# The treatment of oil spills – teacher notes

## Topic

Pollution control. Polymers – uses of intermolecular bonding.

## Timing

10 minutes

## Description

In this experiment, oil or paraffin is added to some water in a beaker to simulate an oil spill.

A special powdered polymer is then sprinkled on top.

On stirring the polymer absorbs the hydrocarbon molecules and a rubbery solid is formed which can then be scooped up.

The experiment is quite fun to do and provides several interesting points for follow-up discussion in both theoretical and applied chemistry (pollution and its control).

## Apparatus

* Eye protection
* Student worksheet
* Beaker, 100 cm3
* Plastic pipette
* Scissors

## Chemicals

* Soil-moist hydrocarbon polymer (see notes for more information)
* Oil or paraffin

## Observations

On adding the polymer, and stirring, a rubbery solid is formed very quickly and the layer of oil/ paraffin disappears.

## Notes

The essential ingredient in this experiment is the powdered polymer, which can be obtained from Flinn Scientific produce (Enviro-Bond 403) at £8 for 100g.

With careful use, 30 g should provide enough for many experiments.

The polymer itself is a copolymer of acrylamide and hydroxymethylmethacrylate, crosslinked and dehydrated.

A similar substance is produced commercially by BP under the tradename Rigidoil.

## Health, safety and technical notes

* Read our standard health and safety guidance here <https://rsc.li/3LNbkfo>
* Students must wear suitable eye protection (splash proof goggles to BS EN166 3)
* Avoid inhaling fumes.
* Paraffin is FLAMMABLE, ensure no naked flames or other sources of ignition (see CLEAPSS Hazcard [HC045b](https://science.cleapss.org.uk/Resource-Info/HC045b-Hydrocarbons-aliphatic-saturated-1.aspx)).