



3.19

Chemical Safety Management

Information Sheet : Cyanides

Purpose

The purpose of this information sheet is to guide workers and supervisors in general precautions, storage and emergency responses for cyanides.

Q1 Are there any reference materials I should read before working with cyanides?

- Please refer to the [Guide for preventing and responding to cyanide poisoning in the workplace 2013](#).

Q2 Why do cyanides warrant special care?

- Hydrogen cyanide gas and cyanide salts are among the most rapidly acting of all known poisons. Even small concentrations are extremely hazardous. Cyanide salts are odourless when dry and when damp they may have a slight odour of bitter almonds. A person's sense of smell must not be relied on as a warning signal to detect its presence as the sense of smell easily fatigues and not everyone can smell it.
- Hydrogen cyanide gas is highly flammable and in liquid form is both highly volatile and flammable.
- Exposure of cyanides to strong oxidisers such as nitrates and chlorates may cause fires and explosions.

Q3 What should be considered before starting any experiment with cyanides?

- Please refer to the [Guide for preventing and responding to cyanide poisoning in the workplace 2013](#).
- A full risk assessment, safe operating procedure, and emergency procedures must be developed (including distance to the nearest hospital) prior to any work commencing and signed off by a supervisor if completed by a HDR student.
- Facilities
 - Emergency showers and eye-wash facilities must be available within the immediate work area where cyanide compounds are regularly handled.
 - Cyanides must not be used in an open laboratory. Work with cyanides must be contained in a fume cupboard with fully functional extraction rate (i.e. fully compliant cupboard).
 - Warning signs must be posted around the immediate work area.
- Personal Protective Equipment
 - Wear impervious gloves, e.g. PVC, at all times when handling cyanides.
 - Wear a protective apron, rubber boots and face shield whenever there is the possibility of being splashed with a cyanide compound.
 - Handle gloves and other protective equipment carefully and safely. Wash equipment immediately after use and store clean items well away from cyanides.
 - Use the appropriate respiratory equipment for the concentration of cyanide dust or gas that may be in the air. This should comply with [Australian Standard AS 1716 Respiratory protective devices](#). If there is any possibility of high concentrations of hydrogen cyanide gas, use self-contained or air-supplied breathing apparatus.
 - Respiratory equipment should be kept in order and ready for use at all times. Do not store the equipment where cyanides are used or stored.

HSW Handbook	Chemical Safety Management (Information Sheet)	Effective Date:	9 September 2014	Version 2.0
Authorised by	Associate Director HR Policy, Safety and Compliance	Review Date:	9 September 2017	Page 1 of 2
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Information Sheet : Cyanides (Continued)

Q4 What general rules should be used when handling cyanides?

- Do not work with cyanides alone or after hours
- Cyanides must only be handled by a trained person who has completed or reviewed and is trained in the risk assessment (which includes emergency procedures) and has implemented appropriate control measures.
- Do not mop up perspiration with either the sleeves of overalls or with fabric which is kept in the areas where cyanides are used or stored.
- Remove pervious clothing immediately if wet or contaminated. This clothing should be stored safely in closed containers until laundered or disposed of. Under no circumstances should this clothing be taken home.
- Do not touch the nose, eyes or mouth when handling cyanides.
- Do not eat, drink or keep food, drinks or utensils in areas where cyanides are in use.
- Hands and face must be washed well before eating, drinking or smoking and before using toilet facilities.
- Decontamination of the work area is required on completion of work and any unused cyanide compound must be returned to a locked cupboard.

Q5 How should I store cyanides?

- Keep workplaces dry (reaction of cyanides with water can produce the highly toxic and flammable gas hydrogen cyanide).
- Prevent contact with acids or acid fumes as hydrogen cyanide may be produced.
- Prevent contact with strong oxidising agents (e.g. nitrates, nitrites, peroxides and chlorates).
- Small quantities of cyanides should be stored separately in a locked poisons cupboard.
- Do not store respiratory equipment, clothing or other protective equipment where cyanides are kept.
- For large quantities please contact the HSW Team for advice.
- Please also refer to [the Guide for preventing and responding to cyanide poisoning in the workplace 2013](#).

Q6 What should you do in the event of an emergency with cyanides?

- Please refer to [the Guide for preventing and responding to cyanide poisoning in the workplace 2013](#).
- Follow the protocol from your risk assessment.
- In all cases of cyanide exposure, even if the casualty appears to recover quickly, they should be taken to the nearest medical facility for assessment and monitoring by a registered medical practitioner.

Further information

If you require further information, please contact a member of the [HSW Team](#).

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