

[Making soluble salts]

Q1.(2022)

Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question.

Level 3 (5–6 marks)

Identifies mistakes **AND** suggests improvements, with explanations, so a pure and / or dry sample of sodium chloride can be obtained

There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.

Level 2 (3–4 marks)

Identifies mistakes **OR** suggests improvements, with an explanation, so sample can be obtained. Sample may not be sodium chloride or be pure or dry.

There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.

Level 1 (1–2 marks)

Identifies mistakes **OR** suggests improvements so sample can be obtained but sample may not be sodium chloride or be pure or dry.

There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.

0 marks

No response or no response worthy of credit.

6

3 x 2.2
3 x 3.3a

AO2.2 Apply knowledge and understanding of scientific enquiry, techniques and procedures

Describes mistakes in method e.g.

- uses incorrect acid
- uses too much indicator
- portions of sodium hydroxide too large
- idea that solution not necessarily neutralised at 10 cm³
- solution still contains indicator
- filtering doesn't remove sodium chloride

AO3.3a Analyse information and ideas to develop experimental procedures.

Describes how experiment could be improved e.g.

- use hydrochloric acid
- use only a few drops of indicator
- use smaller portions of sodium hydroxide
- stop adding sodium hydroxide when indicator changes colour
- repeat experiment without universal indicator/ remove indicator
- remove sodium chloride by evaporation / crystallisation and leave to dry

In order to access Level 3, answers must either have explained why NaCl will not be made or have given a method by which it can be made.