SAFETY ALERT

MINE SAFETY & ENVIRONMENT

EXPLOSION IN REAGENT TANK ON SHOTCRETING RIG

Incident

A plant mechanic was making a cut, using oxygen and acetylene equipment, in a concrete hopper at the rear of a shotcreting machine when an explosion occurred. The cover on the 750 litre reagent tank was blown off and the tank was deformed. No one was injured in the incident. However, the tradesman was lucky not to be seriously injured as he was standing just to the left of the reagent tank. The force of the explosion detached the camp lamp battery from his belt and dislodged his hard hat and lamp.

Cause

It was determined, that over a period of time, there had been a chemical reaction between the steel tank and the reagent which in turn caused hydrogen gas to be given off. The gas became trapped in the tank as the breather hose was below the bottom of the tank. The gas was then ignited either by the flame from the torch or sparks from the cutting.

Comments and Preventative Action

The material data sheet prepared by the supplier of the reagent states:
Storage Incompatibilities – strong oxidising agents, chlorites, hypochlorites and sulfites. Avoid contact with metals, aluminium, copper, zinc and their alloys."

- There is a need to incorporate in the purchasing system a procedure which minimises the risk of undocumented chemicals entering the mine site.
- There is a need to ensure that when tanks are to be used for the storage of chemicals, reference is made to the material data sheets to check what type of material can be used for construction of the tank.

For additional information contact Mr. R. Johnson, Inspector of Mechanical Engineering on (08) 80800622.

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MINERAL RESOURCES NEW SOUTH WALES

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