



Mines Safety Bulletin No. 94

Date: 16 December 2010

Subject: Use of contact cleaning agents

Summary of hazard

This bulletin was prompted by concern relating to serious incidents where employees have received burns to their upper bodies when an ignition source has been introduced into the work area after contact cleaner has been used.

In the first incident, a fitter was fault finding on a water truck with the ignition on. He removed the fuse panel from behind the driver's seat and sprayed contact cleaner on the wiring so he could better see the wires he wanted to trace. After spraying for 10 seconds he waited a short time and then pulled the fuse panel further out. In doing so he inadvertently shorted a connection to the body of the vehicle, igniting the vapour from the contact cleaner. He sustained significant burns.

In the second incident, a fitter was removing broken studs with easy-outs from the front differential of a loader. He had sprayed contact cleaner around the differential to clean the area. He heated the area around the broken stud with a micro-jet burner and the vapours ignited, burning his face.

Contributory factors

Preliminary investigations into these incidents confirmed the following.

- Some employers, supervisors, operators and contractors are not sufficiently aware of all the hazards involved with the use of such cleaning products and had not put controls in place.
- Although the cleaner is a precision electronic cleaning solvent, it is often used for general cleaning purposes.
- The resultant vapour is heavier than air and sinks into confined areas.
- There was inadequate ventilation of the work area.
- The contact cleaner is flammable when it comes into contact with a heat source.
- The lower explosive level of the vapour is 1% and the upper explosive level is 7%.

Action required

This bulletin serves as a reminder to responsible persons at mines to review current work practices and ensure their adequacy. It is appropriate to consider the following actions in relation to contact cleaners and other flammable spray products.

- Where possible, eliminate the use of flammable contact cleaners and hazardous cleaning products.
- Substitute flammable products with non-flammable products.
- Provide adequate controls for the use of such products.
- Where it is necessary to use contact cleaners and similar products, ensure directions and cautions on the container and in the manufacturer's literature are strictly adhered to, including the provision of suitable personal protective equipment (PPE) and clothing.
- Ensure copies of material safety data sheets (MSDSs) for the products are located at the workplace, appropriate risk assessments are conducted, and control measures are implemented in accordance with Part 7 Division 3 of the Mines Safety and Inspection Regulations 1995.

- Ensure containers are stored in appropriate storage facilities when not in use.

The contact cleaner should be restricted to the cleaning of precision electronics and the warnings on the container strictly adhered to. These include the following warnings provided on the container.

DIRECTIONS:

- 1. DEACTIVATE AND ISOLATE EQUIPMENT BEFORE USE.**
- 2. VENTILATE AFTER USE TO DISSIPATE FLAMMABLE VAPOURS FOR 30 MINUTES.**

CAUTIONS:

EXTREMELY FLAMMABLE: FAILURE TO ADEQUATELY VENTILATE AFTER USE CAN CAUSE VAPOUR TO IGNITE OR EXPLODE.



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