

### WSH Alert – Dangerous Occurrence: Fire

Recently, a fire broke out at a construction worksite and lasted for about an hour before it subsided. The area was evacuated and no injuries were reported. Badly burnt acetylene tanks were found to be in close proximity to the area designated for hot works.



### Recommendations for Fire Prevention\*

1. Prior to any work operations, risk assessment must be conducted to identify the potential hazards and the risks involved. Safe work procedures must be established with the implementation of the necessary control measures to ensure safe work operations. Appropriate Personal Protective Equipment has to be provided to the workers involved in the operations.
2. Perform periodic maintenance and inspection of equipment and tanks to uncover defects or leakages that may lead to fire or explosive hazards.
3. Cylinders containing acetylene should be stored apart from oxygen and other oxidizing agents. Acetylene is a strong reducing agent and will react violently with oxidizing agents (such as fluorine or chlorine) causing fires or explosions. With oxygen, acetylene can form a highly flammable mixture that can be easily ignited.
4. Cylinders that contain flammable gases, such as acetylene or oxygen should be kept away from sources of heat during storage. Oxygen, while not a flammable gas, supports combustion and should be stored in a similar fashion.
5. Any accidental gas leaks can be detected through gas testing. Acetylene gas detection systems or acetylene leak detectors can be used to monitor for any accidental leakages of the gas in the work area.

6. Gas hoses used should be of good condition, they should be checked for leaks before usage. Unauthorized repair of damaged hoses must not be carried out.

7. Areas where hot works are carried out should be cordoned off or isolated, where possible, to prevent sparks or other flying objects from escaping the designated area, where they may come into contact with flammable substances.

8. Implement a permit-to-work system for operations that involve hot work or any works that entail the use of flammable substances. The developed control measures arising from the risk assessment conducted shall be effectively implemented and enforced regularly by appointed company representatives.

9. Emergency response procedures and evacuation plans must be prepared and communicated to workers. Fire fighting equipment and adequate training to use such equipment must be provided. Fire fighting equipment must be tested by a competent person at regular intervals.

### Further Information

1. Workplace Safety and Health Act 2006

2. Workplace Safety and Health (General Provisions) Regulations

3. Workplace Safety and Health (Risk Management) Regulations

4. SINGAPORE STANDARD CP 12 : Part 2 : 1998 – CODE OF PRACTICE FOR The filling, inspection, testing and maintenance of containers for the storage and transport of compressed gases; Part 2: Containers for dissolved acetylene gas

5. SINGAPORE STANDARD SS 510 : 2005 – CODE OF PRACTICE FOR Safety in welding and cutting (and other operations involving the use of heat) (Formerly CP50)

6. SINGAPORE STANDARD 532 : 2007 – CODE OF PRACTICE FOR The storage of flammable liquids.

\*Please note that the information provided is not exhaustive and for the benefit of enhancing workplace safety and health so that a similar recurrence may be prevented. The information provided is not to be construed as implying any liability to any party nor should it be taken to encapsulate all the responsibilities and obligations of the reader of WSH Alert under the law.



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