Baeyer-Villiger oxidation is the oxidation of ketones to carboxylic acid esters using a peroxyacid as the oxidizing agent.

eg. 1:

```
| CH₃ | CH₃ | \( \text{O} \) | \( \text{H} \) |
```

eg. 2:

```
| CH₃ | \( \text{O} \) | CH₂ | \( \text{H} \) |
```

**Mechanism:**

When the two ligands on the carbonyl carbon in the ketone are different, Baeyer-Villiger oxidation is regioselective. Of the two alpha carbons in the ketone, the one that can stabilize a positive charge more effectively, which is the more highly substituted one, migrates from carbon to oxygen preferentially.
eg. 1:

\[
\text{CH}_3\text{C}-\text{CH}_2\text{CH}_3 \xrightarrow{\text{Baeyer-Villiger oxidation}} \text{CH}_3\text{C}^\text{O}^\text{CH}_2\text{CH}_3
\]

major product

eg. 2:

\[
\alpha\beta\text{C} \xrightarrow{\text{Baeyer-Villiger oxidation}} \text{C}^\text{O}
\]

major product

Contributors

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