ACTIVITY 8a – AO2b in Exams

UNIT 1, Q22(e)(ii)

(e) Burning poly(chloroethene) in an incinerator results in the formation of hydrogen chloride.

(ii) Suggest how the hydrogen chloride could be removed from the waste gases produced in an incinerator. (1)

Question Number	Answer	Additional guidance	Mark
22 (e)(ii)	• use of basic/alkaline (scrubbers) / form a ppt/salt/solid or injection of powdered activated carbon (to the flue) or pass through water / dissolve the HCl in water	Allow named examples of basic/alkaline chemicals e.g. NH_3, NaOH, $CaCO_3$ etc Scrubbers alone is insufficient Accept adsorption in granular activated carbon or coke beds Allow dissolve in steam Ignore fractional distillation of gases Do not award general descriptions of recycling	(1)

UNIT 2, Q23(c)

23 Propanoic acid, CH_3CH_2COOH, is a colourless liquid used as a preservative in animal feed. Propanoic acid can be formed by oxidising the alcohol propan-1-ol.

Propan-1-ol is heated with a concentrated solution of acidified potassium dichromate(VI).

(c) A student suggested using universal indicator to check for the presence of propanoic acid formed in the reaction mixture.

Give a reason why the result of this test is **not** likely to be conclusive. (1)

Question Number	Answer	Additional guidance	Mark
23(c)	• colour of the potassium dichromate(VI) / chromium(III) will mask the colour of the indicator or the reaction mixture will contain hydrogen ions / acid (present from the oxidising agent)	Ignore references to 'not a sharp colour change' Allow any named mineral acid	(1)