

Safety and health alert

25/95 Hydrochloric acid bath chemical reaction

Incident

An East Perth automotive conversion company premises was evacuated in July 1995 when a 17 year old trades assistant inadvertently put two magnesium alloy crank case covers into a hydrochloric acid bath.

Hydrochloric acid, which is normally used to remove rust from iron, caused a chemical reaction with the magnesium alloy that produced hydrogen gas. The chemical reaction also produced hydrochloric acid fumes and caused the bath to become hot.

The fumes prevented workers removing the crank case covers from the bath and the building was evacuated. The fire brigade neutralised the acid bath and removed the crank case covers.

Fortunately no one was injured in the incident. Hydrochloric fumes are an irritant and can cause tissue damage. Hydrogen gas is highly flammable.

Factors

The trades assistant did not have adequate training, instruction and supervision.

He was told not to put magnesium alloy parts into the hydrochloric acid bath, but was not instructed of the consequences and emergency procedures.

Recommendations

Workplaces must have safe systems of work for all employees to carry out their work without being exposed to hazards.

Employers must ensure that safe use, handling, processing, storage, transportation and disposal of substances in the workplace so that employees are not exposed to hazards.

Employers must provide information, instruction, training and supervision so that employees can perform their work so they are not exposed to hazards.

Warning signs of possible hazards must be placed in appropriate areas.

Employees should be familiar with hazardous substances in the workplace. Material Safety Data Sheets must be available and employees should be able to identify the substance and understand the health effects; first aid requirements and medical advice, following exposure; exposure limits; ventilation required' personal protection necessary' flammability; storage and transport; spills and disposal and fire and explosion hazard.



Further Information

Further information can be obtained from the WorkSafe internet site www.worksafe.wa.gov.au, or by contacting customer service on 1300 307 877 or email: safety@docep.wa.gov.au.

Date: October 1995

A414230

