

11  
January  
2023

# WSH ALERT

## FATAL ACCIDENT

### Acetylene gas explosion kills worker

On 30 December 2022, two workers were checking and maintaining spent cylinders when an explosion occurred. One worker was killed while the other worker was conveyed to the hospital for smoke inhalation and subsequently discharged.

Preliminary investigations revealed that the cylinders contained remnant acetylene, which fuelled the explosion when it was released during cylinder maintenance.



**Scene of the accident.**

Spent gas cylinders may contain significant amounts of remnant gas, which can cause death or serious injuries when released. The WSH Council calls on all companies storing or handling flammable gas cylinders to undertake an urgent assessment of their safety measures.

### What companies should do

Companies should urgently assess and ensure that their WSH management system includes the following measures or checks:

- Safe remnant gas release:** Discharge flammable gases from cylinders only under safe conditions and after a thorough assessment of work and environmental risks. Any release should be properly controlled. Flammable gases should be discharged through vent lines to a safe location, with control valves and flame arrestor as well as effective ventilation to prevent build-up of a flammable mixture.
- Remove ignition sources:** Remove all potential sources of ignition (e.g. open flames, frictional sparks, hot surfaces) from the designated work area before discharging flammable gas. Bonding and grounding may be necessary to reduce static discharge. Check electrical outlets for overloading as well as electrical equipment for defective or exposed wiring as these can cause overheating or produce sparks.
- Safer equipment and tools:** Use non-sparking tools when working with gas cylinders containing flammables. Ensure that electrical equipment (including work area lighting) used is rated explosion-proof.
- Segregation of incompatible work:** Check for incompatible work (e.g. hot work or any work that generates sparks) nearby before discharging flammable gas. Do not proceed with flammable gas discharge if there is incompatible work.
- Hazard communication:** Label gas cylinders as per *SS 586: Part 2: 2014 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods* to warn of the hazards and precautions for proper storage and handling. Brief workers on the risk controls in place and provide on-site supervision to ensure the work is carried out safely.
- Personal protective equipment:** In addition to fire-retardant coveralls, equip workers with personal gas detectors or install fixed gas detectors within the work area where gas can accumulate to alert workers to the build-up of a flammable mixture.

For more information, refer to WSH (General Provisions) Regulations, *SS 639: 2018 Code of Practice for the Filling, Inspection, Testing and Maintenance of Gas Cylinders for the Storage and Transport of Compressed Gases: Part 3 Acetylene Cylinders – Periodic Inspection and Maintenance*, WSH Council's [Code of Practice on WSH Risk Management](#), and [WSH Guidelines on Management of Hazardous Chemicals Programme](#). Refer to the Safety Data Sheet for detailed information specific to acetylene.

Under the WSH Act, first-time corporate offenders may be sentenced to the maximum fine of \$500,000 whilst individuals can either be sentenced to the maximum fine of \$200,000 and/or an imprisonment not exceeding 2 years. Read more on the [WSH Act penalties](#).

During the Heightened Safety Period (1 September 2022 to 28 February 2023), the Ministry of Manpower will impose severe actions for serious WSH lapses, which include:

- Debarment from hiring new work pass holders
- Company leaders to personally account to MOM and take responsibility for rectifications
- Engaging external auditors to conduct a thorough review of company's WSH processes

\* Information on the accident is based on preliminary investigations by the Ministry of Manpower as at 6 January 2023. This may be subject to change as investigations are still on-going. Please also note that the recommendations provided here are not exhaustive and they are meant to enhance workplace safety and health so that a recurrence may be prevented. The information and recommendations provided are not to be construed as implying liability on any party nor should it be taken to encapsulate all the responsibilities and obligations under the law.

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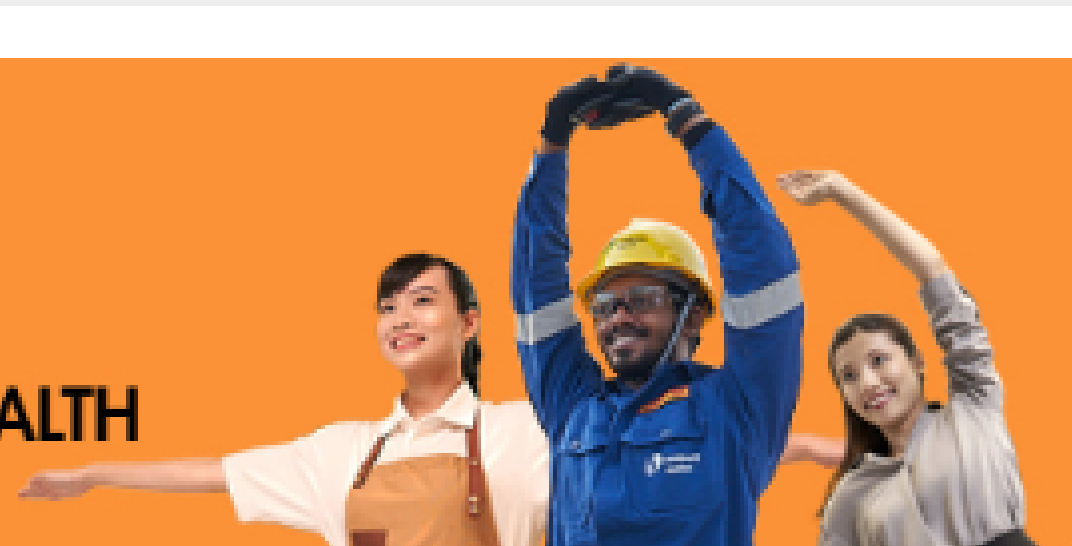


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