The mechanism of a reaction is a graphical depiction of how each step of the reaction occurs at the molecular level, using curved arrows to show the movement of pairs of electrons and fish hooks to show the movement of single electrons.

**eg. 1:**

A single-step mechanism has been proposed for this reaction.

```
CH₂CHBr + KCN → CH₂CHCN + KCN
```

**eg. 2:**

A three-step mechanism has been proposed for this reaction.

**Step 1:**

```
Cl₂ + CH₄ → 2 Cl⁻ + H₂Cl
```

**Step 2:**

```
H₂O + Cl⁻ → H₂O⁻ + Cl⁻
```

**Step 3:**

```
H₂O⁻ + Cl⁺ → H₂O + Cl⁻
```

The mechanism of a reaction is merely a theory and, therefore, can not be proven and can only be disproven. The proposed mechanism of a reaction must be consistent with all available empirical data on the reaction and must not violate the fundamental rules of chemical bonding.

**Contributors**

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