10 Water – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	**Write it 3 times** (English)		
Water			
anhydrous			
sedimentation			
filtration			
carbon			
chlorination			
microbes			
Fertilisers			
nitrogen			
phosphorus			
potassium			

Recall

Water is everywhere in chemistry. We need ways to **test** for it, and to make natural water **safe to drink**.

- Pure water melts at 0 °C and boils at 100 °C.
- Natural water is not pure – it has dissolved substances.

Nothing here is hard – it just lists the tests and steps.

New ideas

Read these first, then do the Practice.

1 Testing for water

Two tests show water is **present**:

- **anhydrous** cobalt(II) chloride turns **blue** → **pink**.
- anhydrous copper(II) sulfate turns **white** → **blue**.

To show water is **pure**, check it melts at 0 °C and boils at 100 °C (any dissolved substance changes these).

2 Treating drinking water

Natural water has solids, microbes and dissolved substances. To make it safe:



- **sedimentation** and **filtration** remove solids.
- passing through **carbon** removes tastes and smells.
- **chlorination** kills harmful **microbes** .

3 Fertilisers

Fertilisers help plants grow. **NPK fertilisers** contain the three key elements: **nitrogen** , **phosphorus** and **potassium** .

Watch out: the two water tests give *different* colours – anhydrous copper(II) sulfate goes white → **blue**, while anhydrous cobalt(II) chloride goes blue → **pink**. These show water is *present*; the 0/100 °C check shows it is *pure*.

Practice

Try these in order.

10.1 What colour change shows water using anhydrous copper(II) sulfate? [1]

10.2 Pure water melts and boils at what temperatures? [2]

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10.3 Name the step in water treatment that kills harmful microbes. [1]

10.4 What does carbon do in water treatment? [1]

10.5 What three elements do NPK fertilisers provide? [3]

10.6 Challenge. A sample of water is found to boil at 103 °C. State, with a reason, whether it is pure. [2]

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