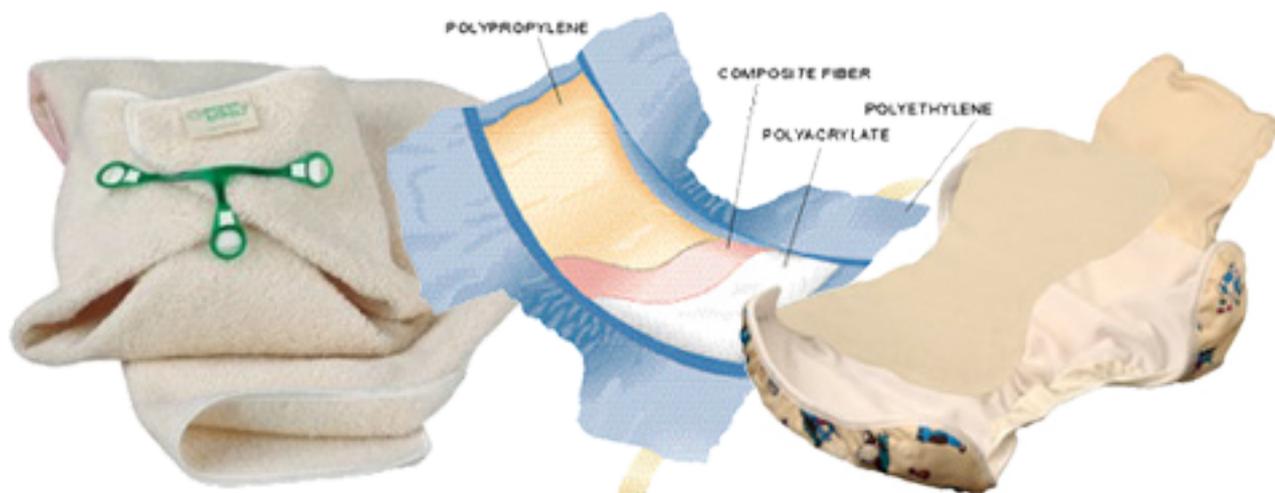


# Hydrogels - Research Booklet



One of the Key Areas in N5 Chemistry is '**Properties of Plastics**'. Hydrogels are polymers with very special properties. There are a number of different ways in which Hydrogels can be used - various **applications** of Hydrogels.

During the Research stage, you will

- examine a specific **application** of hydrogels.
- examine some **effects** this has on society/environment
- describe the **background chemistry**

You will gather practical data related to your **application** of hydrogels. You will try and find similar data on the Internet that you can **compare** with your own data. ( 2 Sources).

You will gather information about the effects on society/ environment (at least 2 Sources).

You will gather information about the background chemistry (at least 2 sources).

**IT IS IMPORTANT THAT YOU RECORD YOUR RESEARCH AND PRACTICAL WORK AS YOU WILL NEED THE INFORMATION TO COMPLETE THE COMMUNICATION STAGE.**

**YOU SHOULD USE THIS BOOKLET TO RECORD YOUR NOTES.**

Name: \_\_\_\_\_ Class \_\_\_\_\_

Teacher: \_\_\_\_\_

## **Introduction**

A guest speaker will introduce and talk about various aspects of this Topic. You may want to make some notes.

### **N5 Key Areas:**

**Structure & Bonding** - physical properties explained through bonding

**Consumer Products** - functional groups in alcohols, carboxylic acids

**Properties of Plastics** - addition polymerisation

- structure of monomers & polymers

**Summary:** What is the main property of Hydrogels that makes them so special?

State which application of Hydrogels you will investigate and the specific property of hydrogels that makes it suitable for this application.

What can you compare your application of hydrogels with? (What other alternatives to your application are there?)

Come up with a **General** Title for this Assignment that describes what you are going to investigate.

Think about how the use of your chosen application of chemistry might have an effect on society and/or the environment. Make a list of some possible impacts that you could research.

Come up with a more **Specific** Aim so you can try and work towards an 'Answer' (Conclusion) by the end of the Research Stage.

## Application - Source 1 - Own Experiment - Raw Data

You will be supplied with a method for doing this experiment. You do not need to describe the method but you will need:

A **Title** for the Experiment:

An **Aim** for the Experiment:

You should use the space below to record your **Raw Data** from this experiment.

## Application - Source 1 - Own Experiment - Processed Data

You need to **Process** your Raw Data and **Present** it in a suitable format.

Processing will often include calculations. Processing can include turning text into tables, tables into graphs, summarising text, describing information contained in a table etc.

Suitable formats include summaries, charts, diagrams, flowcharts etc.

It is very important that you make sure that appropriate title/ labels/ scales/units and headings are used.

## Application - Source 1 - Own Experiment - Evaluation

Relevant ?

Reliable ?

Perspective ?

Because ...

## **Application - Source(s) 2 - Raw Data**

Try and gather data/information from a different Source that can be compared to your own Data. This data/information may be;

- Raw data from another experiment (make sure you include title & aim too)
- Tables of data
- Graphs
- Charts
- Text

## **Application - Source 2 - Reference**

Record the Source(s) you have used in enough detail to allow someone else to find it.

## Application - Source(s) 2 - Processed Data

You need to **Process** the Raw Data/Information gathered and **Present** it in a suitable format. **This must be a DIFFERENT format from Source 1.**

Processing will often include calculations. Processing can include turning text into tables, tables into graphs, summarising text, describing information contained in a table etc.

Suitable formats include summaries, charts, diagrams, flowcharts etc.

It is very important that you make sure that appropriate title/ labels/ scales/units and headings are used.

## Application - Source(s) 2 - Evaluation

Relevant ?

Because ...

Reliable ?

Perspective ?

## Effect on Society/Environment - Source 1 - Information

## Effect on Society/Environment - Source 1 - Evaluation

Relevant ?

Because ...

Reliable ?

Perspective ?

## Effect on Society/Environment - Source 1 - Reference

Record the Source you have used in enough detail to allow someone else to find it.

## Effect on Society/Environment - Source 2 - Information

## Effect on Society/Environment - Source 2 - Evaluation

Relevant ?

Because ...

Reliable ?

Perspective ?

## Effect on Society/Environment - Source 2 - Reference

Record the Source you have used in enough detail to allow someone else to find it.

## Effect on Society/Environment - Source 3 - Information

## Effect on Society/Environment - Source 3 - Evaluation

Relevant ?

Because ...

Reliable ?

Perspective ?

## Effect on Society/Environment - Source 3 - Reference

Record the Source you have used in enough detail to allow someone else to find it.

In the pages that follow, collect **information** that will help you explain the **chemistry** involved in your chosen area of research.

**This chemistry must be of National 5 level (or above).**

This could include;

- An explanation of the basic chemistry involved
- Diagrams
- Chemical formulae
- Chemical equations
- Chemical calculations

## Underlying Chemistry

## Underlying Chemistry - References

Record the Source you have used in enough detail to allow someone else to find it.

## Underlying Chemistry

### Underlying Chemistry - References

Record the Source you have used in enough detail to allow someone else to find it.

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