

## Answer on Question #42228, Chemistry, Organic Chemistry

### Question:

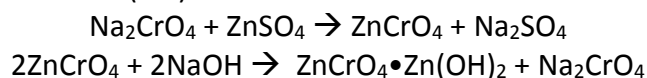
Dear Sir,

I have a question about what are the applications of double displacement reaction in paint & pharmaceutical industry?? 3 or 4 points?

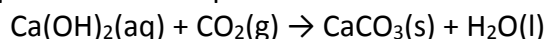
### Answer:

#### Applications of double displacement reactions in paint:

Zinc chrome yellow is an yellow pigment. It is formally basic zinc chromate,  $ZnCrO_4 \cdot Zn(OH)_2$ . It can be obtained by mixing potassium chromate  $K_2CrO_4$  and zinc chloride  $ZnCl_2$  solutions to produce Zinc chromate through a double displacement reaction and then adding NaOH to make the solution basic. The result is solid yellow  $ZnCrO_4 \cdot Zn(OH)_2$ .



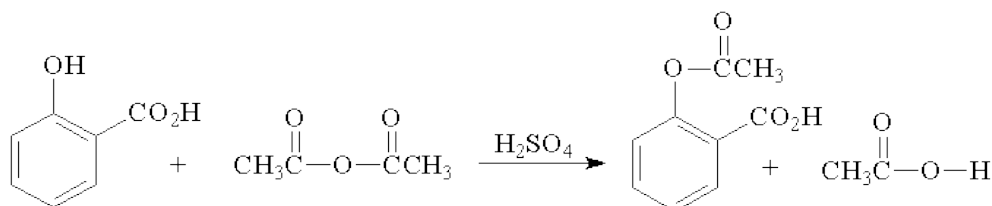
A solution of slaked lime is used for white washing walls. Calcium hydroxide reacts slowly with the carbon dioxide in air to form a thin layer of calcium carbonate on the walls. Calcium carbonate is formed after two to three days of white washing and gives a shiny finish to the walls. The formation of calcium carbonate is an example of double displacement reaction.



In this way, different colored pigments can be prepared by double displacement reactions.

#### Applications of double displacement reactions in pharmaceutical industry:

Aspirin, also known as acetylsalicylic acid, is a salicylate drug, often used as an analgesic. It is produced by acylation of salicylic acid by a double displacement reaction.



Diphenhydramine is a first-generation antihistamine possessing anticholinergic, antitussive, antiemetic, and sedative properties. Diphenhydramine can be synthesized by a double displacement reaction between bromodiphenylmethane and 2-dimethylaminoethanol:

