

1. Chemical Identification:

Chemical	Identify 1 point each	Person it implicates (just for the crime scene chemical) 1point each	What did you use to identify it? (0.5 point each)
1 (crime scene)	Lithium Chloride	Sir Patrick	
2 (crime scene)	Glucose	Dr. Maru, but also could just have been there from Diana	
3	Potassium Chloride		
4	Sodium Hydrogen Carbonate		
5	Lithium Chloride		
6	Sucrose		
7	Glucose		
8	Magnesium Sulfate		

2. Fiber Identification:

Fiber	Identify 2 point each	Person it implicates 1 points
1(crime scene)	Wool	Steve Trevor
2	Wool	
3	Cotton	
4	Linen	

3. Plastic Identification:

Plastic	Identify 2 points each	Person: 1 points
1(crime scene)	LDPE	Sir Patrick

2	HDPE	
3	LDPE	
4	PETE	

4. Chromatography:

Pen 1 1 point	Pen 2 1 point	Pen 3 1 point
Attach here	Attach here	Attach here

Rf: _____

Rf: _____

Rf: _____

1 point for each Rf

Rf of the crime scene note: _____ 1 point

Who does this implicate? _____ Sir Patrick _____ 2 points

5. Fingerprints:

Set 1

a. What are the types of fingerprints from the crime scene? 2 points

loop, whorl

b. Who do these fingerprints implicate? 2 points

_____ Steve Trevor

Set 2

a. What are the types of fingerprints from the crime scene? 2 points

_____ *loop, whorl*

b. Who do these fingerprints implicate? 3 points

_____ Sir Patrick (the more important bit of evidence)

Extra Questions:

1. What is ammonium chloride use for ? 2points

Adhesives and sealant chemicals, Agricultural chemicals (non-pesticidal), Intermediates, Ion exchange agents, Plating agents and surface treating agents, Processing aids, not otherwise listed, Electrical and Electronic Products, Food additives

2. How does boric acid affect the human body? 2 points

Boric acid is low in toxicity if eaten or if it contacts skin. However, in the form of borax, it can be corrosive to the eye. Borax can also be irritating to the skin. People who have eaten boric acid have had nausea, vomiting, stomach aches, and diarrhea. Diarrhea and vomit may have a blue-green color. Eating extreme amounts has resulted in a red, "boiled lobster" like skin rash, followed by skin loss. People who breathed in borax had a dry mouth, nose, and throat. Coughing, sore throat, shortness of breath, and nose bleeds have also been reported. Infants are more sensitive to pesticide exposures. Some infants that ate large amounts of boric acid also had nervous system effects. These include abnormal postures, convulsions, confusion, and coma.

3. What chemicals react with HCL and why do they react with HCl? 2 points

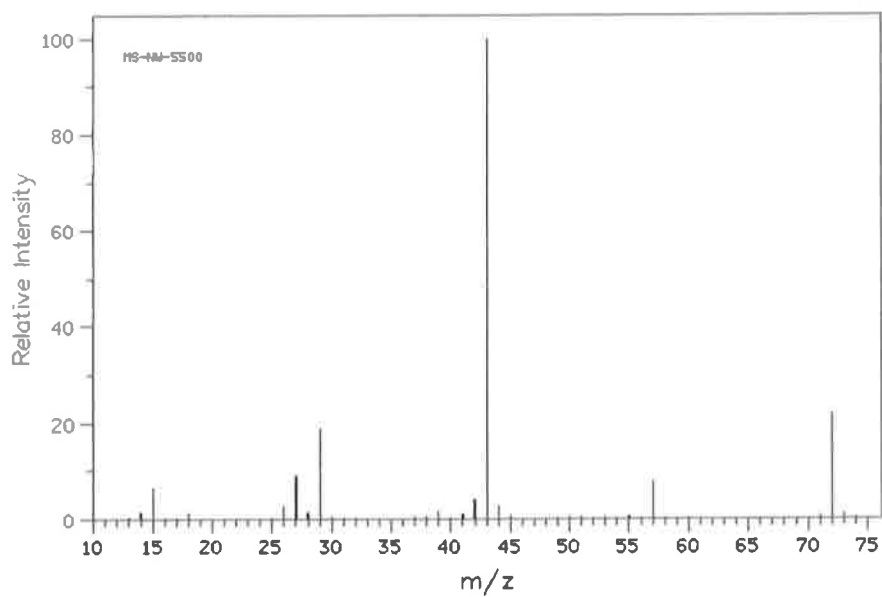
Carbonates, produce carbon dioxide gas, when this reaction occurs, carbon dioxide is produced vigorously. $\text{CaCO}_3 + 2\text{HCl} \rightarrow \text{CO}_2 + \text{H}_2\text{O} + \text{CaCl}_2$

HCl has the ability to lose its hydrogen atom in water-based solution. If there's a base present, HCl gives its hydrogen to the base. This produces two new compounds, neither one of which is a strong acid or a strong base, and is called a neutralization reaction.

4. What type of plastic would be used in CD cases? 2 points

PS

5. Circle an island, a bifurcation, and a ridge ending. 6 points



6.

Identify the base peak: 1 point

43

Identify the parent peak: 1 point

72

Identify the m/z ratio: 1 point

72

What does m/z ratio stand for? 1 point

Mass to charge ratio

Identify the chemical shown above. 2 point

C_3H_9N

Analysis: Use this page, front and back if needed, to tell us who you think stole the plans and why you think that.

Sir Patrick
Perpetrator: 8 points

Talk about why it wasn't the others: 3 points

Sir Patrick 4 points

-Chemical 1point

-Plastic 1point

-Pen 1point

-fingerprint 1point

Dr. Maru 4 points

-Chemical 1point

Steve trevor 4 points

-Fiber 1point

-Fingerprint 1point