



Safety alert 05/2012

Pumping of hazardous chemicals

The purpose of this alert is to highlight the importance of using safe procedures when pumping hazardous chemicals.

Background

Two workers were transferring chromic acid solution from an intermediate bulk container (IBC) to another vessel using a submersible sump pump. While the pump was running, the outlet hose came off and sprayed chromic acid at high pressure over the two workers. The chromic acid ran into the workers' eyes and (particularly as one of them was wearing contact lenses) there was the potential for serious eye injuries.

Contributing factors

- The hose was not adequately secured to the pump outlet.
- The workers had no experience in the use of the pump and were not adequately trained in how to safely use the pump. In particular they were not trained in how to correctly secure the hose to the pump outlet.
- The workers were not adequately supervised.
- The workplace did not have safe working procedures / safe systems of work for transferring hazardous chemicals.
- The workers were not supplied with the correct personal protective equipment (PPE) for conducting the task.
- The workplace did not have adequate emergency procedures for dealing with worker exposure to hazardous chemicals.
- The workplace did not have a Material Safety Data Sheet (MSDS) for the chromic acid solution to which the employees were exposed. The workplace had an MSDS for the solid chromium trioxide material used in the chromic acid solution, and provided this to the initial treating doctor. This information did not adequately inform the doctor of the hazards associated with exposure to the material.

Action required

1. Ensure safe systems of work (documented procedures) are in place for transferring hazardous chemicals at workplaces. The procedures should specify how to correctly select, prepare, operate, clean and maintain pumping equipment, as well as specify the correct PPE and any other controls required.
2. Ensure workers are adequately trained in the safe system of work.
3. Ensure inexperienced workers are adequately supervised.

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4. Develop procedures for dealing with workplace emergencies, including exposure to hazardous chemicals. Ensure workers are trained in the procedures, and the procedures are practiced at regular intervals.
5. Ensure that adequate information (eg MSDS or equivalent) is available at the workplace for solutions or process liquors that contain hazardous chemicals to which workers may be exposed.
6. Consider the use of specialised chemical pumps, constructed of materials compatible with the hazardous substances transferred at the workplace.



Unsecured Hose



Secured Outlet Hose

Further information

1. *Checklist for chemicals in the workplace*
2. *Guidance Note - Controlling Hazards in the Electroplating Industry*
3. *Code of Practice – First Aid Facilities & Services, Workplace Amenities & Facilities, Personal Protective Clothing & Equipment*

All available from www.worksafe.wa.gov.au

Further controls may be required for pumping dangerous goods. For information regarding dangerous goods, contact the Department of Mines and Petroleum, www.dmp.wa.gov.au.

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Regional Offices