Soluble salts (practical preparation)

A1. (2018)

03.3	dissolved in water		1	AO1 5.1.1.1

A2. (2018)

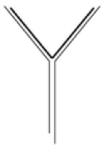
07	**Level 3:** Relevant points (reasons / causes) are identified, given in detail and logically linked to form a clear account.	5–6	AO3
	Level 2: Relevant points (reasons / causes) are identified, and there are attempts at logical linking. The resulting account is not fully clear.	3–4	AO3
	Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1–2	AO1
	No relevant content	0	
	Indicative content: • uses sulfuric acid not hydrochloric acid **or** sulfuric acid needed • uses copper carbonate / oxide not calcium carbonate **or** copper carbonate / oxide needed • add solid until solid remains **or** is in excess **or** no more reacts / dissolves so that most / all of the acid reacts • filter to remove excess **or** unreacted carbonate / oxide / solid • heat gently **or** partially evaporate **or** leave until crystals appear **or** to crystallise for **level 3** the correct chemicals must have been selected		5.4.2.3

A3. (2020)

A)

01.7	in excess		1	AO1 5.1.1.2 5.4.2.3 RPA8

B)

01.8			1	AO1 5.1.1.2 5.4.2.3 RPA8

A4. (2020)

01.9	crystallisation	allow evaporation	1	AO1 5.4.2.2 5.4.2.3 RPA8

A5. (2021)

07.6	**Level 3:** The method would lead to the production of a valid outcome. The key steps are identified and logically sequenced.	5–6	AO1 5.4.2.2 5.4.2.3 RPA8
	Level 2: The method would not necessarily lead to a valid outcome. Most steps are identified, but the method is not fully logically sequenced.	3–4	
	Level 1: The method would not lead to a valid outcome. Some relevant steps are identified, but links are not made clear.	1–2	
	No relevant content	0	
	Indicative Content: • react hydrochloric acid • (with) copper oxide • in a suitable container • warm (hydrochloric) acid • add copper oxide • until is in excess **or** until solid remains • stir • filter excess copper oxide • pour solution / filtrate into evaporating basin • use of water bath **or** use of electric heater • to heat gently **or** partially evaporate • leave to cool / crystallise For level 3 the correct chemicals must have been selected.		

A6. (2022)

05.2	filtration **or** filter		1	AO1 5.4.2.3 RPA8

A7. (2024)

A)

07.2	so all the acid reacts	allow so all the acid is used up	1	AO1 5.4.2.3 RPA8

B)

07.3		ignore references to filtration		AO1
	heat the solution (to remove some of the water)	allow evaporate some of the water / solution	1	5.1.1.2 5.4.2.3 RPA8
	leave to cool / crystallise		1	