Ethanol

Ethanol is a non-polar solvent so it is able to dissolve non-polar substances such as lipids. This means that if you place a cell in ethanol, its membrane will become permeable and allow substances to leak into and out of the cell.



As the ethanol concentration increases, membrane permeability will increase. If the ethanol concentration is high enough, enough phospholipids will dissolve to cause the plasma membrane to disintegrate completely which will kill the cell.

Specified Practical work:

1. Determination of water potential by measuring changes in mass or length

Risk Assessment-

Hazard	Risk	Precaution	Emergency	0
Broken glass	Cuts	Keep glassware away from the edge of the desk	Dispose of broken glassware carefully; elsea cuts and approve is the do not ren bould up from cuts; se k medical assistance	ale.00 13
Scalpel	Cuts	Directing of cu away P a to body; do not attempt to change blod keep scalpel analy a to the edge of the desk	Elevate uts and a ply pressure was minor cuts in out water; seek medical assistance	

Variables

- **Independent variable** (the variable that is changed) i.e. the concentration of sucrose solution.
- Dependent variable (the variable being measured, whose value depends on the independent variable) i.e. mean % change in mass of potato chip.
- Controlled variables (the variables that are kept constant)
- Surface-area-to-volume ratio of the potato chip
- i.e. Controlled using a cork borer (same circumference) and ruler (same length).
- Length of time left in the sucrose solution
- i.e Controlled using a stopwatch to time 60 minutes.
- Solume of water on the surface of the potato chip
- i.e Controlled by rolling over a paper towel three full times.
- Volume of sucrose solution

i.e 50 cm3 measuring cylinder using to measure 30 cm3 of each sucrose solution.

Same type and age of potato

i.e Potato chips should be from the same potato or the same type of potato.

Conclusion

The more concentrated the sucrose solution the more negative the mean % change in mass of the potato chip (mass is lost).

This is because the more concentrated the solution, the lower the water potential (Ψ). Water moves out of the potato chip by osmosis from an area of high Ψ to an area of low Ψ , down its water potential gradient into the surrounding solution.