







Enzymes

including amylase, catalase, cellulase, diastase, lipase, proteases (eg, pepsin, trypsin), urease

Substance	Hazard	Comment
Enzymes Powders 'Biological' detergents contain enzymes.	 CORROSIVE  HEALTH HAZARD  IRRITANT	DANGER: Most enzymes are sensitisers (see below) and may cause allergy or asthma symptoms, or breathing difficulties if inhaled. DANGER: Some enzymes can cause serious eye damage. WARNING: Many enzymes irritate the eyes, skin and respiratory system.
Enzymes Concentrated solutions	 CORROSIVE  HEALTH HAZARD  IRRITANT	DANGER: Most enzymes are sensitisers (see below) and may cause allergy or asthma symptoms, or breathing difficulties if inhaled. DANGER: Some enzymes can cause serious eye damage. WARNING: Many enzymes irritate the eyes, skin and respiratory system.
Enzymes Dilute solutions (less than 1% w/w) or 5% Lipase	Currently not classified as hazardous	Most at these concentrations are unlikely to offer any significant risk. Biological systems are rich sources of enzymes, eg, liver (catalase), saliva (amylase).
<p>Note: Some people are allergic to particular substances; their bodies' immune system reacts to these substances to an unusual extent. Asthma is one type of allergy which results in breathing difficulties. A sensitiser is a substance that may produce only a small or even no allergic reaction when humans are first exposed to it (sometimes over an extended period of time) but can produce a much more severe reaction on subsequent occasions, even when the body is exposed to much smaller amounts.</p>		

Typical control measures to reduce risk

- Use the lowest concentration/smallest amount possible.
- Wear eye protection for enzyme at 1% or higher concentration
- Avoid powdered enzymes escaping into the air; use a fume cupboard (not switched on) when transferring/dispensing enzyme powders.
- Do not spray enzyme solutions.

Assessing the risks

- What are the details of the activity to be undertaken? What are the hazards?
- What is the chance of something going wrong?
eg, could enzyme dust be breathed in?
- How serious would it be if something did go wrong?
- How can the risk(s) be controlled for this activity?
eg can it be done safely? Does the procedure need to be altered?

Emergency action

In all emergency situations, alert the responsible adult immediately. Be aware that actions may include the following:

- In the eye Irrigate the eye with gently running tap water for at least 20 minutes. Call 999/111.
- Swallowed Do no more than rinse and spit with drinking water. Do **not** induce vomiting. Call 999/111.
- Dust breathed in Remove the casualty to fresh air. Call 999/111 if breathing is difficult.
- Spilt on the skin or clothing Remove contaminated clothing. Wash off the skin with soap and plenty of water. Rinse contaminated clothing.
- Spilt on the floor, bench, etc Scoop up powders, taking care not to raise dust. Wipe up solution spills or any traces of powders with a damp cloth.