



ACETYLENE CYLINDER EXPLOSION

Date Of Incident:

Location :

Description of the accident:

An operator was lighting an oxy/acetylene cutting torch. There was a flashback to the acetylene cylinder, which started to vibrate. Three minutes later the cylinder exploded. The cylinder split into two parts. The largest part shot through window and traveled 23metres before embedding itself in an embankment at the factory boundary. The workshop was badly damaged. The windows were blown out and the roof collapsed. The explosion also lifted the roof of the main factory building, which had to be replaced. The cost of the damage was over £1 million. Fortunately, no-one was injured, because the operator realized that the cylinder was in a dangerous condition. He raised the alarm and the factory was immediately evacuated.

No. of person injured:

One person was injured.

How accident occurred:

Acetylene is an extremely flammable gas. It is different from other flammable gases because it is also unstable. Under certain conditions, it can decompose explosively into its,

Constituent elements, carbon and hydrogen. The operator did not fully appreciate the hazards of acetylene. if there is a flammable mixture of fuel gas and oxygen in the hoses when the torch is lit. If it is not stopped, the flame will ignite the mixture and will travel backwards from the torch,

Along the hoses, through the regulator and into the cylinder. A flashback can trigger decomposition of the acetylene in the fuel hose, in the regulator and in the cylinder itself.

Root cause:

The correct lighting up procedure was not followed.

The gas hoses were not purged.

The acetylene gas was not at the correct pressure. ✓ The gas cylinders were not protected with flashback Arresters.

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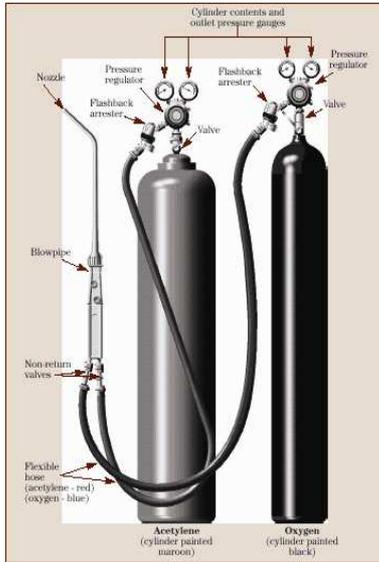
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