

CONCEPT BOOSTER

What can be better for us if it is a bag of sweet surprises!! & for each chemistry aspirant a sweet surprise cannot be better than shortcut techniques to learn & remember inorganic chemistry. My coming articles are going to be on important topics of inorganic chemistry with possibly the best shortcut tricks from my side. Stay tuned and keep your eyes on my article to enjoy essence of CHEMISTRY... ALL THE BEST!

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HEATING EFFECTS

Before we get into the detailed discussion, take a look into the following concepts :

1. Polarisation (ϕ) \propto covalent character

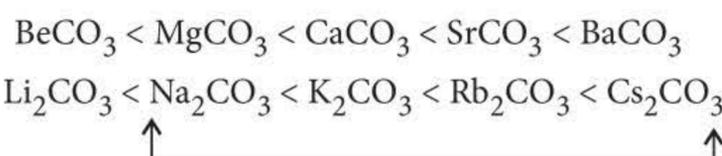
$$\propto \frac{1}{\text{ionic character}}$$

$$\propto \frac{1}{\text{thermal stability}}$$

2. $\sqrt{\phi} = 2.20$ to $3.21 \rightarrow$ oxide is amphoteric.
 $\sqrt{\phi} < 2.2 \rightarrow$ oxide is basic.
 $\sqrt{\phi} > 3.2 \rightarrow$ oxide is acidic.

METAL CARBONATES AND BICARBONATES

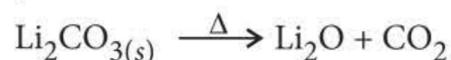
Let us take the thermal stability of alkaline earth metal carbonates and alkali metal carbonates.



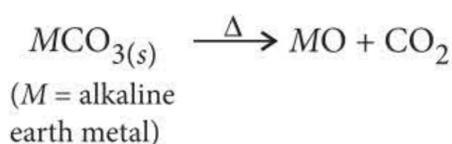
They are thermally quite stable.

Therefore, they are not easily decomposed on heating. So, no question of getting CO_2 on heating these alkali metal carbonates.

Only Li_2CO_3 decomposes on heating to give CO_2 .



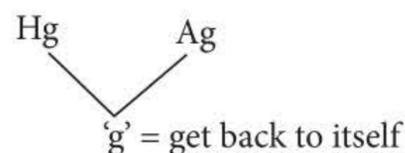
However, an alkaline earth metal carbonate decomposes on heating to give CO_2 where BeCO_3 requires least heat (least stable) and BaCO_3 requires high temperature or highest heat (most stable).



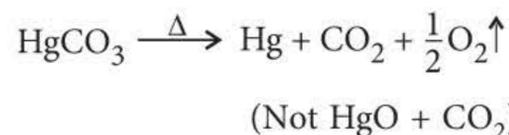
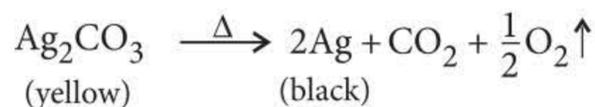
Now, coming to an unconventional thing, what happens when Ag_2CO_3 or MgCO_3 is heated?

Shortcut : Symbol of metals that ends with 'g' are Mg, Hg, Ag (mostly used these g).

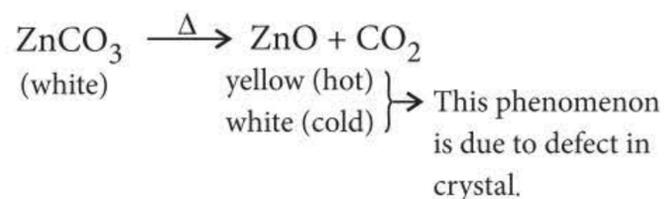
Mg doesn't come under this shortcut as it is under alkaline earth metal category.



So, when these metal carbonates will be heated, we'll get back metal. Therefore,



Carbonate part (CO_3^{2-}) will always give CO_2 and O_2 . Zn behaves as alkaline earth metal in this aspect. So,



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