

Equilibrium

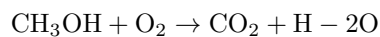
Two chemists discuss reversible reactions.

Check out this dialogue between two chemistry students.

Student 1: My professor showed this incredible demonstration in class today. He created a flame that was green and, it was a tornado flame!

Student 2: I love demos!

Student 1: The professor said the fire resulted from this reaction:



also, the tornado resulted from the air current.

Student 2: That tornado flame is cool!

Student 1: I know. I was thinking, though, could we get the CO_2 and H_2O to go back to CH_3OH and O_2 ?

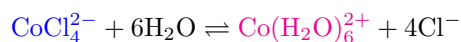
Student 2: Not likely. I think that is an irreversible reaction.

Student 1: Irreversible?

Student 2: Yeah. You can't easily get the reactants back. However, some reactions are reversible.

Student 1: Tell me more.

Student 2: My lecture professor showed this demo in class:



He was able to change the colors back and forth.

Student 1: Cool colors. So, that means this reaction is reversible.

Student 2: Yes. This is an equilibrium reaction where the forward and reverse reactions both continue.

Student 1: Good point. Does this work with all equilibrium reactions?

Question 1 Which reaction arrows represent an equilibrium reaction? (pick all that apply)

Select All Correct Answers:

(a) \leftarrow

Learning outcomes: Introduce equilibrium. Reaction arrows.
Author(s):

Equilibrium

(b) \rightleftharpoons ✓

(c) \leftrightarrow

(d) \rightleftharpoons ✓

(e) \leftrightharpoons

Hint: Think about the arrow!

Question 2 Does this reaction system will go in ?reverse?? $\text{CH}_3\text{COOH} \rightleftharpoons \text{CH}_3\text{COO}^- + \text{H}^+$

Multiple Choice:

(a) Yes ✓

(b) No

(c) I don't know
