

Mystery Powder Properties Chart

Chemical	Physical and Chemical Properties
Salt (sodium chloride, NaCl)	Does not react w/ vinegar Does not react w/ iodine Partly soluble in water Does not burn but may pop when heated Green in indicator solution Crystal shape
Sugar (sucrose, C₁₂H₂₂O₁₁)	Does not react w/ vinegar Does not react w/ iodine Very soluble in water Soluble in vinegar but does not bubble Crystal shape Melts and turns brown when heated/ caramelizes
Baking Soda (sodium bicarbonate, NaHCO₃)	Reacts w/ vinegar-produces gas Does not react w/ iodine Fine powder without visible crystals Bright white color Greenish blue in indicator solution Slightly soluble in water Does not burn
Corn Starch (C₆H₁₀O₅)	Reacts w/ iodine-turns dark blue or black Does not react with vinegar-thickens or is absorbed Bright white, fine powder, clumpy texture May somewhat dissolve in water but settles out after a while Turns brown when heated but doesn't melt Turns reddish orange w/ indicator solution
Plaster of Paris (Calcium sulfate dehydrate, CaSO₄·H₂O)	Reacts slightly with vinegar-foams or melts Does not react w/ iodine (stays orange or brown) Grayish white powder, no crystals Insoluble in water but may turn hard and warm Turns greenish/yellow in indicator solution Does not burn