

Task No: 10

Task Type: Science Inquiry: Practical

Content: Intermolecular forces

Task Description: Compare the strength of intermolecular forces.  
Write a laboratory report.

1 period in class only

Total Marks: 10

Weighting: 6.25%

Due Date: Monday 6 September 2021

## Aim

Discusses how to determine the relationship between intermolecular bonding and evaporation/boiling point (heat of vaporisation)

(1 mark)

## Equipment and Procedure

No marks awarded for copied items from the STAWA lab sheet.

(1 mark)

→ How the thermometer are used in the activity. ie: solution temp.

final temp

$\Delta$ Temp. + record.

→ labelled diagram (1/2) mark only.



## Results

(Graph paper on back page)

(3 marks)

Table - (1) - ruled, titled (Table 1: Independent  
Dependent)  
- units

Graph - (2) - types - histogram - individual  
chemicals  
- like - molecular mass  
- ruled, labelled + titled. "linking  
variables".

## Discussion

(4 marks)

- The heat of vapourisation is affected by the intermolecular bond strengths between molecules - (1)
- The higher the net polarity of the molecule, the higher the heat of vapourisation. (1)
- This is due to the amount of energy needed to disrupt the intermolecular bonding causing a phase change. - endothermic rxn. (1)
- As the molecules get larger, the degree of dispersion get larger, hence resulting in the increase of energy required for a phase change. (1)

## Conclusion

(1 mark)

As the molecules get larger, the amount of dispersion intermolecular bonding increases, hence the increase in heat of vapourisation.