordan-negligence-responsible-for-aqaba-chlorine-tank-explosion-/6644453.html).

### Did You Know?

- Toxic gases can cause poisonous effects at relatively low concentrations when in contact with the human body.
- Toxic gases are normally grouped as irritants (*e.g.*, chlorine, ammonia), asphyxiants (*e.g.*, nitrogen, carbon monoxide), anesthetics (*e.g.*, nitrous oxide), and special toxicants (*e.g.*, hydrogen sulfide, hydrogen cyanide).
- Inhalation of toxic gases can be swiftly fatal because the lungs provide a direct route to the bloodstream. Some materials can also be absorbed through the skin and eyes.
- Toxic gases are especially dangerous because they are commonly stored and transported under pressure. They rapidly expand and move through the air when released. Many gases, like hydrogen sulfide and carbon monoxide, are invisible and have unreliable or no odor-warning properties.
- Lifting operations are dangerous work. In some companies and countries, a formal lift plan is required. A future Beacon will cover the essential elements of lift plans and safety practices for heavy lifts in areas where highly hazardous materials are present.

### What Can You Do?

- Preparation for materials handling operations involving toxic gases should always include what to do if a release occurs.
- Always be aware of the materials being handled, equipment in use, people, and surroundings in the areas where you work.
- Read and heed the warnings on labels, placards, and signs where toxic gases are stored and used.
- Keep a safe distance from lifting operations and warn others who may be too close.
- Know where to go and what procedures to follow if there is a release.
- Do not approach toxic gas releases unless you are trained and equipped as an emergency responder. Move cross-wind and away from the path of the gas release to approved safe havens and shelter-in-place locations.
- Wear respirators and other personal protective equipment (PPE) and ensure that they fit. Check and use portable gas detectors. These items must be available and suitable for the release at hand, and their use must be authorized.

**Toxic gas exposures can be fatal. Take the correct actions to protect yourself and others.**