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# Safety Bulletin 2 /2026

## Toxic gases

### Know your cargo

**Fumigation** is the use of gases to eliminate pests. It is done to preserve the quality of cargoes like rice and grains during the voyage. It also prevents the spread of invasive species. The fumigant gases are toxic. Humans can be exposed inside the cargo hold and if there is an accidental leak, also in adjacent spaces. There have been accidents (not on G2 Ocean vessels) where fumigants leaked into the living areas of the vessel. Phosphide is an example of a commonly used and toxic fumigant.

**Chemical cargoes** can be carried in bulk and in big bags. Bulk cargo which possess a chemical hazard (potential for self-heating, emission of toxic gases, oxygen-depleting etc.) is assigned to group B in the IMSBC Code. When shipped in big bags, the IMDG Code will apply to all chemicals defined as "hazardous". It is easy to think that cargo excluded from these categories are not hazardous, but some can be a source of toxic gases, if reacting with another type of chemical, or if there is a fire. On the next page we describe two such incidents from our vessels.

Some chemicals in big bags are not classified as "hazardous" and not subject to the IMDG Code, but it is not risk-free.

Dear all,

G2 Ocean is committed to providing a safe and healthy work environment for all personnel involved in our operations. The purpose of our Safety Bulletins is to raise awareness of health & safety risks associated with cargo operations.

G2 Ocean works with several hundred stevedore companies worldwide. We believe that by seeking and sharing insights across company and country boundaries, we can prevent future incidents together. Descriptions of incidents will always be fully anonymised.

This edition is about two potential sources of toxic gases on board: Fumigation, and chemical reactions involving cargo.

If you have any feedback, please email us at: [safety@g2ocean.com](mailto:safety@g2ocean.com)

Best regards G2 Ocean Team

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A wonderful creature, but not welcome on board. Fumigation stops the spread of pests.



**Case 1:** Different chemicals were separated by tarpaulin, as required. A tiny amount of residue left on the tarpaulin, initiated a chemical reaction. The blurry part of the picture is fumes.

**Case 2:** On rare occasions, toxic gases are visible. Orange fumes developed from a mix of rainwater, residues of sodium metabisulfite and an oxidizing cargo. Note that sodium metabisulfite is not included the IMDG Code.



**Insight** is one of G2 Ocean's safety behaviours. We expect this behaviour from our own employees, and everyone we work with, including crew and stevedores. It appears that there is not enough knowledge in the industry about potential sources of toxic gases. Seek and share insight on this topic.

**Consequences:**

- In the above two cases, no persons inhaled any fumes and there were no injuries.
- A study on fumigation was submitted to IMO in 2025 and shared by ICHCA. It states that from fumigation incidents alone, there have been 46 fatalities among seafarers and shore workers, since 2008

**Lesson learned:**

- When responding to incidents: Think about your own safety, before making any attempts to rescue others or stop a chemical reaction.
- Study the Safety Data Sheet for all chemical cargoes, also those not included in the IMSBC and IMDG Codes. Segregate different types of chemicals as required, and make sure residues are not mixed.
- Study IMO's MSC.1/Circ.1264, issued in Sept 2025, if fumigation is required. This updated circular is available online from several open sources and provides updated guidelines for safe fumigation of cargo holds.