

Acetylene gas explosion

Safety Flash Published on 19 March 2025 Generated on 9 April 2025 IMCA SF 05/25

There was a small explosion and fire when crew were working on an oxy-acetylene system.

IOGP Life Saving Rules:



Hot work

What happened?

Two engineers were setting up a new oxygen and acetylene cylinder for testing. They installed a flash arrestor and hoses on the cylinder, ensuring they were free from oil and grease. One of the engineers opened the nozzles of the oxy-acetylene bottle, igniting flames at the nozzle tip. A small explosion occurred, followed by flames from the acetylene hose connection on the torch. The hoses burst within seconds, causing that worker to get burnt. The other engineer pulled the injured person to safety. The fire was extinguished using a dry powder fire extinguisher. The injured engineer suffered first-degree burns.

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What went wrong?

- At the time of the incident, there was no Hot Work Permit in place.
- The person injured was wearing no proper PPE (welding apron, appropriate coveralls, or goggles).

What was the cause?

- The Oxygen/acetylene torch was not equipped with adequate flame or flashback arrestors.
- There had been excessive bending of the hoses which had led to a compromised flow of gas and increased risk of rupture under pressure.
- There was faulty equipment: The hose crimps on the cutting valve (acetylene) were faulty which led to the flashback occurring.

Lessons learned

- Fit flash arrestor to both the oxygen & acetylene gas hoses near to the regulators, for length hose, fit arrestor on both the torch and regulator.
- The fitting of a flashback arrestor is not a substitute for safe working practices. After a flashback, carefully check for damage to the torch, hoses, regulators, flashback arrestor and other components, if found

faulty replace the parts.

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