

Fire and Rescue NSW

Operations Bulletin 2013/01

Aluminium phosphide canisters



Issue

Aluminium canisters containing aluminium phosphide have been found washed up on the east coast of Australia. If breached, these canisters can release phosphine gas. Phosphine is classified as a toxic and flammable gas.

Background

In early 2012, an aluminium canister 23 cm high and 10 cm in diameter, sealed with a plastic cap, was found on a far north Queensland beach (Figure 1). This canister was found to contain solid aluminium phosphide pellets approximately 1.5 cm in diameter.



Figure 1

Precautions

Firefighters responding to incidents suspected of involving these canisters should treat them as hazmat incidents.

This means that:

- safe approach and respiratory protection must be a priority
- breathing apparatus and chemical spillage clothing must be worn when in the vicinity
- a Primary or Intermediate Hazmat Unit must be called because they can detect phosphine using the Drager chip measuring system (CMS), the AP2/4c or the PID
- an initial exclusion zone of 600 m must be established and firefighters should monitor the perimeter using the detectors suggested above.

Hazards

Aluminium phosphide pellets are used in industry and shipping to control rodent populations.

Aluminium phosphide will react with moisture, water or acids to generate phosphine gas (UN2199), which is classified as a toxic, flammable gas.

Exposure to low concentrations of phosphine can cause severe injury, even death. Avoid exposure in enclosed spaces. The short term exposure limit (STEL) is 1 ppm and the Immediately Dangerous to Life and Health value (IDLH) is 50 ppm.

Phosphine gas is also flammable in a range from 1.7% to 98%. It is described as having an odour varying from garlic-like to rotten fish.

Phosphine enters the body via the respiratory system and affects the respiratory and circulatory systems. Symptoms include headache, rapid pulse, low blood pressure, gastric and/or chest pain and cardiac arrest.

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Aluminium phosphide cylinders

Contact officers:

Contact your Duty Commander and Hazmat for more information on managing the situation.

Contact Officer: Inspector Duncan White, Deputy Manager Hazmat, 0438 291 908, Duncan.White@fire.nsw.gov.au.

Noted: Station Commander	A	B	C	D	Other
Checked: Duty Commander					

Previous Operations Bulletin: 2012/05, [Safe work on roofs](#).