Working with Acids

SAFETY AWARENESS KEPT SIMPLE

Safety Talk Delivery Pack

This Safety Talk contains:

- 8 - Page Talk Text

- 7 - OHP Presentation Slide Pack

- 14 - A5 talk Handout Sheets

- Assessment and Assessment Answers Sheet

- Employee Attendance Register

- A "How to Present Safety Talks Guide"

Using the talks (Extract "How to Present Safety Talks"):

Plan which topic you want to discuss with your team.

Read through the script before you hold the meeting to familiarise yourself with the material.

Start the talk with a comment that makes the topic relevant to the team. For example, if you have seen a number of people using ladders incorrectly, use this as your opening comment.

Follow the script but don't read straight from the page. The script is only a prompt and it will sound better if you use your own words.

Ask the questions as they appear in the script. It is important you do this because they are a lead in to the next section of your talk.

Give the team enough time to answer the questions. Safety talks can be boring for the team if you are the only one talking.

Hand out the information sheets as they appear in the script. Don't hand out all the information sheets at the start of the talk otherwise there is a temptation for the team to read ahead and not listen to the points you are making.

Collect the information sheets at the end of the talk so they can be used again.

To obtain your Safety Talk Delivery Pack go to: www.smartsafe.com.au

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PREPARATION

Accessories to have on hand for the talk are:

- a photocopy, for each participant, of the Safety Data Sheet for the most commonly used acid in the workplace;
- a PVC apron;
- splash-proof goggles or a faceshield;
- rubber boots;
- PVC or nitrite rubber gloves; and
- a Type B respirator or full-face airline respirator.

INTRODUCTION

Every year, hundreds of employees suffer severe and sometimes permanent eye, skin and respiratory damage from exposure to acids.

There are, however, many thousands of other employees who have worked with acids for years and never experienced an injury.

We are going to look at how we can avoid being a part of that unfortunate first group by talking about using acids in your workplace.

Accidents involving the use of acids usually occur because:

- the health hazards are not known; and
- the safe handling precautions are not known.

If a mishap does occur when using an acid, the outcome can be worse, if:

- you don't wear the correct Personal Protective Equipment;
- you don't know the required First Aid treatment; and
- you don't follow the correct Emergency Procedures.

LEARNING OUTCOMES

By the end of this talk you will understand:

- what an acid is;
- how acids cause damage;
- how to avoid contact with acids;
- the recommended First Aid treatment;
- operational and maintenance concerns; and
- what to do in the event of a mishap in order to minimise the environmental and equipment damage.

WHAT IS AN ACID?

An acid is a low pH corrosive chemical, usually in a liquid form. It can, however, be a vapour or mist as well.

ℹ️	**Hand out sheet 1 – What is an acid?**

An acid is a corrosive chemical that can very quickly cause burns.

ASK	***"What scale indicates how corrosive an acid is?"***

The pH scale of a substance determines if it is an acid and how corrosive it is.

All acids contain hydrogen ions, and it is the concentration of these ions that produce the corrosive effects of acids.

A special measurement scale called **pH** is used to describe the concentrations.

Numbers between 0 and 14 make up the scale, with **values less than 7** representing **acids** and values **above 7** representing **alkalis**.

A pH of 7 indicates that a substance is **neutral** – water has a pH of 7.

A difference of 1 pH value represents ten times more concentration.

For example, vinegar has a pH of around 4 and since the difference between it and water is 3, it is 10 x 10 x 10 (or 1,000) times more acidic than water.

Acids such as Nitric and Sulphuric have pH's of less than 1, meaning they are over 10,000 times more corrosive than vinegar.

The simple rule to remember is:
- if the pH is **less** than 7, the substance is acidic; and
- the **lower** the pH, the more corrosive the acid is.

ASK	***"What are the three forms that you can encounter acids in?"***

It is usually in a liquid form, but can become airborne in the form of vapour or mist.

Sample OHP Presentation Slide

Sample A5 Handouts

Sheet 5 – First Aid Treatment

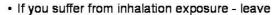- Rinse the exposed area for 15 minutes. If exposed to hydrofluoric acid, rinse for 1 minute and apply Calcium Gluconate gel. In both instances, seek medical attention.
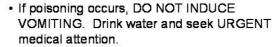- Contaminated clothing must be removed immediately and laundered before used again.
- If you suffer from inhalation exposure - leave
- the area IMMEDIATELY and seek medical attention. If you are helping someone who is exposed to vapours wear a full face respirator.
- If poisoning occurs, DO NOT INDUCE VOMITING. Drink water and seek URGENT medical attention.

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