

lechyd a Diogelwch – Health and Safety

LABORATORY SAFETY – SAFE USE OF MICRO CENTRIFUGES

This Information Sheet provides guidance on using micro centrifuges safely in a laboratory environment.

A centrifuge is an item of equipment that rotates at very high speeds to separate liquids from solids by separating particles from a suspension. There are a number of different types at the University from bench mounted to larger floor mounted centrifuges. This Information Sheet **only** refers to the bench mounted Micro Centrifuges.

Micro Centrifuge Hazards



If micro centrifuges aren't handled properly the following hazards may arise:

- Injuries to the hands and fingers from the rotor.
- An unbalanced rotor can cause violent movements, leading to damage to both the centrifuge and other items near it.
- Samples being flicked into the face or eyes when opening the lid.
- Biological and chemical risks from samples being centrifuged.
- Samples being ejected if the centrifuge isn't loaded correctly.

Before you Start

Always take the following steps before centrifuging any samples:

General

- **CHECK** you know how to use the centrifuge. If you don't, ask someone!
- **ALWAYS** refer to the COSHH Assessment to make sure you understand any chemical or biological hazards associated with the sample before centrifuging it.
- **REFER** to the Code of Practice on Centrifuging Flammable Substances before centrifuging them.

Always



the

**CODE OF
PRACTICE
CENTRIFUGING
FLAMMABLE
SUBSTANCES**

before
centrifuging



- **ALWAYS** wear appropriate PPE eg gloves and goggles (the following chart and the COSHH Assessment should help you). But remember, different thicknesses and materials of gloves are needed dependent on what you are doing eg thicker gloves will be needed if you are handling concentrated acids or bases.

Chemical group	Glove material					
	Natural rubber	Nitrile rubber	Neoprene™	PVC	Butyl	Viton™
Water miscible substances, weak acids/alkalis	✓	✓	✓	✓	-	-
Oils	-	✓	-	-	-	-
Chlorinated hydrocarbons	-	-	-	-	-	✓
Aromatic Solvents	-	-	-	-	-	✓
Aliphatic solvents	-	✓	-	-	-	✓
Strong acids	-	-	-	-	✓	-
Strong alkalis	-	-	✓	-	-	-
PCBs	-	-	-	-	-	✓

Opening the Centrifuge Before and After Use

- Never open the centrifuge until it has come to a complete stop.
- If you can open the 'lid' whilst the rotors are still spinning, report this immediately to your Chief Technician / Lab Technician.

Loading and Operating the Micro Centrifuge

- Always use the correct rotor.
- Use tubes that are suitable to contain the sample being centrifuged.
- Before using the tubes, always check them to ensure they are clean, with no cracks etc.
- Do not overfill tubes and make sure they are tightly sealed.

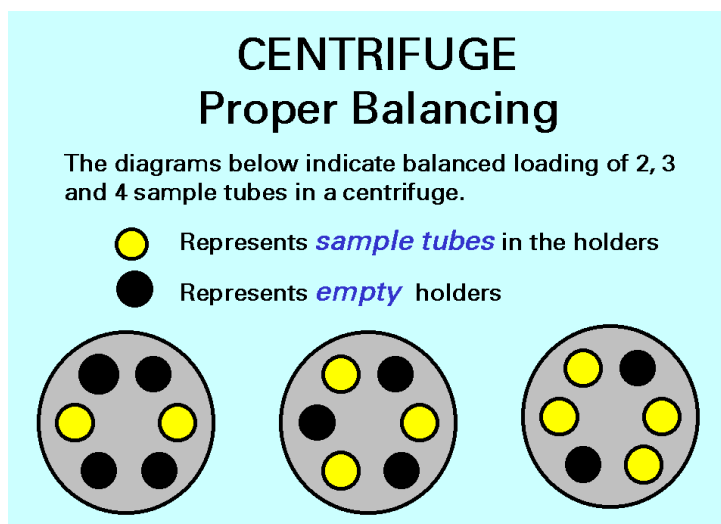


Rotor must be balanced



Tube that can be used in Centrifuge

Place the tubes in the rotor, make sure the rotor is balanced properly (see below).



- Make sure the rotor is seated on the drive correctly.
- Secure the centrifuge lid and start the machine.



make sure the lid is closed properly

- Always stay with the centrifuge until the full operating speed is reached and the machine appears to be running without vibration.
- **If there appears to be excessive noise or vibration:**
 - Stop the machine and wait for it to stop.
 - Check the rotor balancing.
 - If you can't see anything wrong, make sure no one else uses the machine and report the problem to your Supervisor.
- **If a tube breaks / cleaning the Centrifuge:**
 - Stop the machine and leave for 30 minutes to reduce the risk of aerosols.
 - Clean the centrifuge following the manufacturer's guidance or if you are unsure ask your Supervisor.
 - Make sure you wear appropriate gloves for the sample being handled.

Disposing of Waste

- Always refer to the COSHH Assessment to ensure you dispose of the containers / gloves etc correctly and safely.



FINALLY:

- If you think there is something wrong with the centrifuge, **STOP** using it, place a sign on it to ensure others don't use it and report it immediately to your Supervisor / Lab Technician.