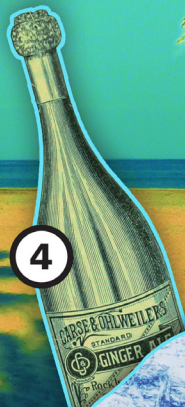


Greetings from

EARTH



5



What makes Earth habitable?

These five reactions are key to making Earth a unique planet with an oxygenated atmosphere and an abundant array of life.

1. Hydrogenation | Dehydrogenation

Nature's battery: this reaction may have powered Earth's first life forms. In cow intestines, it paves the way for methane formation.

2. Carboxylation | Decarboxylation

Without this reaction, we would have neither oxygen to breathe nor food to eat. Photosynthesis is an example of a carboxylation cycle.

3. Carbonation* | Decarbonation

Processes occurring at Earth's surface, like weathering, modulate the amount of carbon in the atmosphere and help maintain a temperature range suitable for life.

4. Carbon dioxide dissolution | Outgassing

Through this reaction, Earth's volcanoes release carbon dioxide, like bubbles in a bottle of champagne, balancing the deep carbon cycle.

5. Hydration | Dehydration

One example of this reaction at work is ocean acidification. The ocean takes up carbon dioxide from the atmosphere, threatening marine life by making it harder for organisms like corals to build their skeletons.

Other Important Reactions

Redox freezing | Melting

Metal silicate reaction

Metal freezing | Melting

*See EarthInFiveReactions.info to learn why this reaction is not represented by the champagne bottle.



Learn more about Earth in Five Reactions
EarthInFiveReactions.info

