

Forensics: Catch Me If You Can

Unknown Powder	Formula	Solubility water	Add acid	pH paper	Add NaOH	Add acid	Flame Test	Add NaOH	Add Benedicts	Hot water bath
Sodium Acetate	Na C ₂ H ₃ O ₂	S		Strong base		No reaction*				
Sodium Chloride	NaCl	S		Neutral			Yellow	N.R.	N.R.	Soluble*
Sodium Hydrogen Carbonate	NaHCO ₃	S		Weak base*						
Sodium Carbonate	Na ₂ CO ₃	S		Strong base		Bubbles*				
Lithium Chloride	LiCl	S		Neutral			Red*			
Potassium Chloride	KCl	S		Neutral			Violet*			
Calcium Nitrate	Ca(NO ₃) ₂	S		Neutral			Orange*			
Calcium Sulfate	CaSO ₄	N	N.R.*							
Calcium Carbonate	CaCO ₃	N	Bubbles*							
Cornstarch		N(lumpy)*								
Glucose		S		Neutral			Yellow	N. R.	Red Ppt.*	
Sucrose		S		Neutral			Yellow	N.R.	N.R.	Very Soluble*
Magnesium Sulfate	MgSO ₄	S		Neutral			Yellow	White Ppt.*		
Boric Acid	H ₃ BO ₃	S		Weak acid	No odor*					
Ammonium Chloride	NH ₄ Cl	S		Weak acid	Ammonia odor*					